The Henry Fund
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Chevron Corporation (CVX)

Energy – Integrated Oil and Gas

September 10, 2018

Stock Rating **SELL**

Investment Thesis

We issue a sell rating on Chevron Corporation [CVX], an integrated oil and gas company. We see a downside of 5% on the current stock price of $114.60 per share. The company's strategy has been to divest its less profitable operations and focus more profitable areas to improve margins along with marginal growth in production. CVX significantly reduced their costs during the low oil price environment, but we believe they have nearly exhausted that strategy. The stock price rose in 2016-2017 but it has reached its cap. The company has run out of profitable venture options and are now banking on a heavy share buyback policy to sustain EPS growth. All the positives seem to be factored into the current price and hence, in the long term the company stock does not seem like a good investment.

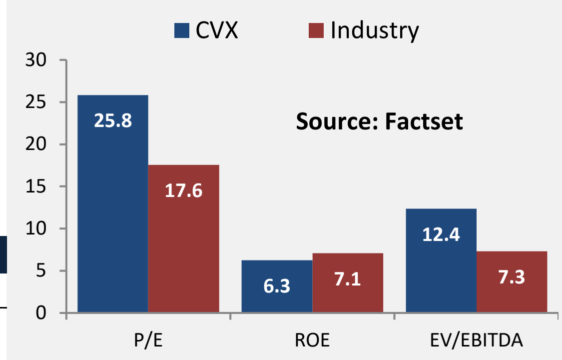
Drivers of Thesis

- Reducing margins of the upstream segment – we foresee a steady decline in average crude oil prices from $67.48/bbl. in 2018 to $56.60/bbl. in 2022.
- The US dollar will continue to strengthen mainly due to rising rates having a negative impact on revenues from international downstream segment – 1-2% decline/year despite increased production
- Current ROIC (5.49%) is lower than WACC (7.18%) – expected to improve but only up to 7.48% in 2022 which is insufficient to justify current price

Risks to Thesis

- If the crude oil price stays constant at the current average level of $67.48/bbl. we see a 10%+ upside on the current stock price
- We forecasted 4% yearly production growth which is the lower end of the 4-7% guidance, if they manage 7% then the target price will be $125.25

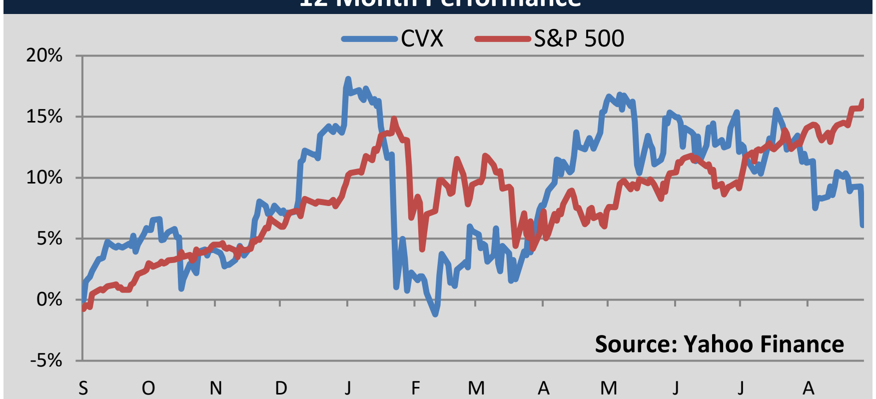
Target Price	$108-109
Henry Fund DCF	$108.71
Henry Fund DDM	$78.42
Relative Multiple	$87.15
Price Data	
Current Price	$114.60
52wk Range	$108.02 – 133.88
Consensus 1yr Target	$143.71
Key Statistics	
Market Cap (B)	$224.9
Shares Outstanding (M)	1883
Institutional Ownership	67%
Five Year Beta	1.05
Dividend Yield	3.8%
Price/Earnings (2017)	25.84
Price/Earnings (FY1)	23.88
Price/Sales (TTM)	1.76
Price/Book (mrq)	1.61
Profitability	
Operating Margin	1.92%
Profit Margin	6.82%
Return on Assets	3.58%
Return on Equity	6.26%
ROIC	5.07%



Earnings Estimates

Year	2015	2016	2017	2018E	2019E	2020E
EPS	$2.46	-$0.27	$4.88	$5.24	$5.43	$5.64
growth	-75.9%	*-110.8%*	-	*7.4%*	*3.6%*	*3.9%*

12 Month Performance



Company Description

Chevron Corporation is an American multinational corporation. It is headquartered in San Ramon, California and is active in more than 180 countries. It is engaged in every aspect of pf the oil, natural gas and geothermal energy industries, including hydrocarbon exploration and production; refining, marketing and transport; chemicals manufacturing and sales; and power generation. It is one of the largest oil companies in the world.

EXECUTIVE SUMMARY

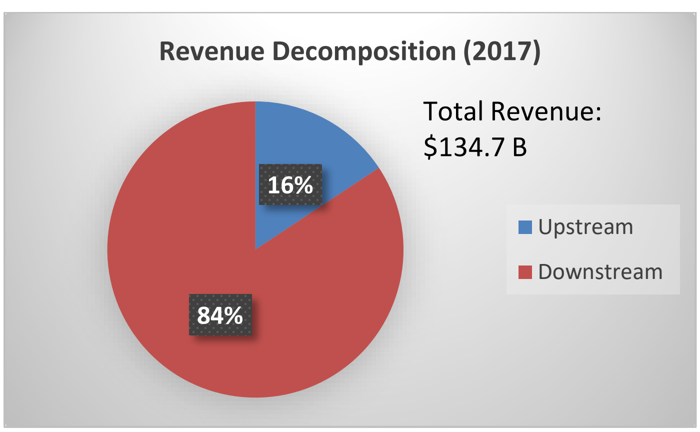
Chevron Corporation [CVX] is an integrated oil and gas company with almost saturated upstream segment margins and declining downstream segment revenue. It has a lower ROIC and ROE than its competitors, and we see the buyback strategy as having a stalling agenda until the company finds more profitable ventures.

CVX currently trades at a market price of $114.60, and our models (as of 09/10/2018) produced an intrinsic value in the range of $64.79 to $108.71. We favor our DCF-EP model, which gives a price of 108.71. It indicates a 5% downside over the current stock price and hence we place a SELL recommendation. The key assumptions factoring into this price are a marginal 4% annual production growth and steadily declining crude oil prices from 2018 to 2022.

COMPANY DESCRIPTION

Chevron Corporation is a parent organization that provides administrative, financial, management and technology support to U.S. and international subsidiaries that engage in integrated energy and chemicals operations.[1]

Upstream operations consist primarily of exploring for, developing and producing crude oil and natural gas; processing, liquefaction, transportation and regasification associated with liquefied natural gas; transporting crude oil by major international oil export pipelines; transporting, storage and marketing of natural gas; and a gas-to-liquids plant.



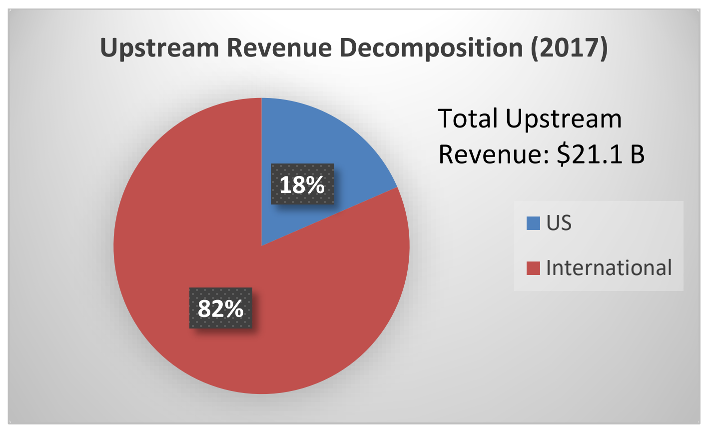
Source: CVX 10K

The disproportionate upstream and downstream revenues are due to intersegment sales of crude oil that eventually count as sales of refined products rather than sales of crude.

Downstream operations consist primarily of refining crude oil into petroleum products; marketing of crude oil and refined products; transporting crude oil and refined products by pipeline, marine vessel, motor equipment and rail car; and manufacturing and marketing of commodity petrochemicals, plastics for industrial uses and fuel and lubricant additives.

Upstream Segment

Worldwide oil-equivalent production of 2.728 million barrels per day in 2017 was up 5 percent from 2016. Production increase was mainly from major capital projects, base business, and shale and tight properties. Management estimates its average worldwide oil-equivalent production in 2018 will grow 4 to 7 percent compared to 2017. We have assumed it to be 4% going forward as it has been declining in the last few years and the company has also been divesting some upstream projects so it seems unlikely that they will be able to increase production to a large extent.



Source: CVX 10K

The company generally sells crude oil and natural gas from its producing operations under a contractual obligation to sell quantities based on production from specified properties, but some natural gas sales contracts specify delivery of fixed and determinable quantities. These sales contracts contain variable pricing formulas that are generally referenced to the prevailing market price for crude oil, natural gas or other petroleum products at the time of delivery.

Chevron has exploration and production activities in most of the world's major hydrocarbon basins. Following are the regions/countries where Chevron conducts their upstream business along with the production volume for 2017 in Oil-Equivalent (MBPD).

United States (25.0%)	**681.00**
Other Americas:	
Argentina	23.00
Brazil	13.00
Canada	98.00
Colombia	16.00
Trinidad and Tobago	5.00
Total Other Americas (5.7%)	**155.00**
Africa	
Angola	112.00
Republic of the Congo	2.00
Nigeria	250.00
Republic of Congo	38.00
Total Africa (14.7%)	**402.00**
Asia:	
Azerbaijan	25.00
Bangladesh	111.00
China	30.00
Indonesia	164.00
Kazakhstan	55.00
Myanmar	19.00
Philippines	25.00
Thailand	241.00
Total Asia (24.6%)	**670.00**
Australia/Oceania:	
Australia	256.00
Total Australia/Oceania (9.4%)	**256.00**
Europe:	
Denmark	23.00
United Kingdom	75.00
Total Europe (3.6%)	**98.00**
Total Consolidated Companies	2262.00
Affiliates (17.1%)	**466.00**
Total Including Affiliates	**2728.00**

Source: Chevron 2017 10K

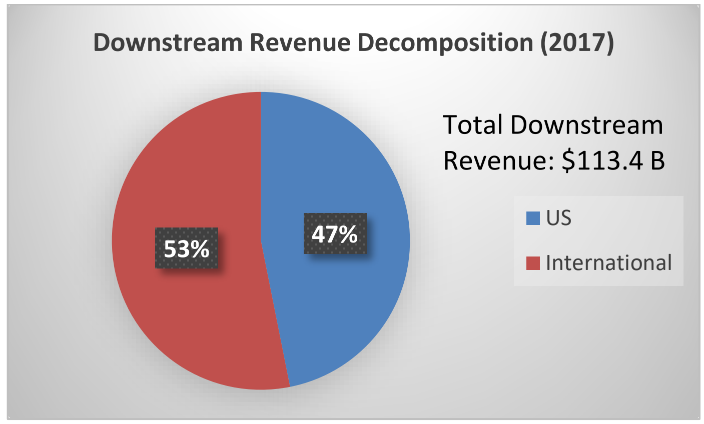
Overall, we project that even with 4% yearly production growth, the upstream revenues will grow only ~1%/year due to declining crude oil prices.

	2017	2018E	2019E	2020E	2021E	2022E
Upstream Rev. ($B)	$21.1	$29.5	$29.6	$30.0	$30.1	$30.7
Growth Rate	28.6%	39.7%	0.5%	1.1%	0.4%	2.1%

Source: Henry Fund Estimates

Downstream Segment

The downstream business consists of refining, marketing, chemical and transportation sub-units. Chevron processes both imported and domestic crude oil in its U.S. refining operations. Imported crude oil accounted for about 71 percent of Chevron's U.S. refinery inputs in 2017.



Source: CVX 10K

In the United States, the company markets under the Chevron and Texaco brands. At year-end 2017, the company supplied directly or through retailers and marketers approximately 7,700 Chevron and Texaco branded motor vehicle service stations, primarily in the southern and western states. Outside the United States, Chevron supplied directly or through retailers and marketers approximately 5,800 branded service stations, including affiliates. The company markets in Latin America using the Texaco brand and uses the Caltex brand in the Asia-Pacific region, southern Africa and the Middle East.

Chevron owns and operates a network of crude oil, natural gas and product pipelines and other infrastructure assets in the United States. In addition, Chevron operates pipelines for its 50 percent-owned CPChem affiliate. The company also has direct and indirect interests in other U.S. and international pipelines. The company's marine fleet includes both US and foreign flagged vessels. The US flagged vessels are engaged primarily in transporting refined products in the coastal waters of the United States. The foreign flagged vessels transport crude oil, LNG, refined products and feedstocks in support of the company's global upstream and downstream businesses.

Earnings for the downstream segment are closely tied to margins on the refining, manufacturing and marketing of products that include gasoline, diesel, jet fuel, lubricants, fuel oil, fuel and lubricant additives, and petrochemicals.

There margins are much narrow in comparison to the upstream business and therefore aren't as volatile or pegged to commodity process to that extent. However, one major factor influencing this segment is currency movements. An increasingly strong dollar is severely affecting the international downstream business which brings in the majority revenue comes in this segment.

The key thesis for projections is this segment is the value of US dollar against other currencies. As this segment has majority of its revenue coming from out of the US, a strong dollar will have a negative impact on the overall downstream revenues which reflects in our forecast.

	2017	2018E	2019E	2020E	2021E	2022E
↓stream Rev.($B)	$113.4	$149.2	$147.0	$143.8	$141.5	$140.7
Growth Rate	21.0%	31.6%	-1.5%	-2.1%	-1.7%	-0.5%

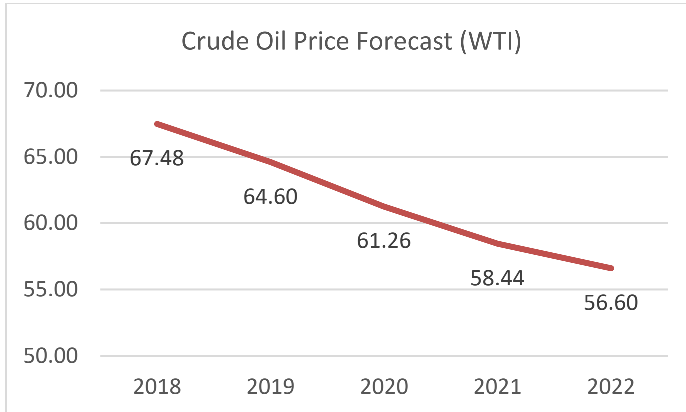
Source: Henry Fund Estimates

Besides upstream and downstream, Chevron is involved in other businesses in research and technology and environmental protection, but those segments have almost a negligible portion of incoming revenue.

Company Analysis

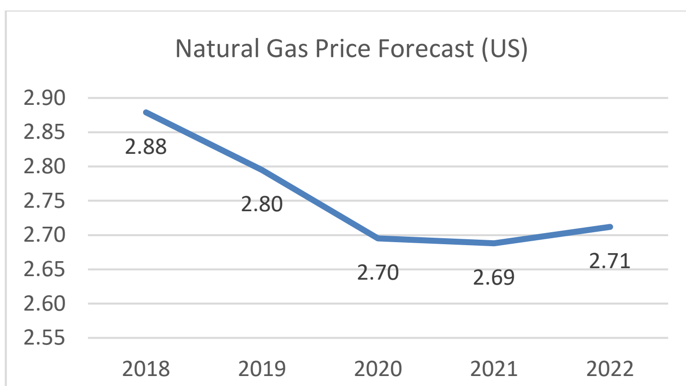
Earnings of the company depend mostly on the profitability of its upstream business segment. Earnings for the upstream segment are closely aligned with industry prices for crude oil and natural gas.

The petroleum industry had been operating in a lower oil price environment since late 2014, when oil prices began declining due to a worldwide oversupply of oil. During the fourth quarter of 2016, the Organization of Petroleum Exporting Countries (OPEC) members and some non-members, led by Russia, pledged to reduce their oil output by roughly 1.8 million barrels a day from Oct 2016 levels in an effort to draw down a global oversupply and to rebalance supply and demand. The agreement became effective in January 2017 and was originally set to expire in March 2018. In Nov 2017, the participants agreed to lengthen the output reductions through Dec 2018. These output reductions represented an unprecedented level of cooperation among oil-producing countries and, coupled with healthy oil demand, resulted in an increase in oil prices in 2017 and first half of 2018. We expect the worldwide demand for oil to increase further as economic growth around the world is forecasted to be stronger than the last several years. However, we believe this demand increase is expected to be met by much higher supplies of oil from U.S. shale production growth and OPEC and further oil inventory drawdowns which will lead to a decline in crude oil prices. The futures quotes are consistent with our theory and we have used them to forecast revenue.



Source: CME Futures Prices ($/Bbl)[2]

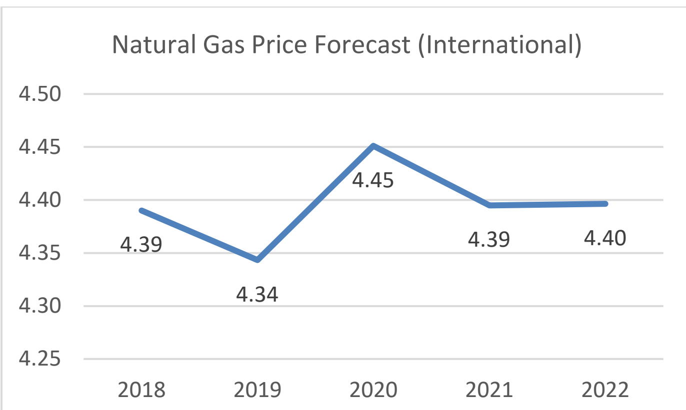
In contrast to price movements in the global market for crude oil, price changes for natural gas in many regional markets are more closely aligned with supply-and-demand conditions in those markets. The growth of unconventional shale drilling in the United States has substantially increased the supply of gas and NGLs, but the demand didn't immediately catch up to this excess supply resulting in a significant decline in their prices. To boost the demand, the industry has invested in initiatives designed to increase takeaway capacity, such as the construction of liquefied natural gas (LNG) and NGL export facilities.



Source: CME Futures Price ($/MCF)[3]

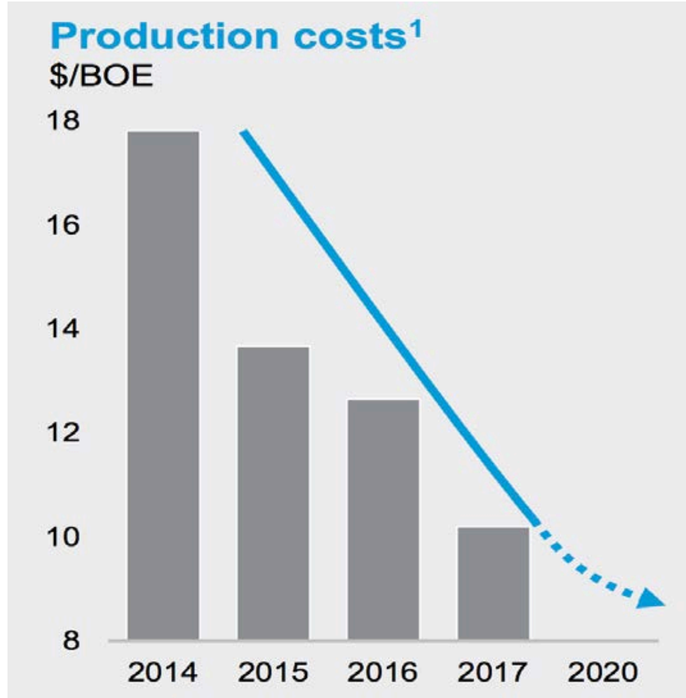
The price of natural gas been rising as the demand is catching up and we believe it will peak around the end of 2018 at $2.88 and then decline but stay range bounded according to the futures quotes with seasonal fluctuations at the most.

Outside the United States, price changes for natural gas depend on a wide range of supply, demand and regulatory circumstances. Chevron sells natural gas into the domestic pipeline market in most locations. In some locations, Chevron has invested in long-term projects to produce and liquefy natural gas for transport by tanker to other markets. The company's long-term contract prices for liquefied natural gas (LNG) are typically linked to crude oil prices. Most of the equity LNG offtake from the operated Australian LNG projects is committed under binding long-term contracts, with the remainder to be sold in the Asian spot LNG market. The Asian spot market reflects the supply and demand for LNG in the Pacific Basin and is not directly linked to crude oil prices. International natural gas realizations averaged $4.62 per MCF during 2017 and we expect it to move in the same downward trajectory as crude oil prices in the foreseeable future.



Source: Henry Fund Estimates ($/MCF)

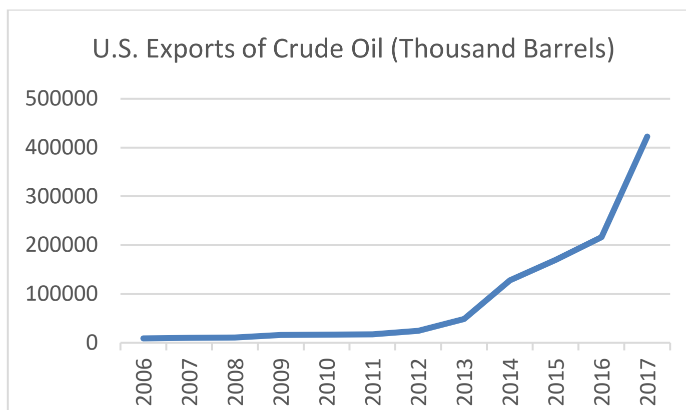
The company puts an emphasis on reducing costs in the long-run which may result in an improvement in margins, but it will not be very dramatic. That is because they have reduced operating costs significantly in the past 3 years after the commodity price debacle. This was mainly achieved due to an increase in operational efficiency and also an increasing footprint in Permian basin. We think that there is not much room left on that avenue as they are very close to the industry best ~$7-8/Bbl. Even if we do forecast costs which realize this industry leading level, it doesn't result in much of an upside over the current stock price anyway. We think that scenario is quite farfetched as Chevron's oil fields are quite diversified and such a low-cost level is realized only by those E&P companies who engage in Permian pure play.



Source: CVX Investor Presentation

INDUSTRY TRENDS

The oil and gas industry may appear to have weathered the storm of the 2015 price collapse and has responded with considerable accomplishments. In November 2017, domestic crude oil production reached its highest level in U.S. history. International trade in crude oil and petroleum products is booming with exports of 6.6 million and imports of 10.3 million barrels per day in January 2018.



Source: US EIA

The U.S. is now a net exporter of natural gas, and more natural gas liquefaction plants are planned and under construction. Oil at around $70 per barrel and gas prices below $3 per million Btu are affordable. Yet the industry faces considerable headwinds from external challenges to its future. They include:

- Continued negative public perceptions of the industry have been exacerbated by fears of its contributions to greenhouse gas emissions and global warming. Natural gas is less unpopular than oil, according to research conducted by Ernst and Young, but renewables are overwhelmingly preferred by adults and teens alike.

- The emergence of battery electric vehicles (BEVs) as viable, albeit expensive competitors to internal combustion engines has been abetted by remarkable improvements in battery performance. Batteries could also resolve issues deriving from the intermittency of wind and solar power generation.

- Decarbonization policies – either mandates and subsidies for renewables, cap-and-trade or a carbon tax -- could help close the gap between the cost of renewable power and the cost of power from natural gas. Most of these policies like LCFS in California are implemented on a state level.

- Geopolitics seem unusually fragile today, and wars are raging close to major oil and gas resources.

- Though some oil companies are hoping for stronger prices, there is a genuine risk that another oil crisis resulting in high oil prices might spur increased investment and innovation in batteries and renewables shifting focus from conventional fossil fuels

RECENT DEVELOPMENTS

Q2 Earnings Report

On 27th July 2018, Chevron reported quarterly profit and revenue that fell short of Wall Street's expectations, but the company's stock still rose slightly after it announced it would begin buying back $3 billion of its stock from shareholders each year. They have more than enough cash flow from operations to achieve this level of buy back. Chevron posted diluted earnings per share (EPS) of $1.78 on total revenues of $42.24 billion compared to the consensus estimates $2.09 for EPS and $45.59 billion for revenue. In the same period a year ago, the company reported EPS of $0.77 on total revenues of $34.48 billion.[5]

Net income for the quarter totaled $3.41 billion, compared to net earnings of $1.45 billion in the year-ago quarter. Upstream earnings jumped to $3.3 billion, while downstream earnings fell by 30% to $838 million. Higher realized prices, lower impairment charges and increased production boosted upstream earnings while downstream earnings were lower due to lower margins on sales in the company's international division. The strong dollar during the last quarter was the driver behind it.

The U.S. upstream segment posted earnings of $838 million, compared with a net loss of $102 million in the year-ago quarter. International upstream posted a profit of $2.46 billion, compared with a profit of $944 million last year. Net oil-equivalent production in the first quarter totaled 2.83 million barrels a day, up by about 46,000 compared with the year-ago quarter. Net oil-equivalent production in the United States totaled 739,000 barrels a day, up by 38,000 year over year. Average U.S. price realizations per barrel of oil rose from $41.00 a year ago to $59.00. Internationally, liquids prices rose from $45.00 a barrel a year ago to $68.00 a barrel, and net oil-equivalent production rose by 8,000 barrels a day to 2.09 million. U.S. natural gas realizations fell from $2.32 per thousand cubic feet to $1.61 while international prices rose from $4.39 to $5.64 per thousand cubic feet.

The company's profits have steadily improved as commodity prices rebound, and management says it believes the buyback program is sustainable so long as oil market conditions don't take a dramatic turn for the worse. We believe there is enough wiggle room there even if there is a price decline, the buyback program will still remain sustainable. Our forecasted prices are well within this range and therefore, we expect that the company might even exceed their buyback target. This is also fueled by the fact that the company has been focusing more on their profitable oil fields rather than spending cash on more exploration and we expect that they will keep their capex spending constant with marginal increases corresponding to production. They have also been selling off their less profitable businesses and overall the company is moving in the right direction. However, in our best judgement we believe all these positives have already been factored in the current price and our model.

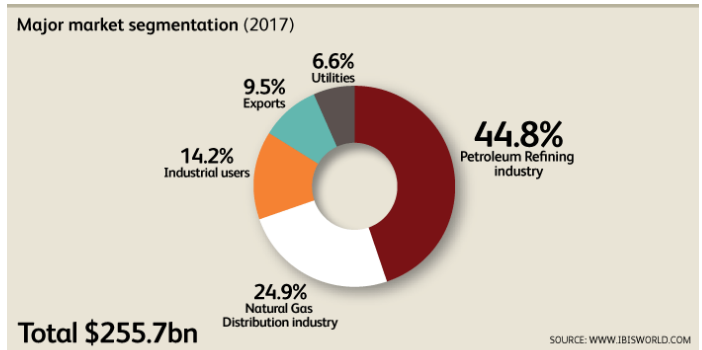
Regulation Changes

In Dec 2017, the Department of Interior (DOI) rescinded a 2015 Obama administration rule that would have set new environmental limitations on hydraulic fracturing, or fracking, on public lands.[6] This was done on the grounds that it was unnecessary and largely duplicative of state regulations. The regulation from the Bureau of Land Management, which had been opposed by oil and gas industry, would have tightened standards for well construction and waste-water management, required the disclosure of the chemicals contained in fracking fluids, and probably driven up the cost for many fracking activities. It had been held up in litigation and had not taken effect; According to the Department of Interior, reversing the regulation clears up that legal question and also lifts a costly regulation for the industry, in line with President Trump's agenda to slash regulations and advance the US energy dominance. Rescinding the rule will save up to $9,690 per well or approximately $14 million to $34 million per year in industry compliance costs. Given that Chevron routinely conducts hydraulic fracturing in its drilling and completion programs, this is a positive development for the company. Not only compliance costs but the risk of doing away with hydraulic fracturing due to certain environmental concerns does not seem like a risk anymore.

In addition, the US DOI issued a draft proposal for 2019-24 US Outer Continental Shelf (OCS) oil and gas leasing program which would make more than 90% of the nation's federal offshore acreage available and schedule the largest number of lease sales there in history. In such a scenario we believe that CVX is more than capable of leveraging this opportunity to increase their production even beyond their 4-7% guidance. The current 2017-22 program enacted late in the Obama administration put 94% of the OCS off-limits to oil and gas activity. If passed this could potentially lead to huge increases in investment and production capacity of oil and gas in the US.

Shift in Product Share

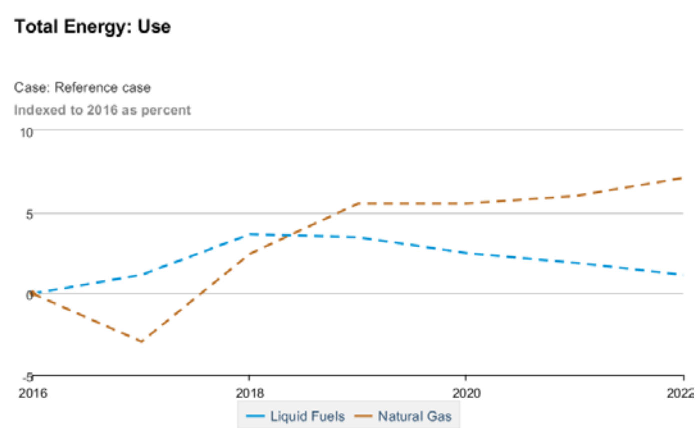
The industry supplies its natural gas and crude oil to a large group of markets, though its largest market, by far, is the Petroleum Refining industry where more than 99.0% of the crude oil produced in the United States is converted into petroleum products.



Source: IBISWORLD.COM

The industry supplies its natural gas and crude oil to a large group of markets, though its largest market, by far, is the petroleum refining industry where more than 99.0% of the crude oil produced in the United States is converted into petroleum products.[7]

The overwhelming importance of the petroleum refining industry as a market for crude oil means that its market share closely follows the oil product share. However, the recent natural gas production boom has taken this segment away from its peak share of over 60.0% of revenue, dropping it to an expected 44.8% in 2017.



Source: US EIA (Energy Demand)

As the demand for natural gases increases, we expect natural gas to increase its share of industry revenue. Variation in product share is also affected by production from new fields, as it tends to come on stream in fairly large increments, adding to the potential for substantial shifts in product share. As natural gas margins are thinner than crude margins, we expect overall industry margins to shrink due to this development. As of 2017, CVX's BOE product share of natural gas is 36.8% which we have forecasted to decline slightly every year and eventually to 35.7% by 2022.

MARKETS AND COMPETITION

The industry has benefited from improving technology in recent years. The emergence of hydraulic fracturing and horizontal drilling enabled industry operators to ramp up production at previously uneconomical deposits. The industry has grown substantially recently. Along with the rising output and price of natural gas, the recovery in crude oil prices has driven this financial performance. However, this growth is inflated due to the sharp fall in industry revenue in 2015 and 2016. Going forward, gains in revenue will flow more through to the bottom line as industry operators focus on containing costs with exploration and production activities becoming more efficient as technology improves. No major oil and gas company controls more than a small share of output and hence, the competition is driven mainly by operational efficiency and handling of debt.

Peer Comparisons

Following are the peers that were selected for comparison:

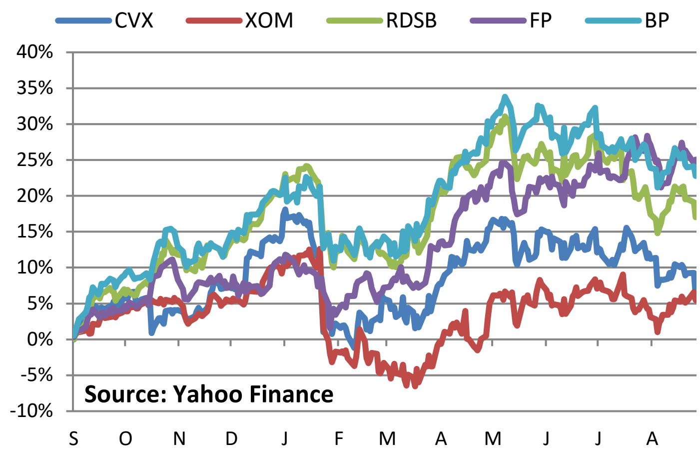
Company Name	Ticker	Market Value ($B)	Sales Growth ("17)
Chevron	CVX-US	224.9	19.2%
ExxonMobil	XOM-US	351.1	22.2%
Royal Dutch Shell	RDSB-GB	270.5	28.4%
Total	FP-FR	167.4	20.0%
BP	BP-GB	143.7	29.0%
Average		231.5	23.8%

Source: Factset

2017 was a year when most integrated oil and gas firms (upstream segment) showed significant revenue growth as the oil prices recovered which was the case with Chevron and our chosen competitors but clearly Chevron's sales grew the least. This is due to the fact that Chevron is streamlining its operations by selling off their unprofitable oil fields and hence their volume is not growing as much as it could have.

On the other side, key parameters that determine the recent overall profitability are the downstream income trajectory (dollar strengthening), exploration expense trajectory and the operating costs per barrel of oil equivalent.

12-month Stock Performance:



It is not surprising that CVX and XOM, the two US companies are the least performing stocks in the last 12 months. However, XOM is catching up to CVX most credibly due to the lower operating costs.

Company Name	Exploration Expense Change (LTM) %	Downstream Income Change (LTM) %	OPEX (/BOE)
Chevron	12.05%	-9.01%	$13.38
ExxonMobil	12.76%	NA	$9.80
RDSB	-6.28%	-10.65%	$10.28
Total	NA	-1.61%	$11.31
BP	-18.32%	10.38%	$7.18
Average	0.05%	-2.72%	$10.4

Source: Factset

Evidently, CVX has a clear disadvantage in the current conditions as its exploration expense is increasing, downstream income is getting squeezed and its operating expenses (OPEX) as a whole are higher than the competitors.

Company Name	Debt/Equity	Current Ratio	EBIT/ Interest Expense
Chevron	25.3%	1.08	8.91x
ExxonMobil	22.0%	0.81	11.47x
RDSB	40.8%	1.27	10.10x
Total	45.8%	1.35	15.07x
BP	60.5%	1.07	8.41x
Average	38.9%	1.11	10.79x

Source: Factset

Chevron has a good leverage ratio which is a positive given the rising interest rate environment, however its interest coverage ratio is lower than its peers. This means that its operating income is not as adequate to service the debt as it is for peers.

Company Name	Price to Earnings	Price to Sales	EV/ EBITDA
Chevron	18.50x	1.53x	9.03x
ExxonMobil	16.89x	1.35x	9.69x
RDSB	13.66x	0.79x	7.50x
Total	15.95x	0.98x	7.48x
BP	20.27x	0.53x	7.08x
Average	17.06x	1.04x	8.16x

Source: Factset

The company trades at a higher P/E and P/S multiple and has a comparatively high EV/EBITDA ratio on average which we believe makes the stock more expensive than it should be as other firms (as explained before) have an advantage over Chevron in certain key aspects.

Company Name	ROA	ROE	ROIC
Chevron	3.45%	8.1%	6.7%
ExxonMobil	3.66%	11.4%	10.2%
RDSB	5.67%	9.9%	7.1%
Total	5.39%	8.6%	6.4%
BP	5.74%	6.9%	4.5%
Average	4.8%	9.0%	7.0%

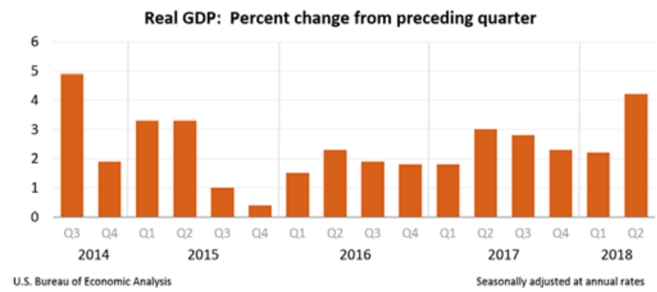
Source: Factset

It is apparent that CVX has less than average ROA, ROE and ROIC, which has forced them to adopt a heavy buyback policy due to lack of profitable investment opportunities beyond the Permian basin.

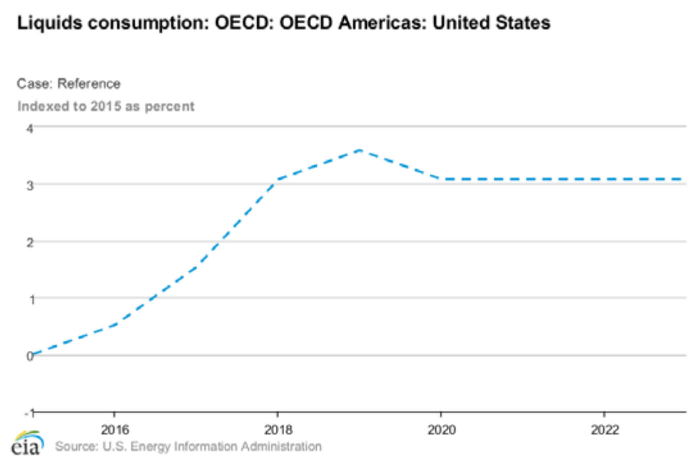
ECONOMIC OUTLOOK

GDP

GDP growth is the key indicator of economic development which influences the demand for crude oil derivatives. This is intuitive as you can imagine that in a growing economy people will buy more cars and be less frugal with their energy consumption. Also, businesses will expand and with the increase in commercial activity, there will be more energy consumption. There has been a steep growth in GDP in recent times and with controlled production globally, the supply of oil is limited. Hence, there has been a surge in oil prices which has benefited the industry. We believe that real GDP growth will continue its run in 2018 and then taper off 2019 onwards which is consistent with Federal Open Market Committee projections. Accordingly, the liquid fuels demand in the US will peak in 2019 and then taper off causing crude oil prices to decline which follows our forecast. We estimate long term nominal US GDP growth to be 3.00%.



Source: US Bureau of Economic Analysis

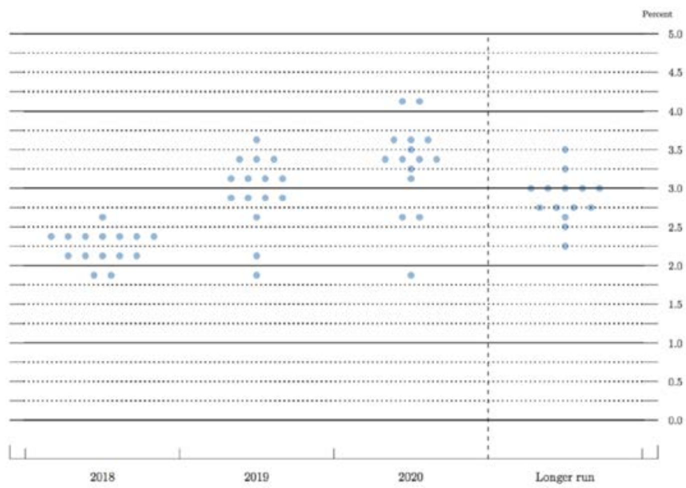


Source: EIA (Liquid Fuel Demand)

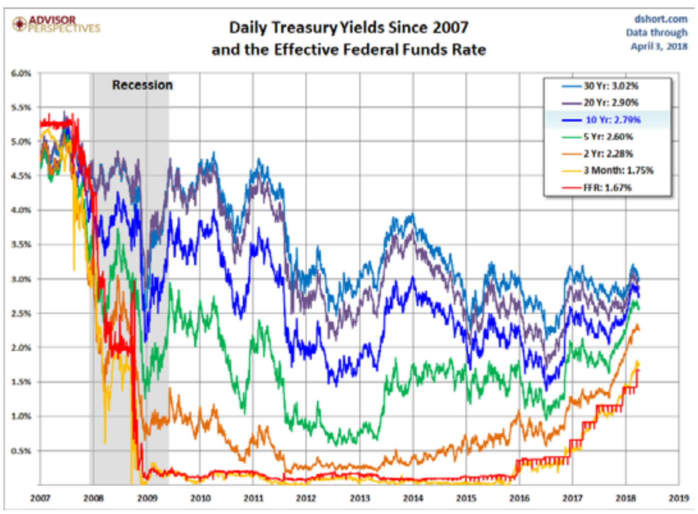
Interest Rates

The fed funds rate was increased from 1.75% to 2.00% in June 2018 and the Federal Open Market Committee (FOMC) has planned at least 1 more such hike in the year 2018. Over the next few years, the FOMC will continue to take the opportunity to reign in loose monetary policy and shore up options for a future downturn. Robust job growth and inflation will continue to drive the fed to raise rates in 2019 and 2020 as well.

Fed Dot Plot:



Source: Federal Open Market Committee



Source: Advisor Perspectives[8]

On examining the long-term history of the relationship between short and long-term interest rates between recessions we can make some conclusions. During the phase of economic expansion, the fed-funds rate is raised which raises the short-term rates and eventually, the difference between short and long-term rates narrow to the point of yield inversion which is followed by a recession. We see a similar trend unfolding at present with the gap between long and short-term rates narrowing gradually as the feds funds rate is raised. We expect the 10 and 30-year treasury yields to rise only marginally over the next three years to around 3.5-4.0% range.

Source: Advisor Perspectives

Corporate borrowing tends to be in the 7 to 30-year range and hence they are more influenced by long-term treasury rates. Hence, we expect average cost of debt to go up slightly for all firms in the next few years. This will go in the favor of Chevron as it is a low leverage business unlike its peers and the rising rates will help it maintain or even widen its edge over peers as it will be able to service debt more efficiently.

INVESTMENT POSITIVES

- An upwards move in commodity price movements which opposite to our forecast can be argued
- We have a conservative assumption for production growth which might can be exceeded by the company

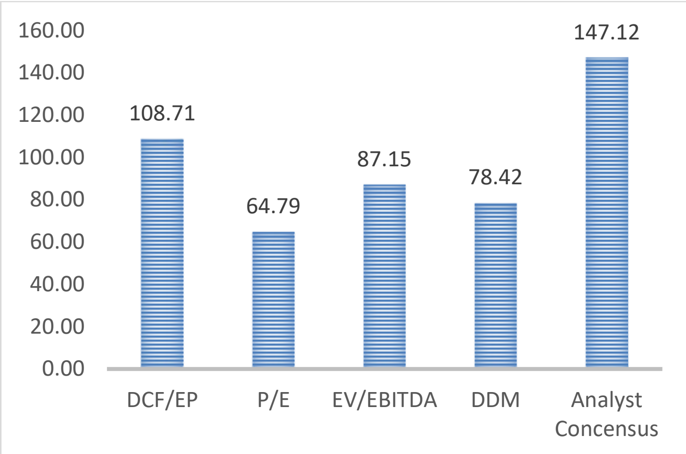
INVESTMENT NEGATIVES

- Almost saturated upstream segment margins and declining downstream segment margins.
- Low ROIC and ROE projects, buyback strategy has a stalling agenda

VALUATION

DCF-EP, DDM, relative P/E, and EV/EBITDA analysis have been used to value Chevron Corporation (CVX)

CVX currently trades at a market price of $114.60, and our models (as of 09/10/2018) produced an intrinsic value in the range of $64.79 to $108.71. We favor our DCF-EP model, which gives a price of 108.71. The DCF-EP model indicates a 5% downside over the current stock price and hence we place a SELL recommendation.



Source: Henry Fund Estimates and Factset

Income Statement: We forecasted revenues based on our production estimates and futures quotes for commodity prices. We forecasted expenses like purchased crude oil and products, SG&A, exploration expenses and other operating costs as % of sales consistent with historical averages. D&A expense was forecasted similarly but as % of PPE, following the historical trend. We forecasted interest expenses according to the debt level on the balance sheet, using the beginning of the period debt level and multiplying it by the cost of debt. We assumed a marginal tax rate of 30% to calculate the income tax expense. We took a direct average of historical values to forecast the income attributable to non-controlling interests because these values have been typically negligible and haven't changed much in past years.

Balance Sheet: We forecasted Accounts Receivable, Inventories, and Accounts Payable as % of sales consistent with the respective historical averages. We forecasted Prepaid Expenses, Accrued Liabilities, Short Term Debt, and other current assets and liabilities as direct averages of past values as they haven't changed in one direction over the past few years assuming that the company aims to keep these values in a range. We increased PPE according to our capex forecast which is based on the management's guidance for growth in production levels. We paid off long term debt as per the repayment schedule and our payout policy forecast was according to the dividend amount prescribed by the management. Treasury stock line item will grow significantly from 2018 onwards due to the buyback program. We used cash as our plug item to balance the assets and liabilities + equity. We assumed a constant goodwill as we do not forecast any acquisitions. Other items were forecasted based on historical trends either as % of sales/assets or in a range-bound fashion according to how they have behaved in the past.

Market Risk Premium: The Henry Fund consensus is 4.8%.

Beta: We used a Beta of 1.05, calculated with the help of Factset. This was the value computed from regression of CVX's weekly returns on market's (S&P 500) weekly returns over the most recent 5-year period.

CV Growth: We estimate long-term nominal growth rate of US GDP to be around 3.00%. We conservatively set Chevron's CV NOPLAT growth rate at 3.00% because we expect it to grow on par with the overall economy beyond our forecast.

Relative Valuation: Two different multiples were used in Relative valuation model: P/E and EV/EBITDA. As per both multiples the company's stock is overpriced.

KEYS TO MONITOR

Operating Margins: It needs to be verified whether Chevron's operating margins are higher or lower than what we projected as we have assumed a limited growth in that respect.

Interest rates and GDP growth: The fed funds rate and economic growth of the US is a key factor for the operations of a global firm like Chevron. The current trend supports our investment thesis.

Oil and Gas Prices: Nothing affects the revenues of Chevron more than these commodities and they need to be monitored closely.

Production Stats: It remains to be seen if Chevron manages to increase production up to the guided level given its current declining trend.

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IMPORTANT DISCLAIMER

CVX - Revenue Decomposition
(In millions of $)

	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
U.S. Upstream								
Net Crude Oil and Natural Gas Liquids Production (MBPD)	501.00	504.00	519.00	539.76	561.35	583.80	607.16	631.44
Net Natural Gas Production (MMCFPD)	1310.00	1120.00	970.00	940.00	910.00	880.00	850.00	820.00
Net Oil-Equivalent Production (MBOEPD)	719	691	681	696	713	730	749	768
Sales of Natural Gas (MMCFPD)	3913.00	3317.00	3331.00	3300.00	3300.00	3300.00	3300.00	3300.00
Sales of Natural Gas Liquids (MBPD)	26.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Revenues from Net Production								
Liquids ($/Bbl)	42.70	35.00	44.53	67.48	64.60	61.26	58.44	56.60
Natural Gas ($/MCF)	1.92	1.59	2.10	2.88	2.80	2.70	2.69	2.71
Segment Revenue	$12,748	$10,365	$13,242	$19,489	$19,238	$18,836	$18,663	$18,743
Segment Growth Rate		-18.7%	27.8%	47.2%	-1.3%	-2.1%	-0.9%	0.4%
Intersegment Revenue	$8,631	$7,217	$9,341	$13,642	$13,467	$13,185	$13,064	$13,120
Contribution Revenue	$4,117	$3,148	$3,901	$5,847	$5,772	$5,651	$5,599	$5,623
International Upstream								
Net Crude Oil and Natural Gas Liquids Production (MBPD)	1243.00	1215.00	1204.00	1252.16	1302.25	1354.34	1408.51	1464.85
Net Natural Gas Production (MMCFPD)	3959.00	4132.00	5062.00	5264.48	5475.06	5694.06	5921.82	6158.70
Net Oil-Equivalent Production (MBOEPD)	1902.83	1903.67	2047.67	2129.57	2214.76	2303.35	2395.48	2491.30
Sales of Natural Gas (MMCFPD)	4299.00	4491.00	5081.00	5284.24	5495.61	5715.43	5944.05	6181.81
Sales of Natural Gas Liquids (MBPD)	24.00	24.00	29.00	30.00	30.00	30.00	30.00	30.00
Revenues from Liftings								
Liquids ($/Bbl)	46.52	38.61	49.46	69.48	66.60	63.26	60.44	58.60
Natural Gas ($/MCF)	4.53	4.02	4.62	4.39	4.34	4.45	4.39	4.40
Segment Revenue	$27,079	$22,780	$28,680	$39,419	$39,778	$40,501	$40,769	$41,776
Segment Growth Rate		-15.9%	25.9%	37.4%	0.9%	1.8%	0.7%	2.5%
Intersegment Revenue	$11,492	$9,518	$11,471	$15,767	$15,911	$16,200	$16,307	$16,710
Contribution Revenue	$15,587	$13,262	$17,209	$23,651	$23,867	$24,300	$24,461	$25,066
Total Upstream Contribution Revenue	**$19,704**	**$16,410**	**$21,110**	**$29,498**	**$29,638**	**$29,951**	**$30,060**	**$30,689**
Growth Rate		**-16.7%**	**28.6%**	**39.7%**	**0.5%**	**1.1%**	**0.4%**	**2.1%**
U.S. Downstream								
Gasoline Sales (MBPD)	621.00	631.00	625.00	650.00	676.00	703.04	731.16	760.41
Other Refined Product Sales (MBPD)	607.00	582.00	572.00	594.88	618.68	643.42	669.16	695.93
Total Refined Product Sales (MBPD)	1228.00	1213.00	1197.00	1244.88	1294.68	1346.46	1400.32	1456.33
Sales of Natural Gas Liquids (MBPD)	127.00	115.00	109.00	115.00	115.00	115.00	115.00	115.00
Refinery Input (MBPD)	924.00	900.00	901.00	900.00	900.00	900.00	900.00	900.00
Segment Revenue	$52,872	$44,717	$53,140	$70,661	$69,460	$67,802	$66,520	$66,055
Segment Growth Rate		-15.4%	18.8%	33.0%	-1.7%	-2.4%	-1.9%	-0.7%
Intersegment Revenue	$26	$16	$14	$20	$20	$20	$20	$20
Contribution Revenue	$52,846	$44,701	$53,126	$70,641	$69,440	$67,782	$66,500	$66,035
International Downstream								
Gasoline Sales (MBPD)	389.00	382.00	365.00	379.60	394.78	410.58	427.00	444.08
Other Refined Product Sales (MBPD)	1118.00	1080.00	1128.00	1173.12	1220.04	1268.85	1319.60	1372.38
Total Refined Product Sales (MBPD)	1507.00	1462.00	1493.00	1552.72	1614.83	1679.42	1746.60	1816.46
Sales of Natural Gas Liquids (MBPD)	65.00	61.00	64.00	65.00	65.00	65.00	65.00	65.00
Refinery Input (MBPD)	778.00	788.00	760.00	770.00	770.00	770.00	770.00	770.00
Segment Revenue	$58,757	$50,026	$61,395	$80,553	$79,553	$78,058	$76,952	$76,712
Segment Growth Rate		-14.9%	22.7%	31.2%	-1.2%	-1.9%	-1.4%	-0.3%
Intersegment Revenue	$1,528	$1,068	$1,166	$2,000	$2,000	$2,000	$2,000	$2,000
Contribution Revenue	$57,229	$48,958	$60,229	$78,553	$77,553	$76,058	$74,952	$74,712
Total Downstream Contribution Revenue	**$110,075**	**$93,659**	**$113,355**	**$149,194**	**$146,993**	**$143,840**	**$141,452**	**$140,747**
Growth Rate		**-14.9%**	**21.0%**	**31.6%**	**-1.5%**	**-2.1%**	**-1.7%**	**-0.5%**
Other								
United States	$1,513	$1,105	$1,022	$1,000	$1,000	$1,000	$1,000	$1,000
Segment Growth Rate		-27.0%	-7.5%	-2.2%	0.0%	0.0%	0.0%	0.0%
Intersegment	$1,372	$960	$814	$800	$800	$800	$800	$800
Contribution Revenue (United States)	$141	$145	$208	$200	$200	$200	$200	$200
International	$42	$37	$26	$30	$30	$30	$30	$30
Segment Growth Rate		-11.9%	-29.7%	15.4%	0.0%	0.0%	0.0%	0.0%
Intersegment	$37	$36	$25	$25	$25	$25	$25	$25
Contribution Revenue (International)	$5	$1	$1	$5	$5	$5	$5	$5
Other Total Revenue	**$146**	**$146**	**$209**	**$205**	**$205**	**$205**	**$205**	**$205**
Total Revenue	**$129,925**	**$110,215**	**$134,674**	**$178,897**	**$176,836**	**$173,996**	**$171,717**	**$171,641**
Total Revenue Growth Rate		-15.2%	22.2%	32.8%	-1.2%	-1.6%	-1.3%	0.0%

CVX - Income Statement

(in billions of $, except per share values)

	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Operating Revenue	129.93	110.22	134.67	178.90	176.84	174.00	171.72	171.64
Income from equity affiliates	4.68	2.66	4.44	4.62	4.80	4.99	5.19	5.40
Other income / loss	3.87	1.60	2.61	2.71	2.82	2.94	3.05	3.18
Total Revenue	138.48	114.47	141.72	186.23	184.46	181.92	179.96	180.22
Operating Expenses:								
Purchased crude oil and products	-69.75	-59.32	-75.77	-97.66	-96.53	-94.98	-93.74	-93.70
Operating expenses	-23.03	-20.27	-19.44	-30.14	-29.80	-29.32	-28.93	-28.92
SG&A expenses	-4.44	-4.68	-4.45	-6.54	-6.47	-6.36	-6.28	-6.28
Exploration expenses	-3.34	-1.03	-0.86	-2.47	-2.45	-2.41	-2.38	-2.37
Operating taxes	-12.03	-11.67	-12.33	-16.10	-15.92	-15.66	-15.45	-15.45
EBITDA	**25.88**	**17.50**	**28.88**	**33.31**	**33.30**	**33.19**	**33.18**	**33.50**
Depreciation & Amortization Expense	-21.04	-19.46	-19.35	-18.99	-18.53	-17.96	-17.30	-16.55
EBIT (Operating Income)	**4.84**	**-1.96**	**9.53**	**14.31**	**14.77**	**15.23**	**15.88**	**16.94**
Interest Expense	0.00	-0.20	-0.31	-0.17	-0.23	-0.23	-0.21	-0.22
Pretax Income	4.84	-2.16	9.22	14.14	14.55	15.00	15.67	16.72
Income Tax Expense/Benefit	-0.13	1.73	0.05	-4.24	-4.36	-4.50	-4.70	-5.02
Consolidated Net Income	**4.71**	**-0.43**	**9.27**	**9.90**	**10.18**	**10.50**	**10.97**	**11.70**
Net income / loss attributable to noncontrolling intere	-0.12	-0.07	-0.07	-0.10	-0.10	-0.10	-0.10	-0.10
Net income / loss attributable to Chevron Corporatic	**4.59**	**-0.50**	**9.20**	**9.80**	**10.08**	**10.40**	**10.87**	**11.60**
Per Share:								
EPS	2.46	-0.27	4.88	5.24	5.43	5.64	5.94	6.39
EPS Growth	.	-110.8%	-1940.3%	7.3%	3.6%	3.9%	5.3%	7.6%
Common Shares Outstanding	1,868	1,873	1,883	1,870	1,856	1,843	1,829	1,816
Dividends per Share	4.28	4.29	4.32	4.35	4.38	4.41	4.44	4.47

CVX - Income Statement (Common Size)

	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Operating Revenue	93.82%	96.28%	95.03%	96.06%	95.87%	95.64%	95.42%	95.24%
Income from equity affiliates	3.38%	2.32%	3.13%	2.48%	2.60%	2.74%	2.88%	3.00%
Other income / loss	2.79%	1.39%	1.84%	1.46%	1.53%	1.61%	1.70%	1.76%
Total Revenue	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Expenses:								
Purchased crude oil and products	-50.37%	-51.82%	-53.46%	-52.44%	-52.33%	-52.21%	-52.09%	-51.99%
Operating expenses	-16.63%	-17.71%	-13.71%	-16.19%	-16.15%	-16.12%	-16.08%	-16.05%
SG&A expenses	-3.21%	-4.09%	-3.14%	-3.51%	-3.51%	-3.50%	-3.49%	-3.48%
Exploration expenses	-2.41%	-0.90%	-0.61%	-1.33%	-1.33%	-1.32%	-1.32%	-1.32%
Operating taxes	-8.69%	-10.19%	-8.70%	-8.65%	-8.63%	-8.61%	-8.59%	-8.57%
EBITDA	18.69%	15.29%	20.38%	17.88%	18.05%	18.25%	18.44%	18.59%
Depreciation & Amortization Expense	-15.19%	-17.00%	-13.65%	-10.20%	-10.04%	-9.87%	-9.61%	-9.19%
EBIT (Operating Income)	3.50%	-1.71%	6.72%	7.69%	8.01%	8.37%	8.82%	9.40%
Interest Expense	0.00%	-0.18%	-0.22%	-0.09%	-0.12%	-0.13%	-0.12%	-0.12%
Pretax Income	3.50%	-1.89%	6.51%	7.60%	7.89%	8.24%	8.71%	9.28%
Income Tax Expense/Benefit	-0.10%	1.51%	0.03%	-2.28%	-2.37%	-2.47%	-2.61%	-2.78%
Consolidated Net Income	3.40%	-0.38%	6.54%	5.32%	5.52%	5.77%	6.09%	6.49%
Net income / loss attributable to noncontrolling intere	-0.09%	-0.06%	-0.05%	-0.05%	-0.05%	-0.05%	-0.06%	-0.06%
Net income / loss attributable to Chevron Corporatio	3.31%	-0.43%	6.49%	5.26%	5.47%	5.72%	6.04%	6.44%

CVX - Balance Sheet

(in billions of $)

	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Assets:								
Cash and Cash Equivalents	11.02	6.99	4.81	9.24	11.33	11.91	13.85	15.69
Short -term investments	0.31	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Accounts and Note Receivables	12.86	14.09	15.35	20.33	20.09	19.77	19.51	19.50
Inventories	6.33	5.42	5.59	8.31	8.22	8.08	7.98	7.97
Prepaid expenses and other current assets	3.90	3.11	2.80	3.27	3.27	3.27	3.27	3.27
Total Current Assets	**34.43**	**29.62**	**28.56**	**41.16**	**42.92**	**43.04**	**44.61**	**46.45**
Net Property, Plant & Equipment	188.40	182.19	177.71	171.45	165.02	158.55	152.17	145.99
Long term receivables	2.41	2.49	2.85	2.94	3.02	3.12	3.21	3.31
Investments and advances	27.11	30.25	32.50	34.74	36.99	39.24	41.49	43.73
Goodwill	4.59	4.58	4.53	4.53	4.53	4.53	4.53	4.53
Assets held for sale	1.45	4.12	0.64	0.00	0.00	0.00	0.00	0.00
Deferred charges and other assets	6.16	6.84	7.02	7.20	7.39	7.58	7.78	7.98
Total Assets	**264.54**	**260.08**	**253.81**	**262.03**	**259.88**	**256.06**	**253.79**	**251.99**
Liabilities & Shareholders' Equity:								
Accounts Payable	13.52	13.99	14.57	20.22	19.99	19.67	19.41	19.40
Accrued liabilities	4.83	4.88	5.27	4.99	4.99	5.03	5.07	5.02
Short-term debt	4.93	10.84	5.19	6.99	7.67	6.62	7.09	7.13
Federal and other taxes on income	1.07	1.05	1.60	1.24	1.30	1.38	1.31	1.33
Other taxes payable	1.12	1.03	1.11	1.09	1.08	1.09	1.08	1.08
Total Current Liabilities	**25.47**	**31.79**	**27.74**	**34.53**	**35.03**	**33.79**	**33.96**	**33.96**
Long-term debt	33.54	35.19	33.48	30.86	29.70	28.54	27.39	26.28
Capital lease obligations	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Deferred credits and other noncurrent obligations	23.47	21.55	21.11	24.63	22.74	20.60	18.35	16.21
Noncurrent deferred income taxes	20.17	17.52	14.65	16.12	17.73	19.50	21.45	23.60
Noncurrent employee benefit plans	7.94	7.22	7.42	7.52	7.39	7.44	7.45	7.43
Total Liabilities	**110.65**	**113.36**	**104.49**	**113.75**	**112.68**	**109.96**	**108.70**	**107.57**
Common stock and paid-in capital	18.16	18.43	18.68	18.73	18.78	18.83	18.88	18.93
Common stock	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83
Additional paid-in capital	16.33	16.60	16.85	16.90	16.95	17.00	17.05	17.10
Treasury stock, at cost	-42.49	-41.83	-40.83	-43.83	-47.13	-50.76	-54.76	-59.15
Accumulated other comprehensive loss	-4.29	-3.84	-3.59	-3.35	-3.13	-2.92	-2.73	-2.55
Deferred compensation and benefit plan trust	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
Retained earnings / accumulated deficit	181.58	173.05	174.11	175.77	177.73	180.00	182.74	186.23
Common Shareholder's Equity	**152.72**	**145.56**	**148.12**	**147.08**	**146.00**	**144.90**	**143.89**	**143.22**
Noncontrolling interests	1.17	1.17	1.20	1.20	1.20	1.20	1.20	1.20
Total Equity	**153.89**	**146.72**	**149.32**	**148.28**	**147.20**	**146.10**	**145.09**	**144.42**
Total Liabilities & Shareholders' Equity	**264.54**	**260.08**	**253.81**	**262.03**	**259.88**	**256.06**	**253.79**	**251.99**

CVX - Balance Sheet (Common Size)

	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Assets:								
Cash and Cash Equivalents	7.96%	6.10%	3.40%	4.96%	6.14%	6.55%	7.69%	8.71%
Short -term investments	0.06%	0.06%	0.03%	0.03%	0.03%	0.04%	0.04%	0.05%
Accounts and Note Receivables	0.22%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%
Inventories	0.07%	0.11%	0.08%	0.06%	0.06%	0.06%	0.06%	0.06%
Prepaid expenses and other current assets	0.04%	0.04%	0.03%	0.02%	0.03%	0.03%	0.03%	0.03%
Total Current Assets	2.82%	2.71%	1.98%	1.76%	1.77%	1.80%	1.82%	1.81%
Property, Plant & Equipment	24.86%	25.87%	20.15%	22.10%	23.27%	23.66%	24.79%	25.77%
Accumulated Depreciation	245.73%	293.59%	243.07%	191.82%	200.22%	209.32%	217.67%	223.12%
Net Property, Plant & Equipment	-0.32%	-0.40%	-0.34%	-0.28%	-0.30%	-0.32%	-0.34%	-0.35%
Long term receivables	136.05%	159.15%	125.39%	92.07%	89.46%	87.15%	84.56%	81.01%
Investments and advances	1.74%	2.17%	2.01%	1.58%	1.64%	1.71%	1.78%	1.84%
Goodwill	19.58%	26.43%	22.93%	18.66%	20.05%	21.57%	23.05%	24.27%
Assets held for sale	3.31%	4.00%	3.20%	2.43%	2.46%	2.49%	2.52%	2.51%
Deferred charges and other assets	1.05%	3.60%	0.45%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Assets	4.44%	5.97%	4.95%	3.87%	4.01%	4.17%	4.32%	4.43%
Liabilities & Shareholders' Equity:	191.04%	227.20%	179.09%	140.70%	140.89%	140.75%	141.02%	139.83%
Accounts Payable	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accrued liabilities	0.08%	0.11%	0.08%	0.06%	0.06%	0.06%	0.06%	0.06%
Short-term debt	3.49%	4.26%	3.72%	2.68%	2.71%	2.77%	2.82%	2.79%
Federal and other taxes on income	3.56%	9.47%	3.66%	3.75%	4.16%	3.64%	3.94%	3.95%
Other taxes payable	0.77%	0.92%	1.13%	0.67%	0.70%	0.76%	0.73%	0.74%
Total Current Liabilities	0.81%	0.90%	0.79%	0.58%	0.58%	0.60%	0.60%	0.60%
Long-term debt	18.39%	27.77%	19.57%	18.54%	18.99%	18.57%	18.87%	18.85%
Capital lease obligations	0.13%	0.17%	0.13%	0.10%	0.10%	0.10%	0.10%	0.10%
Deferred credits and other noncurrent obligations	0.06%	0.08%	0.07%	0.05%	0.05%	0.05%	0.05%	0.05%
Noncurrent deferred income taxes	16.95%	18.83%	14.89%	13.22%	12.33%	11.32%	10.20%	9.00%
Noncurrent employee benefit plans	14.56%	15.30%	10.34%	8.65%	9.61%	10.72%	11.92%	13.09%
Total Liabilities	5.73%	6.30%	5.24%	4.04%	4.00%	4.09%	4.14%	4.12%
Common stock	79.91%	99.03%	73.73%	61.08%	61.08%	60.44%	60.40%	59.69%
Additional paid-in capital	1.32%	1.60%	1.29%	0.98%	0.99%	1.01%	1.02%	1.02%
Treasury stock, at cost	11.79%	14.50%	11.89%	9.07%	9.19%	9.34%	9.47%	9.49%
Accumulated other comprehensive loss	-30.69%	-36.55%	-28.81%	-23.54%	-25.55%	-27.90%	-30.43%	-32.82%
Deferred compensation and benefit plan trust	-3.10%	-3.36%	-2.53%	-1.80%	-1.70%	-1.61%	-1.52%	-1.41%
Retained earnings / accumulated deficit	-0.17%	-0.21%	-0.17%	-0.13%	-0.13%	-0.13%	-0.13%	-0.13%
Common Shareholder's Equity	131.13%	151.17%	122.85%	94.39%	96.35%	98.94%	101.54%	103.34%
Noncontrolling interests	110.28%	127.15%	104.52%	78.98%	79.15%	79.65%	79.96%	79.47%
Total Equity	0.84%	1.02%	0.84%	0.64%	0.65%	0.66%	0.67%	0.67%
Total Liabilities & Shareholders' Equity	111.13%	128.17%	105.36%	79.62%	79.80%	80.31%	80.63%	80.14%

CVX - Historical Cash Flow Statement

(in millions of $)

	2015	2016	2017
Net cash provided by operating activities	19456	12846	20515
Net income / loss	4710	-431	9269
Adjustments	14746	13277	11246
Depreciation, depletion and amortization	21037	19457	19349
Dry hole expense	2309	489	198
Distributions less / more than income from equity affiliates	-760	-1227	-2214
Net before-tax gains on asset retirements and sales	-3215	-1149	-2195
Net foreign currency effects	-82	186	131
Deferred income tax provision	-1861	-3835	-3203
Net increase / decrease in operating working capital	-1979	-550	476
Minority interest in net income	--	--	--
Net income attributable to noncontrolling interests	--	--	--
Increase / decrease in long-term receivables	-59	-131	-368
Net decrease / increase in other deferred charges	25	235	-199
Cash contributions to employee pension plans	-868	-870	-980
Other	199	672	251
Net cash provided by operating activities excluding working capital	--	--	--
Net cash used for investing activities	-23808	-16852	-8201
Cash portion of Unocal acquisition, net of Unocal cash received	--	--	--
Acquisition of Atlas Energy	--	--	--
Advance to Atlas Energy	--	--	--
Capital expenditures	-29504	-18109	-13404
Proceeds and deposits related to asset sales	5739	2777	5247
Net maturities of time deposits	8	0	0
Net sales / purchases of marketable securities	122	297	4
Net borrowing / repayment of loans by equity affiliates	-217	-2034	-16
Net sales / purchase of other short-term investments	44	217	-32
Net cash provided by / used for financing activities	2815	25	-14554
Net borrowings / repayments of short-term obligations	-335	2130	-5142
Proceeds from issuance of long-term debt	11091	6924	3991
Repayments of long-term debt and other financing obligations	-32	-1584	-6310
Cash dividends — common stock	-7992	-8032	-8132
Distributions to noncontrolling interests	-128	-63	-78
Net sales / purchases of treasury shares	211	650	1117
Redemption of preferred stock of subsidiaries	--	--	--
Effect of exchange rate changes on cash and cash equivalents	-226	-53	65
Net change in cash and cash equivalents	-1763	-4034	-2175
Cash and cash equivalents at beginning of period	12785	11022	6988
Cash and cash equivalents at end of period	11022	6988	4813

CVX - Forecasted Cash Flow Statement

(in billions of $)

	2018E	2019E	2020E	2021E	2022E
Operating Activities:					
Net Income / Starting Line	9.90	10.18	10.50	10.97	11.70
D&A expense	18.99	18.53	17.96	17.30	16.55
Change in Deferred Income Taxes	3.52	-1.89	-2.14	-2.25	-2.14
Change in operating assets and liabilities:					
Change in Accounts Receivable	4.97	-0.23	-0.32	-0.26	-0.01
Change in Inventories	-2.73	0.10	0.13	0.11	0.00
Change in Other Current Assets	0.47	0.00	0.00	0.00	0.00
Change in Accounts Payable	5.65	-0.23	-0.32	-0.26	-0.01
Change in Other Current Liabilities	-0.39	0.05	0.10	-0.08	0.02
Net Operating Cash Flow	31.45	28.66	28.43	28.08	28.28
Investing Activities:					
Capital expenditures	-12.73	-12.10	-11.49	-10.92	-10.37
Change in ST Investments	-0.00	-0.00	-0.00	-0.00	-0.00
Change in Long Term Investments	-2.25	-2.25	-2.25	-2.25	-2.25
Change in Other LT Assets	-0.18	-0.19	-0.19	-0.20	-0.20
Net Investing Cash Flow	-15.16	-14.53	-13.93	-13.36	-12.82
Financing Activities					
Change in long-term debt	-0.82	-0.47	-2.22	-0.67	-1.08
Change in other LT liabilities	0.10	-0.14	0.06	0.01	-0.02
Shares Issued/Repurchased	-3.00	-3.30	-3.63	-3.99	-4.39
Dividends paid	-8.13	-8.13	-8.13	-8.12	-8.12
Net Financing Cash Flow	-11.85	-12.04	-13.92	-12.78	-13.61
Net change in cash and cash equivalents	4.43	2.09	0.57	1.94	1.84
Cash at the beginning of the period	4.81	9.24	11.33	11.91	13.85
Cash at the end of the period	9.24	11.33	11.91	13.85	15.69

CVX - Value Drivers **WACC** 7.18% **Cost of Debt** 3.83% **Tax Rate** 30.00%

(in billions of $)

	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Revenue	138.48	114.47	141.72	186.23	184.46	181.92	179.96	180.22
(-) COGS Purchased products	-69.75	-59.32	-75.77	-97.66	-96.53	-94.98	-93.74	-93.70
(-) Depreciation & Non Goodwill Amortization Expense	-21.04	-19.46	-19.35	-18.99	-18.53	-17.96	-17.30	-16.55
(-) Operating Expenses	-23.03	-20.27	-19.44	-30.14	-29.80	-29.32	-28.93	-28.92
(-) SG&A	-4.44	-4.68	-4.45	-6.54	-6.47	-6.36	-6.28	-6.28
(-) Exploration expenses	-3.34	-1.03	-0.86	-2.47	-2.45	-2.41	-2.38	-2.37
(-) Operating taxes	-12.03	-11.67	-12.33	-16.10	-15.92	-15.66	-15.45	-15.45
(+)Interest on Operating Leases	0.13	0.12	0.09	0.11	0.10	0.10	0.09	0.09
EBITA	4.97	-1.84	9.62	14.42	14.87	15.33	15.97	17.03
Less Adjusted Taxes								
Income Tax Provision	-0.13	1.73	0.05	-4.24	-4.36	-4.50	-4.70	-5.02
(-)Tax on Non-Operating Income	2.57	1.28	2.11	2.20	2.29	2.38	2.47	2.57
(+)Tax Shield on Interest expense	0.00	-0.06	-0.09	-0.05	-0.07	-0.07	-0.06	-0.07
(+)Tax Shield on Interest on Operating Leases	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adjusted Taxes	-1.69	1.40	-1.15	-5.49	-5.71	-5.94	-6.23	-6.65
Change in net DTL	**-1.76**	**-2.65**	**-2.86**	**1.47**	**1.61**	**1.77**	**1.95**	**2.15**
NOPLAT	1.52	-3.09	5.60	10.40	10.77	11.16	11.69	12.53
NOPLAT Growth	-	-	-	86%	4%	4%	5%	7%
Cash	11.02	6.99	4.81	9.24	11.33	11.91	13.85	15.69
Excess Cash (Cash less 2% Sales, >= 0)	8.25	4.70	1.98	5.52	7.64	8.27	10.25	12.09
Normal Cash	2.77	2.29	2.83	3.72	3.69	3.64	3.60	3.60
Accounts Receivable	12.86	14.09	15.35	20.33	20.09	19.77	19.51	19.50
Inventories	6.33	5.42	5.59	8.31	8.22	8.08	7.98	7.97
Other Current Assets	3.90	3.11	2.80	3.27	3.27	3.27	3.27	3.27
Operating CA	25.87	24.91	26.57	35.63	35.27	34.76	34.36	34.35
Accounts Payable	13.52	13.99	14.57	20.22	19.99	19.67	19.41	19.40
Other	2.19	2.08	2.71	2.33	2.37	2.47	2.39	2.41
Operating CL	15.71	16.06	17.28	22.55	22.36	22.14	21.80	21.81
Operating WC	10.16	8.84	9.29	13.09	12.91	12.62	12.56	12.54
Net PPE*	188.40	182.19	177.71	171.45	165.02	158.55	152.17	145.99
PV of Operating Leases	3.24	2.40	2.78	2.63	2.53	2.43	2.33	2.24
Other Assets	6.16	6.84	7.02	7.20	7.39	7.58	7.78	7.98
Other LT Operating Assets	9.39	9.24	9.79	9.83	9.92	10.01	10.11	10.22
Other long-tern liabilities	7.94	7.22	7.42	7.52	7.39	7.44	7.45	7.43
Other LT Operating Liabilities	7.94	7.22	7.42	7.52	7.39	7.44	7.45	7.43
Invested Capital	**200.01**	**193.05**	**189.38**	**186.84**	**180.46**	**173.75**	**167.39**	**161.32**
Beginning Invested Capital		**200.01**	**193.05**	**189.38**	**186.84**	**180.46**	**173.75**	**167.39**
NOPLAT	**1.52**	**-3.09**	**5.60**	**10.40**	**10.77**	**11.16**	**11.69**	**12.53**
ROIC		-1.54%	2.90%	5.49%	5.76%	6.18%	6.73%	7.48%
Change in Invested Capital		-6.96	-3.67	-2.54	-6.38	-6.72	-6.36	-6.07
NOPLAT	1.52	-3.09	5.60	10.40	10.77	11.16	11.69	12.53
FCF	**1.52**	**3.87**	**9.27**	**12.93**	**17.15**	**17.87**	**18.04**	**18.60**
Beginning Invested Capital		**200.01**	**193.05**	**189.38**	**186.84**	**180.46**	**173.75**	**167.39**
ROIC		**-1.54%**	**2.90%**	**5.49%**	**5.76%**	**6.18%**	**6.73%**	**7.48%**
EP	**0.00**	**-17.44**	**-8.25**	**-3.19**	**-2.64**	**-1.79**	**-0.78**	**0.51**

CVX

WACC Calculations:

Risk Free Rate:	3.00%
Beta:	1.05
ERP:	4.80%
Cost of Equity	8.04%
Pre-tax cost of debt	3.83%
Marginal tax rate	30.00%
Cost of Debt	2.68%
Shares Outstanding	1.88
Current Price:	$114.60
Market Value of Equity	215.79
Short Term Debt	5.19
Long Term Debt	33.48
PV of Operating Leases	2.78
Total Debt + PV of Operating Leases	41.44
Total Value of Firm	257.24
WACC	7.18%

CVX

Discounted Cash Flow (DCF) and Economic Profit (EP) Valuation Models

Key Inputs:

CV Growth	3.00%
CV ROIC	8.00%
WACC	7.18%

Fiscal Years Ending Dec. 31	2018E	2019E	2020E	2021E	2022E
	1	2	3	4	5
DCF Model					
NOPLAT	10.40	10.77	11.16	11.69	12.53
Beginning Invested Capital	189.38	186.84	180.46	173.75	167.39
Ending Invested Capital	186.84	180.46	173.75	167.39	161.32
Change in Invested Capital	-2.54	-6.38	-6.72	-6.36	-6.07
ROIC	5.5%	5.8%	6.2%	6.7%	7.5%
Free Cash Flows	12.93	17.15	17.87	18.04	18.60
CV					193.07
PV of Cash Flows	12.07	14.93	14.52	13.68	149.67
Value of Operating Assets	**204.86**				
Excess Cash	1.98				
Short Term Investments	0.01				
Noncontrolling interests	1.20				
Long Term Investments	32.50				
Value of Non-Operating Assets	35.68				
Total Debt + PV of Operating Leases	41.44				
Value of Equity	199.10				
Shares Outstanding	1.88				
Intrinsic Value per share	$105.74				
Value Adjusted for Partial Year	$108.71				
EP Model					
Beginning Invested Capital	189	187	180	174	167
ROIC	5%	6%	6%	7%	7%
Economic Profit	-3	-3	-2	-1	1
CV					32
PV of Economic Profit	-3	-2	-1	-1	23
PV of Economic Profit	15				
Beginning Invested Capital	189				
Value of Operating Assets	**205**				
Excess Cash	2				
Short Term Investments	0				
Long Term Investments	32				
Noncontrolling interests	1				
Value of Non-Operating Assets	36				
Total Debt + PV of Operating Leases	41				
Value of Equity	199				
Shares Outstanding	2				
Intrinsic Value per share	$105.74				
Value Adjusted for Partial Year	$108.71				
Up/Downside	-5.14%				

CVX

Dividend Discount Model (DDM) or Fundamental P/E Valuation Model

Fiscal Years Ending Dec. 31	2018E	2019E	2020E	2021E	2022E
EPS	$ 5.24	$ 5.43	$ 5.64	$ 5.94	$ 6.39
Key Assumptions					
CV growth	3.00%				
CV ROE	8.07%				
Cost of Equity	8.04%				
Future Cash Flows:	1	2	3	4	5
P/E Multiple (CV Year)					12.46
EPS (CV Year)					6.39
Future Stock Price					79.65
Dividends Per Share	$ 4.35	$ 4.38	$ 4.41	$ 4.44	$ 4.47
Discounted Cash Flows	$ 4.03	$ 3.75	$ 3.50	$ 3.26	$ 61.74
Intrinsic Value	$ 76.28				
Value Adjusted for Partial Year	$ 78.42				

CVX

Relative Valuation Models

Ticker	Company	Price	EPS 2018E	EPS 2019E	P/E '18	P/E '19	EV/EBITDA 2018E	EV/EBITDA 2019E
XOM-US	ExxonMobil	81.83	4.63	5.53	17.67x	14.80x	7.80x	6.80x
RDSB-GB	Royal Dutch Shell B	32.11	2.71	3.20	11.83x	10.05x	5.35x	4.85x
FP-FR	Total	60.22	5.44	6.03	11.07x	9.98x	5.27x	4.75x
BP-GB	BP	6.95	0.56	0.62	12.50x	11.21x	4.90x	4.40x
				Average*	**13.27**	**11.51**	**5.83**	**5.20**
PXD-US	Pioneer Natural Resources	114.60	7.74	8.83	14.81x	12.98x	6.00x	5.23x

Implied Value:

Relative P/E (EPS18)	**$ 64.79**
Relative P/E (EPS19)	**$ 56.20**
Relative EV/EBITDA '18	**$ 87.15**
Relative EV/EBITDA '19	**$ 77.91**

CVX

Present Value of Operating Lease Obligations (2017)

Year	Operating Leases
2018	0.693
2019	0.628
2020	0.474
2021	0.339
2022	0.223
Thereafter	0.538
Total Minimum Payments	2.895
Less: Interest	0
PV of Minimum Payments	2.775

Capitalization of Operating Leases

Pre-Tax Cost of Debt	3.83%
Number Years Implied by Year 6 Payment	2.4

Year	Lease Commitment	PV Lease Payment
1	0.693	0.7
2	0.628	0.6
3	0.474	0.5
4	0.339	0.3
5	0.223	0.2
6 & beyond	0.223	0.4
PV of Minimum Payments		2.78

CVX

Present Value of Operating Lease Obligations (2016)

Year	Operating Leases
2018	615.000
2019	554.000
2020	387.000
2021	298.000
2022	235.000
Thereafter	392.000
Total Minimum Payments	2481
Less: Interest	83
PV of Minimum Payments	2398.007

Capitalization of Operating Leases

Pre-Tax Cost of Debt	3.83%
Number Years Implied by Year 6 Payment	1.7

Year	Lease Commitment	PV Lease Payment
1	615	615.0
2	554	554.0
3	387	387.0
4	298	298.0
5	235	235.0
6 & beyond	235	309.0
PV of Minimum Payments		2398.01

CVX

Key Management Ratios

Fiscal Years Ending Dec. 31	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Liquidity Ratios								
Current Ratio (Current Assets/Current Liabilities)	1.35	0.93	1.03	1.19	1.23	1.27	1.31	1.37
Op. Cash Flow Ratio (Operating CF/Current Liabilities)	0.76	0.40	0.74	0.91	0.82	0.84	0.83	0.83
Quick Ratio (Cash&liquid assets/Current Liabilities)	0.44	0.22	0.17	0.27	0.32	0.35	0.41	0.46
Activity or Asset-Management Ratios								
Assets Turnover Ratio (Sales/Avg Total Assets)	0.49	0.42	0.52	0.69	0.68	0.67	0.67	0.68
Receivables Turnover Ratio (Sales/Avg Account Receivables	10.10	8.18	9.15	10.03	8.75	8.73	8.74	8.80
Financial Leverage Ratios								
Debt-to Equity Ratio (Total Debt/Total Equity)	0.27	0.33	0.28	0.27	0.27	0.26	0.25	0.25
Equity Ratio (Total Equity/Total Assets)	0.58	0.56	0.59	0.57	0.57	0.57	0.57	0.57
Interest Coverage Ratio (EBIT/Interest Expense)	N/A	-9.75	31.04	84.53	65.43	65.08	75.71	75.92
Profitability Ratios								
Return on Assets (Net Income/Total Assets)	1.78%	-0.17%	3.65%	3.78%	3.92%	4.10%	4.32%	4.64%
Return on Equity (Net Income/Shareholders Equity)	3.06%	-0.29%	6.21%	6.68%	6.92%	7.19%	7.56%	8.10%
Operating Margin (EBIT/Sales)	3.50%	-1.71%	6.72%	7.69%	8.01%	8.37%	8.82%	9.40%
Profit Marging (Net Income/Sales)	3.31%	-0.43%	6.49%	5.26%	5.47%	5.72%	6.04%	6.44%
Payout Policy Ratios								
Payout Ratio (Dividend Payout Ratio)	174.30%	-1616.73%	88.47%	82.98%	80.64%	78.16%	74.74%	69.94%

					WTI	Crude	(CV Year)			
DCF/EP Price	108.71	$40.00	$45.00	$50.00	$55.00	$56.60	$60.00	$65.00	$70.00	$75.00
	$1.75	72.02	82.95	93.87	104.79	108.29	115.72	126.64	137.56	148.49
	$2.00	72.13	83.06	93.98	104.90	108.40	115.82	126.75	137.67	148.59
	$2.25	72.24	83.16	94.09	105.01	108.51	115.93	126.86	137.78	148.70
	$2.50	72.35	83.27	94.20	105.12	108.61	116.04	126.97	137.89	148.81
Henry Hub	$2.71	72.44	83.36	94.29	105.21	108.71	116.13	127.06	137.98	148.90
(CV Year)	$3.00	72.57	83.49	94.41	105.34	108.83	116.26	127.18	138.11	149.03
	$3.25	72.67	83.60	94.52	105.44	108.94	116.37	127.29	138.21	149.14
	$3.50	72.78	83.71	94.63	105.55	109.05	116.48	127.40	138.32	149.25
	$3.75	72.89	83.82	94.74	105.66	109.16	116.58	127.51	138.43	149.35

					WTI	Crude	(CV Year)			
DDM Price	78.42	$40.00	$45.00	$50.00	$55.00	$56.60	$60.00	$65.00	$70.00	$75.00
	$1.75	46.63	56.08	65.55	75.02	78.06	84.50	93.99	103.48	112.98
	$2.00	46.72	56.18	65.64	75.12	78.15	84.60	94.09	103.58	113.07
	$2.25	46.82	56.27	65.74	75.21	78.25	84.69	94.18	103.67	113.16
	$2.50	46.91	56.36	65.83	75.31	78.34	84.79	94.27	103.76	113.26
Henry Hub	$2.71	46.99	56.44	65.91	75.39	78.42	84.87	94.35	103.84	113.34
(CV Year)	$3.00	47.10	56.55	66.02	75.49	78.53	84.98	94.46	103.95	113.45
	$3.25	47.19	56.65	66.11	75.59	78.62	85.07	94.56	104.05	113.54
	$3.50	47.29	56.74	66.21	75.68	78.72	85.16	94.65	104.14	113.64
	$3.75	47.38	56.83	66.30	75.78	78.81	85.26	94.75	104.24	113.73

						Beta				
DCF/EP Price	**108.71**	0.70	0.80	0.90	1.00	1.05	1.10	1.20	1.30	1.40
	3.00%	236.85	209.15	187.72	170.64	163.33	156.70	145.10	135.30	126.91
	3.50%	205.20	181.61	163.33	148.75	142.50	136.83	126.91	118.51	111.31
	4.00%	181.61	161.05	145.10	132.36	126.91	121.94	113.26	105.90	99.59
	4.50%	163.33	145.10	130.95	119.63	114.78	110.36	102.63	96.07	90.44
ERP	4.80%	154.21	137.14	123.87	113.26	108.71	104.56	97.30	91.15	85.85
	5.00%	148.75	132.36	119.63	109.43	105.06	101.08	94.10	88.18	83.09
	5.50%	136.83	121.94	110.36	101.08	97.10	93.47	87.10	81.70	77.04
	6.00%	126.91	113.26	102.63	94.10	90.44	87.10	81.25	76.27	71.97
	6.50%	118.51	105.90	96.07	88.18	84.79	81.70	76.27	71.64	67.65

						Cost of Debt				
DCF/EP Price	**108.71**	2.30%	2.40%	2.50%	2.60%	2.68%	2.80%	2.90%	3.00%	3.10%
	2.00%	133.38	132.81	132.24	131.68	131.23	130.57	130.02	129.48	128.94
	2.20%	127.83	127.31	126.80	126.28	125.88	125.28	124.78	124.28	123.80
	2.40%	122.79	122.32	121.85	121.38	121.01	120.46	120.00	119.55	119.10
	2.80%	113.97	113.57	113.18	112.78	112.47	112.00	111.62	111.24	110.86
Risk -Free	3.00%	110.10	109.73	109.36	109.00	108.71	108.28	107.92	107.57	107.22
	3.20%	106.52	106.17	105.83	105.50	105.23	104.83	104.50	104.17	103.85
	3.40%	103.20	102.88	102.57	102.25	102.00	101.63	101.33	101.02	100.72
	3.60%	100.12	99.82	99.53	99.24	99.00	98.66	98.37	98.09	97.80
	4.20%	92.06	91.82	91.58	91.34	91.15	90.86	90.62	90.39	90.16

						CV Growth				
DDM Price	78.42	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%	4.50%	5.00%
	6.00%	75.40	73.62	71.55	69.10	66.16	62.58	58.11	52.37	44.76
	6.50%	76.28	75.04	73.59	71.89	69.84	67.34	64.23	60.23	54.93
	7.00%	77.03	76.26	75.35	74.28	73.00	71.43	69.48	66.97	63.64
	7.50%	77.69	77.31	76.87	76.35	75.73	74.97	74.02	72.81	71.20
CV ROE	8.07%	78.33	78.35	78.37	78.39	78.42	78.45	78.50	78.55	78.63
	8.50%	78.76	79.04	79.38	79.77	80.23	80.80	81.51	82.43	83.64
	9.00%	79.21	79.77	80.42	81.19	82.11	83.23	84.64	86.43	88.82
	9.50%	79.61	80.41	81.35	82.46	83.79	85.41	87.43	90.02	93.46
	10.00%	79.97	81.00	82.19	83.61	85.30	87.36	89.94	93.25	97.64

						CV Growth				
DCF/EP Price	108.71	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%	4.50%	5.00%
	5.50%	98.88	97.06	94.81	91.99	88.38	83.68	77.35	68.50	55.38
	6.00%	100.07	99.03	97.70	96.00	93.81	90.90	86.95	81.38	73.05
	6.50%	101.09	100.69	100.14	99.40	98.39	97.01	95.07	92.27	88.01
	7.00%	101.96	102.12	102.24	102.31	102.33	102.25	102.03	101.61	100.83
CV ROIC	8.00%	103.37	104.43	105.64	107.04	108.71	110.74	113.33	116.76	121.64
	9.00%	104.47	106.23	108.29	110.73	113.69	117.37	122.14	128.59	137.87
	9.50%	104.93	106.99	109.40	112.28	115.78	120.16	125.84	133.55	144.69
	10.00%	105.35	107.68	110.41	113.67	117.66	122.67	129.18	138.03	150.83
	10.50%	105.72	108.29	111.32	114.93	119.37	124.94	132.19	142.07	156.39