Investment Analysis of Listed Companies in The Oil & Gas Industry

Yifan Wang*

Bachelor of Commerce, University of British Columbia, Vancouver, Canada

*Corresponding author: wyf2021@student.ubc.ca

Abstract. The oil and gas industry is highly dependent on global financial markets. Due to the worldwide repercussions of the COVID-19 pandemic, the Russia-Ukraine War, and the upcoming third energy transition, the oil and gas industry may provide considerable financial gains from share price increases and attractive dividend income. In this article, ExxonMobil, Chevron, and ConocoPhillips, three significant oil and gas firms in the United States, are assessed using ratio analysis. This project explores which of these three companies are deserving of investors' attention and whether they can respond to future uncertainties by analyzing the companies' financial data and policies. ConocoPhillips is chosen as the best company to invest in for the short-term due to its larger profit margin and stronger growth potential. Long-term investments in Exxon Mobil are suggested due to the company's relatively low risk and sustainable strategy.

Keywords: Oil and Gas Industry, Energy Transition, Covid-19 Pandemic, Russia-Ukraine War, Financial Ratios, Investment Analysis.

1. Introduction

1.1 Background

The emphasis on environmental problems and sustainable development in recent years has changed the global energy landscape. The traditional oil and gas industries are being pushed to face the ongoing world transition energy transition. Major oil and gas companies need to adapt to dynamic changes quickly to stay competitive and keep up with the times.

In addition, overall energy consumption was dramatically reduced as COVID-19 destabilised the global economy over the past few years. The travel and mobility constraints during the epidemic caused a sharp reduction in the demand for oil and gas. Worldwide, the pandemic caused an over-supplied market, therefore, the demand for fossil fuels decreased, and the global energy model began to change. In response to the global crisis and changes in the global energy model, large oil and gas companies have cut their capital and operational spending.

In February 2021, the petreolem price started rebounding to its pre-pandemic level. The faster increase in oil demand than supply led to an increase in energy costs. Most recently, with the national average price of one gallon of gasoline reaching its highest level since 2008, the stock market is on edge due to the negative supply shock caused by the ongoing Russia-Ukraine War. The disrupted situation is raising the price of oil, natural gas, and gasoline to extraordinary levels. Investors are paying close attention to the oil and gas industry, particularly the crude oil price and energy stocks.

1.2 Related Research

Luo et al. introduced nine large petroleum and natural gas companies' low-carbon emission transition initiatives and described their transition pathways, objectives, opportunities, and challenges. The comparison and analysis showed that natural gas development is the initial phase of the low-carbon transition. This essay also suggests oil and gas companies to invest in the geothermal energy sources development and contribute to the world energy transition [1]. The stochastic frontier analysis method is used in the research conducted by Jourboui et al. to analyze the potency of 53 U.S. based oil and gas companies using data from the year of 1998 to 2018. The impact of energy policy on these companies' levels of efficiency is also examined. As a result, the average technical efficiency of these companies is 0.75, which indicates the efficiency of oil and gas production is relevant to the national

pricing, production, consumption, and reserves in the oil and gas industry [2]. From 2011 to 2015, Atris and Goto conducted research about the plans of 34 US oil and gas companies to be technically and environmentally efficient. They used the Data Envelopment Analysis (DEA) approach to compare the performance of integrated and independent companies in environmental efficiency. They concluded that the integrated companies have higher standard regards to the environmental protection and are willing to put more efforts in strategic branding [3]. Hunt et al. introduced some possible pathways for traditional petroleum companies to follow the trend of sustainability and success in the future. Natural hydrogen, offshore wind power, and biorefineries are some examples of good alternatives for oil and gas companies. The authors pointed out that the oil and gas industry should utilize their financial asset, intellectual strength, and geopolitical influence to facilitate the development of sustainability [4].

Larson et al. utilized two parallel analytical approaches ("top-down" and "bottom-up") in their study to characterize the U.S. market patterns and the evolution of the energy industry. The authors concluded that the substantial net profits made by installed ESCO (Energy Service Company) projects show that U.S. energy companies can keep giving their customers energy solutions that are both cost-effective and reliable [5]. Al-Obaidan and Scully's study examined the technological and organizational differences in allocative efficiency between private-held and state-owned U.S. oil and gas companies. After taking operational and global integration into account, they found that, on average, only 61% to 65% of national oil and gas corporations are as technically efficient as private ones [6]. The Environmental Kuznets Curve (EKC) theory was tested by Xia et al. in their recent study. The investigation used the punitive technique and included data from 67 industrialized and developing nations from 1971 to 2018. The result shows that globalization and carbon emissions are significantly and positively correlated. Higher GDP leads to higher carbon emissions. Increased coal energy also results in increased carbon emissions [7].

War has significantly impacted the oil and gas industry. Zstrada et al. evaluated the impact of the conflict between the US and Iran on the behaviour of the world's oil prices using a "War Oil Crisis Simulator" (WOC-Simulator). The WOC-Simulator showed how the persistant conflict between two areas that produce essential oils will impact oil prices globally and interrupt the flow of supply [8]. According to Jones and Kaul, the effect of oil shocks on real cash flows during the postwar era may fully account for the response of stock prices in the United States and Canada [9]. The Russia-Ukraine war, according to Chowdhury et al., might undermine the development of renewable energy as the value of Russia's exports of hydrocarbons and crude oil was expected to reach $5 million billion in 2020 [10].

1.3 Objective

The oil and gas sector is becoming more and more dependent on the world's financial markets. However, the market is currently facing many economic issues, such as and global supply-chain disruption and rising inflation. Investors need to consider how well oil and gas companies are doing financially to predict how they will handle the worldwide effects of the COVID-19 pandemic, the Russia-Ukraine War, and the upcoming third energy transition.

The United States is surpassing many other countries to take the lead in the oil and gas industry. With a 20.3% share, the United States consumes the most oil globally, followed by China and India which consumes 12.8% and 4.6%, respectively [11]. The U.S. is also a major net producer of crude oil and gas. The United States produced 18.61 million barrels of oil per day in 2020, which accounts for nearly 20% of the world's total output [11]. The production of oil and gas in the United States is closely tied with market pricing. Therefore, the current extraordinarily high market price signals an increased tendency in production. Over time, the United States is likely to become the main region to benefit from investments in petroleum.

Exxon Mobil, Chevron, and ConocoPhillips are three leading companies in the United States oil and gas industry. The purpose of this research project is to explore which of these three are deserving

of investors' attention and to determine whether they can respond to future uncertainties by analyzing the companies' financial data and policies.

2. Method

Vertical analysis and ratio analysis will be used to determine the financial performance of three major oil and gas companies (Exxon Mobil, Chevron, and ConocoPhillips) in the U.S. over the financial years 2021 and 2022. Equations are shown in Table 1.

Ratio analysis is an important tool to compare one firm to another within the same industry and see how one company can evolve. The liquidity ratios are computed to assess the capacity to meet short-term obligations. Profitability ratios are a key reference factor for investors and shareholders. It demonstrates how well a business produces profits and value for its stakeholders. Solvency ratios are used to evaluate how likely it is for a company to continue meeting its debt obligations.

The weighted average cost of capital (WACC) represents the cost of capital for a company, where each category of capital is weighted proportionally. A healthy company may attract investors at a cheaper cost if its WACC is low. A comparatively high WACC is associated with a higher risk. In turn, investors would demand a higher return.

Table 1. The Calculations of Selected Financial Ratios

Financial Ratio	Calculation
Liquidity Ratio	Current Ratio = Current Asset / Current Liabilities
	Asset Turnover = Revenue / Average Asset
Profitability Ratio	Profit Margin = Net Income / Net Sales
	Return on Assets = Net Income / Average Total Assets
	Return on Equity = Net Income / Average Common Stockholders' Equity
	Earnings Yield = Earnings per Share / Stock Price
	PE Ratio = Stock Market Price / Earnings per Share
	Payout Ratio = Cash Dividends / Net Income
Solvency Ratio	Interest Coverage Ratio = EBIT / Interest Expense
	Debt-to-equity Ratio = Total Debt / Total Asset
WACC	$WACC = (E/V) \cdot r_E + (D/V) \cdot (1 - T) \cdot r_D$

2.1 Industry and Company

One of the most profitable industries in the world is the oil and gas one. All facets of the world economy, including transportation, heating, energy, industrial production, and manufacturing, are significantly influenced by oil. Upstream, midstream, and downstream are three primary divisions in the oil and gas business. Exploration and production of oil and gas are examples of upstream activity. The midstream section's main subject is transmission. Refineries and gas stations are downstream businesses [12].

This paper targets three integrated companies in the oil and gas industry: Exxon Mobil Corp., Chevron, and ConocoPhillips. These three leading companies in the U.S. have a variety of diversified revenue streams. The high capital costs involved in oil exploration and refining also build high barriers for new competitors to enter the market.

Exxon and Mobil merged in 1999 to create one of the largest U.S. based oil companies, Exxon Mobil Corp. Exxon Mobil is now the biggest non-government-owned energy firm. It consists of three segments: upstream, downstream, and chemical. The company sells fuels, chemicals, and lubricants under four names across the world: Esso, Exxon, Mobil, and ExxonMobil. They have investments and operations in coal, nuclear fuels, chemicals, petroleum, natural gas, and mineral ores [13,14].

The second company, Chevron, was formed in 1879 under the name Pacific Coast Oil Co. The company operates in both upstream and downstream divisions, which means that in addition to exploration, they also develop, produce, and transport natural gas and crude oil; run a gas-to-liquids

facility. Chevron also has branches for cash management, debt financing, insurance, technology investment, and real estate. The size and financial security of Chevron are its main competitive advantages in the highly cyclical industry. The company was able to effectively manage the 2020 coronavirus pandemic because of its operational competence [15,16].

ConocoPhillips was founded in 2002 as a merger of Conoco and Phillips Petroleum. The corporation divided its upstream and downstream divisions into two separate entities. ConocoPhillips is engaged in hydrocarbon production and exploration. ConocoPhillips has an advantage over its competitors because it has a wide range of economical energy resources. These resources include LNG facilities, oil sands facilities, and traditional onshore and offshore oil and gas wells [17].

3. Results and Discussion

3.1 Results

To compare the financial capability of three companies, the research examines the data and ratios listed in the chart below for further analysis. Market Cap, Stock Price, and Equity Beta are collected on August 22, 2022. Financial ratios are calculated based on the financial report of 2021 and the first quarter report of 2022. Financial data and calculated ratios are shown in Table 2.

Table 2. Financial Data of Leading Oil & Gas Companies in the U.S.

		Exxon Mobil Corp.	Chevron	ConocoPhillips
Market Cap		392,092	309,831	135,993
Stock Price		94.08	157.69	105.14
Equity Beta		1.05	1.12	1.4
Liquidity Ratios	Current Ratio	1.16	1.31	1.54
	Asset Turnover	1.04	0.88	0.76
Profitability Ratios	Profit Margin	10.97%	14.09%	23.78%
	Return on Assets	11.1%	11.8%	17.4%
	Return on Equity	23.1%	20.2%	33.7%
	Earnings Yield	9.9%	9.3%	12.2%
	PE Ratio	10.05	10.66	8.48
	Payout Ratio	38.4%	36.7%	24.8%
Solvency Ratio	Interest Coverage Ratio	33.39	31.3	15.38
	Debt-to-Equity Ratio	0.26	0.17	0.34
Market Risk Premium		4.7%	4.7%	4.7%
Buyback Yield / Dilution		0.5%	-1.57%	4.24%
Expected Cost of Equity		8.75%	8.7%	9.3%
Expected Cost of Debt		4.25%	4.25%	4.6%
WACC		8.1%	8.2%	8.5%
Business Risk		0.64	0.7	1.15

3.2 Liquidity

As shown in the table, Exxon Mobil, Chevron, and ConocoPhillips all have a greater than 1 current ratio, which indicates that they all have enough assets to cover their liabilities. While the average current ratio of the Oil & Gas industry in 2021 was 1.27, Chevron and ConocoPhillips are both above average, and ExxonMobil is slightly underperforming. The second ratio is asset turnover, which illustrates how efficiently the company uses its assets to generate its revenue. A greater than one asset turnover ratio is usually an indicator of the efficient use of the company's assets. Chevron and ConocoPhillips have ratios lower than one, which means they may not use their assets efficiently to generate revenue due to insufficient collection methods, poor inventory management, and excessive

production capacity. Among these three businesses, Exxon Mobil is suggested as having the highest level of financial liquidity.

3.3 Profitability

The oil and gas industry is volatile because its profit is tightly affected by the oil price. The profit margin of the entire industry in the year 2021 was 4.7%. The profit margin of Exxon Mobil is 10.97%, Chevron is 14.09%, and ConocoPhillips has the highest profit margin, which is 23.78%. All three companies have experienced a soaring increase over 2021, especially ConocoPhillips, which has increased 30% compared to the profit margin of last year. This growth implies that the management improved production-process efficiency in manufacturing and distribution. ExxonMobil increased their profits by more than double over the past year, achieving a net profit of 5.5 billion [13]. The strongest profit quarter in ten years for Chevron was also highlighted. Compared to six-month 2021 profits of $3.1 billion, ConocoPhillips' six-month 2022 earnings were $10.9 billion, or $8.36 per share [18]. Return on assets and return on equity are two important measurements to determine how efficient a company is at generating profits. Return on assets is the main measure used to assess the financial success of an organization. A better way to assess a company's financial performance is to look at its ROA. High profits are being made when high ROE comes along with higher ROA and manageable debt. With a lower ROA and significant debt held by the corporation, a higher ROE might be deceiving. According to the calculation, the ROA and ROE of ConocoPhillips are both the highest among the three companies. ConocoPhillips' current financial performance indicates its good profitability. The next calculation, earnings yield, is used to measure whether a stock is overvalued or undervalued. ConocoPhillips has the highest earnings yield, which means it is most likely to be undervalued among these three stocks. The payout ratio shows how much of a company's profits are given back to shareholders as dividends. A ratio between 0% and 35% is usually considered a good payout ratio. A high payout ratio can be interpreted as a good signal for investment. All three of the companies we evaluated are within a good range of ratios. Exxon Mobil has the highest ratio of 38.4%, while ConocoPhillips has the lowest ratio of 24.8%. According to the announcement made by ConocoPhillips, they will have successfully acquired Shell Enterprises LLC's lucrative Delaware basin asset for $9.5 billion in cash by the end of 2021[17]. Reinvesting a big portion of its earnings into expanding operations is a good sign for sustainable development. To sum up, ConocoPhillips has shown strong profitability as a developing business.

3.4 Solvency

The interest coverage ratio shows whether a company can pay debts. ConocoPhillips has a relatively low interest coverage ratio, which means the current ability to pay accumulative debt of ConocoPhillips is not as strong as the other two companies. The debt-to-equity ratio is used to assess a company's capital structure. It helps companies to know if a company is under financial distress or unable to pay its debt. According to the data in the table, it is evident that ConocoPhillips has the highest debt-to-equity. The table shows that ConocoPhillips was a relatively aggressive company, as its debt-to-equity was higher than the other two companies. ConocoPhillips is a leveraged firm, which takes advantage of macroeconomic opportunities to attract borrowed capital.

3.5 Others

All three of these companies reported a surge in income in 2022 compared to 2021. The increase in revenue is expected as a result of nearly doubling oil prices. However, the huge increase could lead to political pressure. The oil and gas industries in the U.S. would face a hit as President Joe Biden signed the Inflation Reduction Act (IRA) in August 2022. Exxon, Chevron, and ConocoPhillips all noted an increase in production. At the same time, Exxon Mobil and Chevron are spending billions of dollars to buy their shares. Share buybacks are a method used by public firms to distribute earnings to investors. When a company buys back its own stock, the number of existing shares goes down and the value of the remaining shares goes up. This can benefit for shareholders.

The expected cost of the asset(rA) and the expected cost of equity (rE) show that there is no big difference between ExxonMobil and Chevron. ConocoPhillips has both the highest expected cost of the asset and the highest expected cost of equity. In general, ConocoPhillips is more efficient at managing its balance sheet to generate profits and can efficiently use its shareholders' equity to generate revenue.

The weighted average cost of capital (WACC) is an important financial metric. It shows a firm's cost of capital, with each capital sector weighted proportionally. From the table above, Exxon Mobil is the lowest. This finding suggests that Exxon Mobil acquires capital cheaply. A lower WACC often implies a healthy company that can attract investors at a lower cost. According to the chart, ConocoPhillips has a WACC that is higher than average. This is seen as a higher risk, so investors need a higher return to make up for it.

Lastly, equity beta is used to calculate the business risk (βA) of each company. ConocoPhillips has the highest business risk (1.15), followed by Chevron (0.7) and Exxon Mobil (0.64). The business risk of a company is related to how globally integrated the company is. Globally integrated companies have lower business risks, whereas locally integrated companies have greater business risks. The worldwide pandemic has had a significant impact on the growth of the economy since 2019. Changes in monetary policy and restrictions on foreign travel have had an impact on economic activity and the stock market, and there has been a major rise in worldwide inflation.

4. Conclusion

This paper employs ratio analysis to assess three major US oil and gas companies: ExxonMobil, Chevron, and ConocoPhillips. To summarize, the oil and gas industry was one of the best performers in 2021 and early 2022. All three companies' market performance is highly dependent on the oil price. As long as the oil price remains rising, the stock can remain elevated. While all three companies are expected to gain, ConocoPhillips is selected to be the best stock to invest in the short term because of its higher profit margin and better growth prospect. Chevron is a recommended holding stock due to its moderate implementation. In the long run, ExxonMobil is recommended as a worthwhile investment with low risk. It has a stellar history of paying dividends and has tripled the size of its share buyback. ExxonMobil is also considering alternative energy sources, such as carbon capture and blue hydrogen, as part of its long-term strategy. In the future, upstream energy industries are expected to contribute more actual internal growth, which would also increase oil and gas production. When more restrictions put in place due to the pandemic are lifted, the need for gasoline, diesel, and jet fuel will also go up.

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