

Contents cont'd

Business & Economics

International Learning Experiences in Business Courses A Presentation of Four Papers Jayne Rivas, Editor	158
Global Circle: Change to a Hybrid Society Cade Brubaker	159
Global Circles Reflection: Future of Social Relationships Laura Billing	164
Global Circles Research: Hybrid Lifestyle Stella Shellabarger	172
Investment Report EcoPetrol Michael Goldner, Jordan Henderson, Yesenia House, Jakob Good, Laura Randazzo, & Andres Camilo Carvajal	179

Additional Content

JSRIUE Cover Contest Winner and Runners-up	192
--	-----

Investment Report: EcoPetrol :

A Global Classroom Project

Michael Goldner, Jordan Henderson, Yesenia House, Jakob Good, Laura Randazzo, & Andres Camilo Carvajal

Abstract

This report investigates the investment perspective of the Colombian oil and gas company Ecopetrol in post pandemic environment and after an overhaul of the Board of Directors. Research into the country competitiveness of Colombia was complete. An analysis of the Oil and Gas Industry was conducted evaluating Porter's five forces. EcoPetrol's strategic analysis and value chain were reviewed. Our risk analysis and a valuation shows a positive use of available funds and a well governed company. We conclude Ecopetrol is currently a good investment.

Keywords

Porter's Diamond, strategy, rivalry, suppliers, management, governance, international expansion, Columbian, risk analysis, valuation, value chain, buyers, industry analysis, strategic analysis, competitiveness, Ecopetrol, investment, Global Classroom, report,

Introduction

Business Description

Company Name	Ecopetrol	Ecopetrol was founded in 1951 in Colombia. It is a mixed economy company, "which participates in all links of the hydrocarbon chain: exploration, production, transportation, refining and commercialization." (Ecopetrol, 2022) It is also
Current Price	\$3.355 COP	
Target Price	\$4.134 COP	
Date	4/24/2022	
Sector/ Industry	Oil and Gas	
Stock Exchange	NYSE	
Recommendation	BUY	

located in center, south, east and north of Colombia. Ecopetrol aims to have a clean, safe, and sustainable operation that earns a profit. The price of oil and the race for lower CO2 emissions drive the business.

It became a stock-holding corporation in 2003. Over the last five years its stock has gone up 82%. Over the last year the stock went up and that was during COVID, yet it still managed to keep its numbers up. The company plans to focus on unconventional, passed over drilling locations to find more opportunities. The cost to expand operations and the market price for its products continue to challenge the company. Ecopetrol faces these challenges with conservation of liquid assets and securing private funding.

Country Competitiveness

The national competitiveness in Columbia is low. Most competitors are small and do not have the capital or infrastructure to compete with Ecopetrol. According to the U.S. Energy Information Administration (2022) Columbia has only two large refineries and both are owned by Ecopetrol. The overall rivalry is also kept low because of the high barriers to entry in the country. Aside from the huge amount of capital needed to enter the market, Columbia also has a high level of corruption and legislation, preventing new entrants. According to the International Trade Administration (2021) the bureaucratic processes and burdensome and unpredictable often taking years for licenses for extracting to be granted. Columbia has mixed factor endowments. Transportation infrastructure is very poor but should improve with the World Bank's integrated mass transit project. The company is also rapidly improving its technological infrastructure (2021, ITA). Business in the country is also hampered by poverty and an unskilled work force (Forbes, 2018)

Demand for oil within Columbia is stable post COVID, however there is a trend in increased diesel consumption (EIA, 2022). According to the EIA hydropower is the main source of energy within Columbia, lowering the possible demand for crude oil.

Demand for oil and gas is higher in the US with consumption outpacing the countries overall production. According to Reuters (2022) oil demand is the highest it has been post pandemic. There may be an eventual move to green energy, but demand should remain high for the foreseeable future.

The competitive analysis shows that Ecopetrol has opportunities if it can create a higher quality product. Columbia has a growing demand for diesel due to legislation to limit sulfur content. If refining capacity for the product can be upgraded, Ecopetrol could make up for need to import diesel.

Company Strategic Analysis

Ecopetrol is an oil and gas company that provides services to communities across Colombia. Their headquarters is in Bogota Colombia. Ecopetrol has a long history dating back all the way to 1951. Ecopetrol took over the operations of Tropical Oil Company, which had been long rooted in Colombia for decades before (Ecopetrol, 2022). Throughout the next few decades, the company acquired many other companies in the region and acquired different mines and refineries in order to expand their ownership of the market in the region. In the modern-day market, their main focus has been expanding the company to an international level versus just having a country-based operation (Ecopetrol, 2022). Ecopetrol's main operations revolve around creating different oil products and shipping them around the world for the end users. As mentioned, they are interested in expanding their operations beyond Colombia, specifically to the United States and Mexico. Ecopetrol's Strategy is to provide different types of gas, oil, etc. to the citizens of Colombia and other countries in a safe and sustainable way (Ecopetrol, 2022).

As far as recent developments within the company, they are expanding their operations and looking towards moving their operations to international. A major business driver for the company is the land that they own for their refineries. If they did not have this land, then they would not be able to carry out any of their business operations and they would lose all of their profits. Also, the amount of assets they have from acquiring all of the past company has helped them to get where they are now (Ecopetrol, 2022).

Ecopetrol has a few opportunities and threats based off their company strategy. First off, an opportunity for the company would be diesel

becoming popular in Colombia. This would allow them to expand their product line. Also, cleaner energy can be an opportunity and a threat. If they enter the clean energy market, the opportunities are endless since this is an emerging market.

At the same time, it can be a threat if they do not realize the potential for profits and neglect exploring that market. That would allow other companies to make tremendous strides in that particular market. Also, Ecopetrol is close to many water sources and should explore hydro energy as a source of fuel besides oil and gas. This is a major opportunity to expand their product line too (Ecopetrol, 2022).

Industry Analysis

Potential Entrants

These are the product range, quality, and capacity for competition within the market. The size of new entrants within the market play a huge role and can greatly intensify competition. This could cause prices to change and the profitability of existing companies within the market to change. There are benefits of Potential Entrants in which case premium services can be offered and access to more distribution channels. However, there are some disadvantages with Potential Entrants being lower barriers for entry numbers and easily duplicated internet based capabilities. An effective way to manage this risk would be to differentiate themselves from their competition so they would stand out.

Suppliers

The threat of suppliers deals with their bargaining power over firms. Suppliers can threaten price change and quality of products. The number of suppliers in the industry is limited, suppliers offer specialized products, are important input to buyers, product has few substitutes. Suppliers can directly affect the profitability of the companies dealing with higher costs.

Benefits would include better chance of increasing bargaining power and more opportunities for new suppliers. Negatives would be more competition due to the Internet and less chances of being able to differentiate yourself from competitors.

Buyers

Have a huge effect on a company's profitability and add pressure to the changing of products and the investments made towards businesses. The strongest buyer groups are homogeneous which all share the same beliefs or motives.

The benefit for buyers would be reducing the power of intermediaries apart of the distribution channels. On the other hand, this could mean the cost would decrease and information about products, services, or competition would give more power to the users.

Substitutes

This is where the main source of competition is created within the market. This can offer prices to become more reasonable with higher quality products.

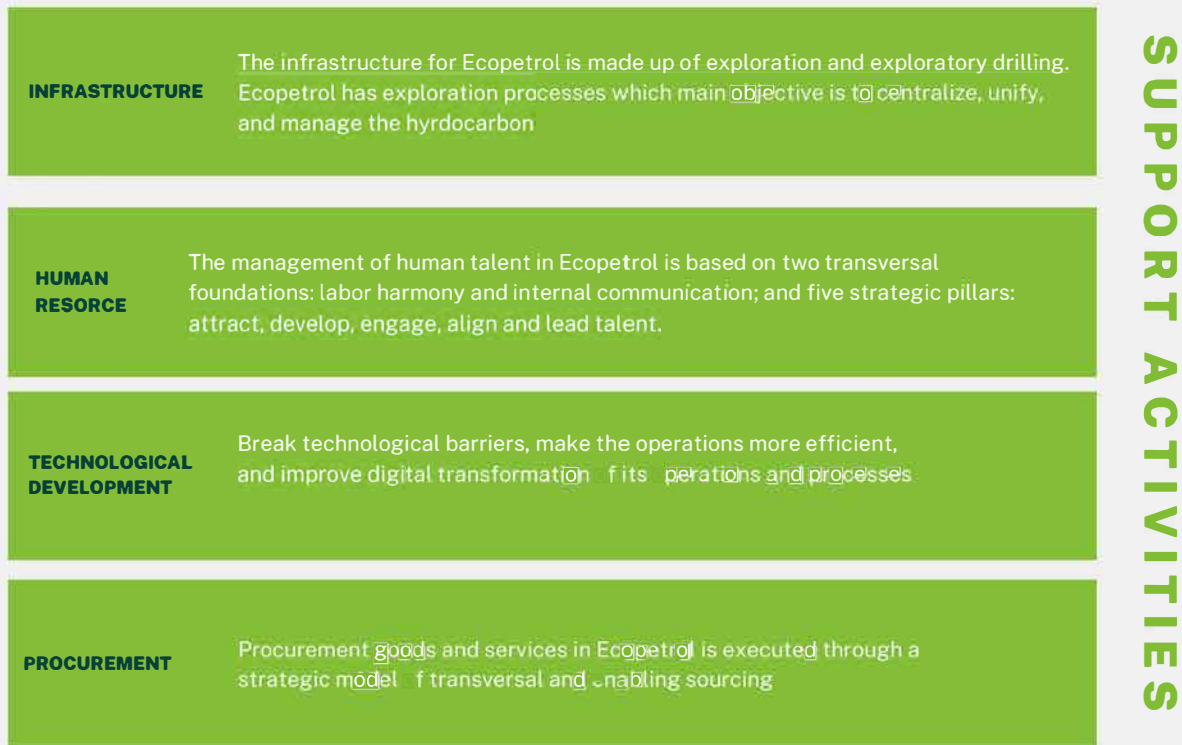
The benefit would be an increase in efficiency which can result in more sales for the business. Negative would be that storage capacity would mean more opportunities for competitors in that industry.

Rivalry Among Firms

This includes price competition, advertising battles, new introductions, improving qualities, and increase consumer warranties.

This offers the chance for a business to find more ways to differentiate themselves from their competition, like unique deals or better delivery options. Negatives would be more competitors and differentiation would be difficult due to all of the competitors in that one industry.

VALUE CHAIN



PRIMARY ACTIVITIES



Management and Governance

Management Team

The management team is very large, composed of sixteen members most of whom are male, collaboration amongst the large team could be difficult. Only three of the sixteen members are female, but the team is composed of many different nationalities. The management team is however, highly educated and has a vast range of expertise.

This group of managers has the knowledge and expertise of their product to be able to encourage innovation, which could create a competitive advantage for Ecopetrol. The management team's project management expertise could make it easier for Ecopetrol to enter into new markets.

The lack of financial and marketing knowledge towards the top of the company could be an issue. Poor financial management could cause Ecopetrol to use cash inefficiently and could lead to lower profitability or expansion of the company. No marketing expertise in Ecopetrol could lead to poor forecasting of demand. This could result in high levels of inventory, raising overall costs or a lack of inventory and missed opportunities. It is also possible that Ecopetrol could position their products poorly, missing out on potential customers and opening the door for competition

Board of Directors

The board of directors begins with the same issue as the management team, it is very large. At nine directors it could be difficult to gather the whole board for scheduled meetings. Ecopetrol tries to avoid this issue by mandating that members attend 80% of yearly meetings but the size of the board could still create issues, like a tie vote if all members are not present.

The board is composed of all males, except Cecilia María Vélez White, and just two members under the age of 60. The age and lack of diversity of the board members could be a concern.

All but one of the board members are independent from the company. Theoretically this is a good practice as independent members are more likely to hold the company accountable. However, others with the same strategy have failed before, like Kmart and Enron. The lack of internal members could mean that the board is less connected with Ecopetrol and will be less informed to make the right decisions.

The board does however, more than make up for the lack of financial expertise that the management team has. The board is also very well versed in audit and risk management, which could be great to balance out such an innovative management team.

The board is ultimately a strength because of their ability to act as a team. The board had a change in seven members the last period, which would have been an issue if they had not worked together to make informed decisions and shown their dedication to Ecopetrol, resulting in a near 100% meeting attendance. The board of directors' strong and positive relationship dynamics and exceedingly rated communication ability make them an asset to Ecopetrol.

Valuation

For the valuation of Ecopetrol we used the data from 2014 to 2020, from the consolidated statement of profit or loss and the consolidated balance sheet.

Then we calculate the net worth Ddevelopment/progress/pransition, the economic balance and the free cash flow and we estimate the values for the next 5 years, considering some assumptions, such as the same inflation for the last 3 years, the increase in sales.

First we calculate the economic balance, to find the total investment of Ecopetrol. Then we calculate the free cash flow to find the net cash flow, which increases over the years estimated.

Even though Ecopetrol has a higher P/E relation than the average of its equivalents and the net cash flow is increasing, the estimated price is decreasing, and the WACC is decreasing too, which shows a low risk.

	WACC	2022	2023	2024	2025	2026	T+1
FCF		\$ 43.297	\$ 10.818	\$ 13.000	\$ 13.665	\$ 12.593	\$ 13.247
WACC		10,47%	-16,27%	5,66%	7,01%	7,50%	10,93%
FCF (present value)	275.665	281.612	224.984	224.722	226.811	231.235	
Non operative assets	\$ 14.550	\$ 54.859	\$ 86.841	\$ 126.194	\$ 159.030	\$ 166.968	
Enterprise Value	\$ 290.215	\$ 336.472	\$ 311.825	\$ 350.916	\$ 385.841	\$ 398.203	
Debt	120.249	186.380	172.100	214.314	250.990	265.836	
Equity Value	169.966	200.111	139.725	136.601	134.851	132.367	
# Shares in circulation	41	41	41	41	41	41	
Price	4.134	4.867	3.398	3.322	3.280	3.219	

Comparing the current price with the estimated price we can see that the estimated price per share (\$4.134 COP) is higher than the current (\$3.355 COP), which means the company is undervalued. Therefore, the shareholders should buy shares taking advantage of the undervaluation right now.

Risk Analysis

Ecopetrol presents few overall risks within their company's strategy. Their overall plan to increase the amount of operations in Colombia and neighboring countries sets them up for a great opportunity for financial growth. Within their management and governance, the company has a lack of financial and marketing knowledge. That alone creates a huge risk for a company that is looking for growth because there is not a resource for them to know how to manage their debts and what to buy or sell.

According to the competitive analysis, Colombia's biggest threat is itself. Corruption, legislation, poor infrastructure, and pipeline attacks from FARC and ELN creating supply disruptions, are all real threats. According to EIA (2022) ELN targeted the pipelines 30 times in 2020. These items pose a huge threat to the operations of Ecopetrol and could prohibit future growth. If these issues are not fixed within their projected time for growth it could stop potential profits from happening. The biggest issue with the company's valuation is the amount of debt that they have. They have a large amount of debt for a growing company, but this debt could be used in order to expand their operations to a larger level. This is going with the assumption that they are using the debt in the right way and not losing money in regular operations.

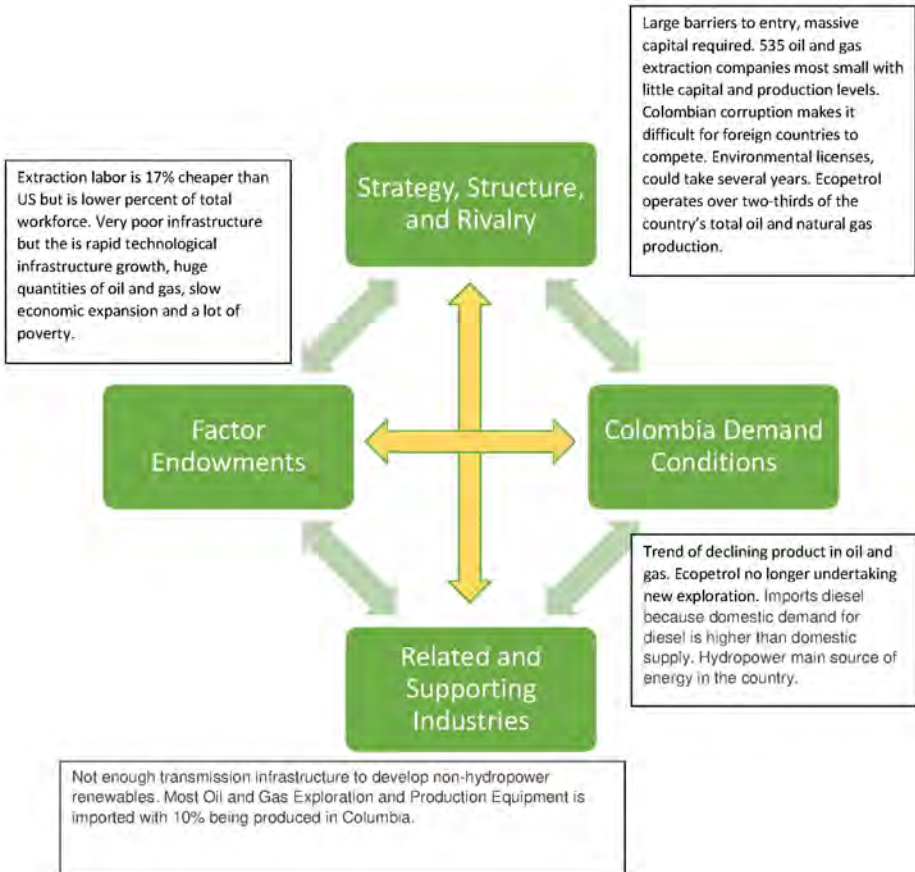
Conclusion: Buy

Our group has found that Ecopetrol is a well-constructed company and would be a good investment. Ecopetrol appears to be getting high numbers for input and output and that is a good thing to see. Every month the value of the numbers changes but they bring in more than what they expect. Since it has been there for years and if it continues to stay there for a longer term it will pay off.

If it were to move to the United States, they would have more competition and potentially lose value because the other companies have more capital. Once there is a strong foundation built then possibly down the line we can look to expand in the United States.

Their major capital in terms of land and acquisitions are based in Colombia and their plans are to grow beyond the country. That, backed with the mass potential for company growth within and outside of Colombia sets this up to be a great investment. Even though the price of Ecopetrol is going down right now, if you buy shares and hold them you are almost guaranteed a profit.

Porter's Diamond Colombia



References

- EIA. (2022, March 31). U.S. Energy Information Administration - EIA - independent statistics and analysis. International - U.S. Energy Information Administration (EIA). Retrieved April 24, 2022, from <https://www.eia.gov/international/analysis/country/COL>
- Ferrario, F., Beck, M. W., Storlazzi, C. D., Micheli, F., Shepard, C. C., & Airoidi, L. (2014). The effectiveness of coral reefs for coastal hazard risk reduction and adaptation. *Nature Communications*, 5(1). <https://doi.org/10.1038/ncomms4794>
- Forbes. (2018). Colombia. Forbes. Retrieved April 24, 2022, from <https://www.forbes.com/places/colombia/?sh=10a297be3790>
- Gaffen, D. (2022, February 28). U.S. December oil demand hits highest since before pandemic -eia. Reuters. Retrieved April 24, 2022, from <https://www.reuters.com/business/energy/us-oil-demand-reached-highest-level-since-before-pandemic-december-eia-2022-02-28/>
- ITA. (2021, November 8). Colombia - Infrastructure. International Trade Administration | Trade.gov. Retrieved April 24, 2022, from <https://www.trade.gov/country-commercial-guides/colombia-infrastructure>
- ITA. (2021, November 8). Colombia - market challenges. International Trade Administration | Trade.gov. Retrieved April 24, 2022, from <https://www.trade.gov/country-commercial-guides/colombia-market-challenges>

Portal Ecopetrol. (2022). Retrieved 20 April 2022, from <https://www.ecopetrol.com.co/wps/portal/Home/en/Ourcompany/about-us/Our%20History>

Porter, M.E. (1985, 1998). *Competitive Advantage: Creating and Sustaining Superior Performance*. The Free Press.

Porter, Michael. "The Five Competitive Forces That Shape Strategy," Special Issue on HBS Centennial.. *Harvard Business Review* 86, No. 1 (January 2008), 78-93. Reprinted with permission of Michael E. Porter.

Bloomberg Anywhere. (2022). Bloomberg.net. <https://bba.bloomberg.net/>