An Analysis on CNPC's Business Model and Financial Performance

Yuxue Cui [1,*,†], Ruixuan Dong[2,†], Lawrence Gao[3,†], Yining Sun[4,†], Xiangfeng Zeng[5,†]

[1]Business School, Bentley University, Waltham, 02452, United States

[2]School of Economics and Business Administration, Chongqing University, Chongqing, China

[3]College of Letters and Science, University of California, Santa Barbra, Santa Barbra, United States

[4]Desautels Faculty of Management, McGill University, Montreal, H3A 0G4, Canada

[5]School of Accounting, Jiangxi University of Finance and Economics, Nanchang, China

*Corresponding author: cui_yuxu@bentley.edu

[†]These authors contributed equally.

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Abstract: Understanding the experience and methods of a successful company is very important and instructive. China National Petroleum Corporation (CNPC) is a giant state-owned enterprise, which is the one of the largest petroleum companies worldwide. The research aims at combining CNPC's financial performance with its unique business model to explain the potential reasons for some of its specific outstanding financial phenomenon. It conducts industry research with PEST analysis, Porter's Five Forces and some key metrics, as well as company research with SWOT analysis, business strategies and corporate culture. Meanwhile, the paper accomplishes in-depth horizontal and vertical analysis for CNPC's financial statements in 2019, calculates the financial ratios and makes comparisons with its competitor, Sinopec. In conclusion, the research reveals that faced with the complex international situation and the impact of the epidemic, CNPC made full use of its advantages as a leading state-owned energy supplier and actively carried out business structure improvement, thus maintaining good profitability and stable financial performance.

1. Introduction

Petroleum is one of the main driving factors that keeps our world running. By understanding the performance of petroleum companies, one will be able to further recognize the direction society is moving towards. Although some argue that petroleum and other nonrenewable resources should be reduced due to their negative impact on the environment, society has yet to find a sustainable and reliable alternative that can live up to the performance of petroleum. In existence for over 20 years, China National Petroleum Corporation (CNPC), a state-owned oil and gas company based in China, had to progress, and develop to become the powerhouse it is today.

With its annual 2019 revenue at approximately 2,516 billion RMB, CNPC has become the third largest petroleum company in the world in terms of annual revenue. As both an oil company and an oilfield service company, CNPC is a highly competitive company that has been able to streamline its operations through vertical integration. Because of its dominance in the gas and oil industries all around the world, a deep analysis of CNPC will offer a discerning insight into the current and future impact petroleum and natural gas will have on our world.

A company's financial performance is often inseparable from its business model. As an energy giant company based in China, CNPC is a state-controlled enterprise with its own unique mode of operation, which brings in its rich assets as well as its considerable profits. However, there are few studies exploring the reasons for it significant financial position. In other words, the company's business model has not been closely related to its ultimate financial performance. This study combines CNPC's business model with its ultimate financial performance, which is rarely researched before, contributing to filling up this kind of blanks, and discovering how the company can grow better in the future accordingly.

The research is conducted from different perspectives and organized in the following order: industry analysis as section two, company analysis as section three, financial performance as section four, discussion questions as section five and the final conclusion. The objective of the study aims at analyzing the impact of CNPC's business model on its financial performance and summarizing the future development trend of the company.

2. Industry Analysis

2.1. PEST analysis

2.1.1. Political factors

As of June of 2021, China's government issued a new consumption tax policy which effectively reduced the nation's export quotas. Although this negatively impacts CNPC as PetroChina International conducts international trade in crude oil and other refined chemical products, this tax policy has also benefited CNPC as it increases the sale of domestically produced oil and gas. Moreover, the government also issued low-sulfur fuel oil (LSFO) quotas and CNPC is one of the few recipients to obtain this permit [1].

Furthermore, an oil price war between Russia and Saudi Arabia has begun due to failed negotiations [2]. With China being the world's largest importer when it comes to crude oil, the nation will benefit from the low import costs. These cheap oil prices will negatively impact the company's performance as it will have to compete with these international prices. Moreover, this will also pose social issues which will be discussed later.

Overall, the government's consumption tax policy along with the oil price war will generally create a negative impact on the oil and gas industry. This is because the government's policy will already reduce the production of many oil and gas companies and the low international oil prices will cause more struggle for these companies since they will have to deal with competitive prices.

2.1.2. Economical factors

The COVID-19 pandemic has left a massive impact on China's economy with its industrial production dropping over 10% and the unemployment rate increasing to 6% in the first few months of 2020. However, China's recovery was swift. This, along with the nation's determination to stay independent when it comes to relying on foreign suppliers has helped boost the nation's spending. As a result, CNPC plans to spend 239 billion RMB when compared to other foreign players in the industry who are cutting their spending due to the pandemic [3].

Moreover, the nation's stock market in recent months has declined due to the government's intervention to crackdown corruption in large companies. This contributed to the 20% decline of the MSCI China Index as of October of 2021. Due to the uncertainty and pessimism from investors, the nation's fixed asset investments have dropped almost 25%. The poor stock performance undoubtedly impacted PetroChina's stock performance leading to a value decrease of the company and may cause future funding problems if its price continues to fall.

Overall, the COVID-19 has affected the world's economy, but China's quick recovery offers itself a head start in becoming fully operational once again. However, the poor performance in the nation's stock market will hinder many companies' performance due to a decrease in value.

2.1.3. Social factors

With energy security and reaching net-zero emissions by 2060, China has begun to raise awareness of environmental pollution. As a result, it has set an aggressive goal that will require oil and gas companies such as CNPC to alter their operations. The increased imports due to the price war have increased China's dependence on foreign imports. However, China's President Xi Jinping has put efforts into increasing domestic oil and gas production, that way the nation will have better control in terms of energy security. The nation plans for its CO_2 emissions to peak in 2030 and decreases to zero by 2060. CNPC's chairman, Dai Houliang, stated that the company is moving towards wind, solar, and geothermal energy to make the use of hydrogen more practical.

Overall, this goal of zero-net emissions has caused oil and gas companies to begin branching out and exploring other alternatives.

2.1.4. Technological factors

When it comes to technology, China's high energy demand and decrease in available reserves to tap into has caused PetroChina to begin an oil project in 2025 [4]. With hopes of tapping into inaccessible shale formations and recovering high-quality oil, the company is planning on spending billions to develop this technology. Given China's domestic production of crude oil plateauing, this project's success will not only assist CNPC in bolstering their production, but it will also help the nation meet its high demand by accessing even more reserves through replication of this technology in areas with reserves that have low permeability.

Overall, China is working towards a technological breakthrough that will not only improve the nation's oil production, but it will also reduce the cost of quality oil.

2.2. Porter's five forces models

2.2.1. Bargaining power of CNPC with suppliers

CNPC has signed more than 30 purchase contracts with suppliers such as Abundance and Saudi Arabian Oil Company, Schlumberger and Siemens, etc. As an energy company, CNPC's main business mission is to provide oil and natural gas. Due to the peculiarity of the raw materials, the price of these products is determined by many factors in the international market and even involves complicated political situations. For CNPC, their bargaining power in this regard is relatively weak. In other fields, such as the construction of oil fields and related industries, involving Schlumberger, Siemens, Honeywell, and other companies, CNPC, as an enterprise with large volume, strong payment ability, and high inventory turnover rate, is a significant customer for these related industries. Therefore, CNPC has strong bargaining power in the face of these enterprises.

2.2.2. Bargaining power of CNPC with consumers

Due to the peculiarity of socialism with Chinese characteristics, CNPC is a central enterprise - the abbreviation of "central management enterprise" - which means that the Central People's Government (State Council) or the state-owned assets supervision and administration institution is entrusted to exercise the responsibilities of investor, and the leading group is directly managed by the central government or entrusted to the Organization Department of the Central Committee, SASAC of the State Council or other central ministries and commissions (associations) managed solely state-owned or state-controlled enterprises.

State-owned essentially means that the enterprise is publicly owned by the people of the People's Republic of China. For the chemical products sold by CNPC, these products have the nature of futures financial products, thus the bargaining power of consumers is relatively weak. In other words, CNPC has strong bargaining power with consumers.

2.2.3. The threat of new entrants in the oil industry

Under the current situation in China, the upstream enterprises in the petrochemical industry are only state-owned enterprises consisting of SINOPEC, CNPC, and CNOOC, which are not open to other operators. At the same time, there are a lot of small private gas stations and black oil stations downstream of the petrochemical industry. Nevertheless, the volume of these private gas stations is dinky compared with the overall volume of the oil market. Therefore, the threat of new entrants is almost negligible.

2.2.4. The threat of replacement of oil industry

Under the background of Carbon Neutralization, the most intuitive is currently in the automotive field. Furthermore, the expansion of new energy vehicles will influence the current market position of CNPC's gas station business. More specifically, under the Chinese government's financial support of new, national energy vehicles, an increasing number of consumers choose to switch their consumption to new energy transportation. This is an inevitable trend and the threat of this substitute will increase over time.

2.2.5. Associate competitor

In China, CNPC, CNOOC, and SINOPEC are the main players in the oil and gas industry. From the official reports, it is believed that CNPC has a relatively stable market share and has a dominant position in some provinces, so the external competitive force is not a major threat.

2.3. Key industry metrics

The company's operation covers all key links in the petroleum petrochemical industry, from the upstream crude oil, natural gas exploration and production to the refining, chemical, pipeline delivery, and sales in the middle and lower branches, forming the complete business chain of optimization efficient, integrated operation. This has greatly improved the company's operating efficiency, reduced costs, and enhanced the company's core competitiveness and overall anti-risk capabilities. Moreover, key credit metrics for analyzing oil and gas companies include reserve life (reserved/annual oil production), reserve replacement ratio (what % of proved reserves produced during the fiscal year were replaced by the discovery of new proved reserves), and so on.

2.3.1. Reserve life

At the end of the reporting period in 2019, the company’s annual proved reserves of both crude oil and natural gas approximately equals 19.959 billion barrels of oil equivalent. Moreover, CNPC’s output of oil and natural gas amounted to 1.561 billion barrels of oil equivalent by the end of the reporting period. As a result, the company’s reserve life index is approximately 12.8 years demonstrating that CNPC is able to continue its current rate of production for another 12.8 years before its reserves are drained. This means that CNPC is an adequate, large-scale company due to its reserves and reserve life. According to the Standard and Poor’s (S&P) Credit Criteria, the company’s reserves exceed 1.5 billion barrels of oil equivalent and a reserve life index that is greater than 10 years which demonstrates that it has a strong assessment of the scale, scope, and diversity in this area.

2.3.2. Reserve replacement ratio

As previously discussed, the annual production of CNPC is approximately 1.561 billion barrels of oil equivalent. The company’s additions to proved reserves amount to 1.204 billion on average across a two-year time frame. This shows that the company’s reserve replacement ratio is approximately 77.1%, meaning that the company is discovering fewer reserves than it is producing. According to S&P’s Credit Criteria, the company’s reserve replacement ratio is under 100% which demonstrates that the company has a weak assessment of the scale, scope, and diversity in this area.

3. Company Analysis

3.1. SWOT analysis

3.1.1. Strengths

As the largest oil and gas producer and supplier in China, CNPC has an absolute brand advantage with its high level of recognition and is globally reputed being ranked among the top four companies in the fortune 500 for many years [5]. It is adequately integrated with its wide range of businesses covering exploration, production, and marketing of petroleum and gas, equipment manufacturing, as well as financial services, which ensures close liaison between all departments to improve productivity and sales. According to the latest data from the official website, CNPC now has 160.02 million tons of crude runs per year in China and 22,612 Domestic service stations, which confirms its complete marketing network. Further, CNPC was listed in New York Stock Exchange, Hong Kong Stock Exchange, and Shanghai Stock Exchange, which brought a favorable financing condition to generate investment funds from international financial markets [5]. Moreover, CNPC's own experienced technical team consisting of members of the Chinese Academy of Sciences and members of the Chinese Academy of Engineering guarantees the development and innovation of exploitation technology [6].

3.1.2. Weaknesses

The domestic oil resource base is under great pressure. Since 1993, China has become a net importer of oil, and its dependence on imported crude oil is gradually increasing. According to the country's second oil and gas resources assessment results, in the proven reserves, the remaining recoverable reserves of oil are only 2.4 billion tons [6]. Further, the production cost of crude oil in Africa and the Middle East is $3.73 / BBL, Canada $7.17 / BBL, Europe $8.29 / BBL, and CNPC $11.3 / BBL [5]. The higher production cost of crude oil than that of foreign oil companies makes it difficult to achieve sustainable profits, resulting in a lack of international competitiveness. Moreover, the company's overall quality of personnel is still not ideal at present, and the management mechanism is defective, which is not conducive to the talents of excellent talents and makes it difficult to form an efficient operation team.[6] In the process of an international operation, CNPC is not experienced enough to understand and grasp the international market.

3.1.3. Opportunities

CNPC is a large state-owned enterprise directly managed by the central government and protected by national policies and laws [6]. The Chinese government has been actively carrying out all kinds of diplomatic activities, and the good political environment provides a stable international environment for the international operation of the company [7]. Meanwhile, as China's economy continues to grow, domestic oil and gas production is unable to meet the growing demand of the market and the gap is still widening, which provides a broad space for the development of CNPC [7]. Further, China advocates the active development of new energy currently, while CNPC has a wide new energy business and management department in charge of the development of new energy, which can help to take the lead in the energy structure transformation [6]. Moreover, many existing production problems have been solved with the development of technology. For example, the development of seismic technology makes deep-sea oil exploitation and oil exploration in complex terrains and landforms a reality, which provides a solid foundation for maintaining and expanding the market supply [5].

3.1.4. Threats

The competition for control of oil and gas resources in the international market is becoming increasingly fierce. Western giants almost monopolize four-fifths of the world's high-quality oil resources so it is hard to enter their sphere of influence and the competition with neighboring oil-consuming countries is also inevitable [5]. The space for CNPC to expand in the international market is continuously squeezed. Further, as a limited indispensable resource, petroleum has political attributes in addition to its basic economic attributes [6]. The global oil supply chain and price formation mechanism are not only influenced by the law of the market economy but also restricted by international political factors. Changes in international oil markets can lead to spikes in global oil prices or temporary disruptions in supply chains. Moreover, sustainable development has become the principle followed by global economic development, which raises the requirements of the petrochemical industry forcing it to reduce the emission of pollutants in the production process to achieve cleaner production [6]. With this pursuit of environmental friendliness, the cost of products has increased and thus shrunk the profit margins.

3.2. Business strategy

Business strategy is always the core of a company. Since its establishment, CNPC has always adhered to an effective strategy to lead the scientific development of the company, kept pace with the times, and made great achievements. In 2005, CNPC put forward three overall strategies of “resources, market, and internationalization” [8]. In January 2016, facing new opportunities and challenges of socio-economic development during the 13th Five-Year Plan period, on the basis of continuing to adhere to and improve the three strategies, CNPC incorporated "innovation" into the overall strategy and made it the primary driver of company further growth [9].

3.2.1. Resource strategy

From the perspective of resource supply, people's demand for resources continuously grows with the development of the economy and CNPC, therefore, pursues the maximization of energy sources. To increase oil reserves, the company adheres to the development of domestic oil and gas resources, improving the recovery rate of old oil fields through technological innovation. Meanwhile, it implements an international strategy, acquiring overseas resources through multiple methods including independent exploration, acquisitions, and asset trading. On the other hand, as people's awareness of environmental protection strengthens, the use of cleaner energy is an inevitable trend. Adhering to sustainable development, CNPC is committed to developing the exploitation and use of unconventional resources such as coal bed methane and shale gas to gradually optimize the energy structure. It makes breakthroughs in the development of new energy and alternatives, achieves diversification of energy products, and transforms from an "oil and gas" supplier to an "integrated energy" supplier [9].

3.2.2. Marketing strategy

While consolidating its dominant position in the domestic market, CNPC will use the advantages of integration and economies of scale to expand its market share worldwide. According to the marketing strategy from the official website, the company shifts to targeting marketing competition, focusing on high-margin markets, developing the “Internet+” model, and investigating overseas markets.

Based on 4Ps analysis, CNPC provides a very comprehensive range of petroleum and petrochemical products integrating backward and forwards and constantly enriches clean energy products. As a state-owned energy supplier that meets people’s basic living needs, CNPC’s pricing policy considers the public’s affordability in addition to its cost and profit. From the perspective of place strategy, CNPC conducts extraction and refining within China itself and forms intensive distribution channels building stations all over the country. For the promotion mix, CNPC discloses its basic information and company dynamics through its official website to stakeholders, while promotional activities are mainly carried out through online media.

3.2.3. International strategy

In the face of fierce domestic competition and the trend of economic globalization, CNPC adheres to the internationalization strategy of "going out" [9]. On the one hand, it increases investment in international cooperation, strengthens the exploitation of overseas resources, promotes diversification of resource channels, and expands the scale of imports. On the other hand, the company learns international operation concepts and methods to improve its corporate system, achieve integration with worldwide standards, and eventually form an internationally competitive multinational company.

3.2.4. Innovation strategy:

CNPC puts innovation at the core of its overall development and makes it the first driving force for corporate development. While developing core technologies through independent innovation, the company gives full play to the leading role of technological innovation, and promotes comprehensive innovation covering corporate culture, management system, business models and automation [9].

CNPC is dedicated to creating an overall environment of innovation for all employees, cultivating the driving force for sustainable development, expanding the space for creativity, and obtaining further growth advantages.

3.3. Corporate culture & social responsibility

3.3.1. Corporate culture

Corporate culture is the shared beliefs and customs formed and inherited by corporate members in adapting to internal and external environments. It has the functions of guidance, encouragement, integration and cohesion. CNPC's corporate culture keeps pace with the times to innovate and develop in combination with the dominant position of CNPC, leading the direction of development, and enhancing the soft power and core competitiveness of the company. The core concept system of CNPC's corporate culture includes three parts: corporate mission, values and goal, which together lead the development direction of the company [10]. With "Caring for Energy, Caring for You" as its mission, CNPC is committed to contributing green energy and creating a better life. At present, cnpc takes "dynamic, loyal, honest, committed" as its core value, regulating employee behavior and building corporate image. Further, CNPC is constantly approaching the corporate goal of "To be a world-class integrated international energy company" by strengthening technological innovation and international cooperation.

The nature of China's petroleum industry determines the significance of its corporate social responsibility in economic, social, and environmental aspects. As a super-large state-owned enterprise that has an important impact on the development of the national economy, CNPC's corporate social responsibility is not only related to the image of state-owned enterprises but also an example to be imitated by small and medium-sized enterprises. In addition, with socio-economic development, low carbon has also become a new and important part of corporate social responsibility. As a large-scale comprehensive backbone energy company in China, CNPC earnestly implements relevant laws and regulations, carries out innovations in concepts, management, and technology, strives to build a green, international enterprise, and seeks to promote the sustainable development of the entire society.

3.3.2. Social responsibility

The company's social responsibility practice performance is mainly divided into four aspects. In order to assume energy responsibility, CNPC has continuously increased its efforts in resource exploration, guaranteed oil and gas supply, optimized the energy structure, and promoted the use of clean energy as well [11]. From the perspective of economic responsibility, CNPC provides high-quality products and services to meet customer needs, operating strictly in accordance with the law, competing fairly, and maintaining market order [11]. For environmental responsibility, CNPC actively participates in international cooperation related to climate change and is committed to improving energy efficiency, reducing carbon emissions in production, and restoring the ecology [11]. To shoulder social responsibility, CNPC insists on safeguarding the rights of employees, provides more local employment opportunities through project construction, actively supports the development of education and participates in poverty alleviation [11].

4. Financial Performance

4.1. Horizontal analysis

Presented in this part of the analysis is the horizontal analysis of the intracompany financial statements along with a brief discussion and explanation of each. The horizontal analysis of the income statement shows that CNPC's operating profits decreased from 2018 to 2019 by approximately 15.30%. This declining operating profit was mainly caused by a higher cost of sales, rising by around 8.85%. This negative change also significantly influenced final net profit (-9.41%), though the company had a large increase in non-operating income. Overall, gross profit and net income had a downtrend in 2019, as shown in Table.1. The company's profit trend appears unfavorable. We could further interpret this unfavorable change when we dig into the international industrial environment. All told, 2019 was one of the most consequential years in recent memory for the worldwide oil and gas industry. The record shows that 2019's WTI crude oil price average closing price and year highs were around 10% lower than those in 2018 [12]. Furthermore, the operating profit and net profit in 2020 still maintained a downtrend during the 2020 fiscal year. Overall, CNPC's three-year performance didn't illustrate a positive signal.

Table 1. Intracompany comparison (all amounts in RMB millions)

Sources	Operating profit	Net profit	Total equity
2018 Annual report	136,382	73,974	1,409,176
2019 Annual report	115,520	67,010	1,444,578
2020 Annual report	96,892	50,271	1,978,587

However, the horizontal analysis of balance sheets shows that the assets and liabilities percentages both experienced positive changes, which means the company expanded its asset base during 2019 and financed this expansion primarily by acquiring additional short-term and long-term debt. Based on their press release and public speech, we believe that CNPC is borrowing and investing more for future sustainable development and product diversification. The company's retained earnings and dividends paid were relatively stable and the ending retained earnings increased by 2.51%. Dividends paid rose by 5.07%, which is a positive sign for potential investors and current shareholders.

4.2. Vertical analysis

CNPC's short-term liabilities experienced a slight decrease while long-term ones moved in the opposite direction, resulting in the total liabilities portion increasing from 42.27% to 47.15%. The increasing long-term liabilities are since CNPC expanded their extracting operation and rigs by signing more long-term borrowing contracts. Therefore, the percentage of total equity decreased by approximately 5%. This result reinforces the earlier observations that CNPC is choosing to finance its growth through issuing additional debt rather than through retention of earnings. When it comes to profitability, CNPC seems to be less profitable during the 2019 fiscal year, as both operating profit percent and net profit percent were lower than those of 2018 (3.11 cents net profit/5.74 cents operating profit per RMB revenue). The company only obtained 2.66 cents net profit/4.59 cents operating profit per RMB revenue in 2019, which is an unfavorable trend. The other reason why the profit of CNPC decreased is that the growth of sales expenses far exceeded the growth of operating revenue. What's more, the reduction of market scale and the intensification of industry competition will also reduce its profits.

Moreover, we need to analyze CNPC with their main competitor to further comprehend the general industrial environment during that period. The percentages show that CNPC and Sinopec's gross profit rates were 4.59% and 2.91% respectively [13]. This disparity can be attributed to CNPC's costs of selling (79%), which was lower than Sinopec's (80.27%). The main reasons are the change of price difference of light and heavy crude oil, the increase of overseas freight and premium, and the narrowing of price difference of naphtha, liquefied gas, and other petroleum refining products. After deducting other non-operating and SG&A expenses, CNPC still had a higher net profit percent than that of Sinopec, as shown in Table.2. (2.66% vs. 2.43%)

Based on this comparison, CNPC was more profitable than Sinopec as it was able to generate more net profit per RMB revenue, given that they have similar assets and liabilities structures.

There is no doubt that CNPC is a giant company. Overall CNPC seems to be a highly successful company. But financial indicators of a firm's performance will give stakeholders more detailed relevant information. Thus, we investigate the domestic and global markets and attempt to evaluate the company's performance using 2019's financial reports.

We first compare CNPC's performance with Sinopec, as we mentioned above in the vertical analysis part, CNPC seems to be less profitable during the 2019 fiscal year, as both operating profit percent and net profit percent were lower than those of 2018. However, CNPC still had a higher gross and net profit margin than those of Sinopec. Based on this comparison, CNPC was more profitable than Sinopec as it was able to generate more net profit per RMB revenue.

Table 2. 2019 Intercompany comparison (all amounts in RMB millions)

Company	CNPC	Sinopec	ExxonMobil
Gross profit	115,520	86198	376502
Net profit	67,010	72033	100380
Net profit per RMB revenue	2.66%	2.43%	5.40%

We then take one step further and assess CNPC's performance by comparing it with the "best in class" international benchmark, using ExxonMobil and examining its measure of profitability margin. In 2019, though ExxonMobil experienced an annual downtrend too, its gross and net returns were higher than those of CNPC [14]. When we compare CNPC annual data with ExxonMobil, we notice some conspicuous differences. The main one is that CNPC's expenses were extremely high. Despite much lower wage levels in China, CNPC had a higher cost of sales percentage. Moreover, ExxonMobil's revenue per full-time labor was also higher than CNPC's. With a wide margin, Exxon, as a worldwide benchmark corporation, is a more efficient multinational operation than CNPC. Also, when we compare CNPC with other international oil and gas companies, the results yield a similar conclusion. In general, it seems that CNPC is a lot less efficient than the best international firms. We believe that this result could be partially explained by the main goal of CNPC: the goal is not maximization of profit. For CNPC, a state-owned enterprise, the primary goal is to provide service for the whole society, to take its social responsibility, and to contribute more for employment level countrywide. One major factor that influence CNPC's operating cost was the number of employees: CNPC employs more laborers than ExxonMobil does, leading to a lower revenue per full-time labor.

4.3. Ratio analysis

4.3.1. Liquidity ratio

The current ratio is an index of the company's ability to convert current assets into cash before the maturity of short-term debt to repay current liabilities. It indicates the current liabilities of the company and how many current assets are used as the guarantee for payment. The comparison of the current ratio is shown in Figure 1. By comparing the data of CNPC from 2018 to 2020, it can be found that the current ratio has a slight decrease in 2019, from 0.74 to 0.71, but increased to 0.84 in 2020. This ratio of CNPC is lower than both the Sinopec Group's and the industry average, which shows that the CNPC's liquidity is relatively weak.

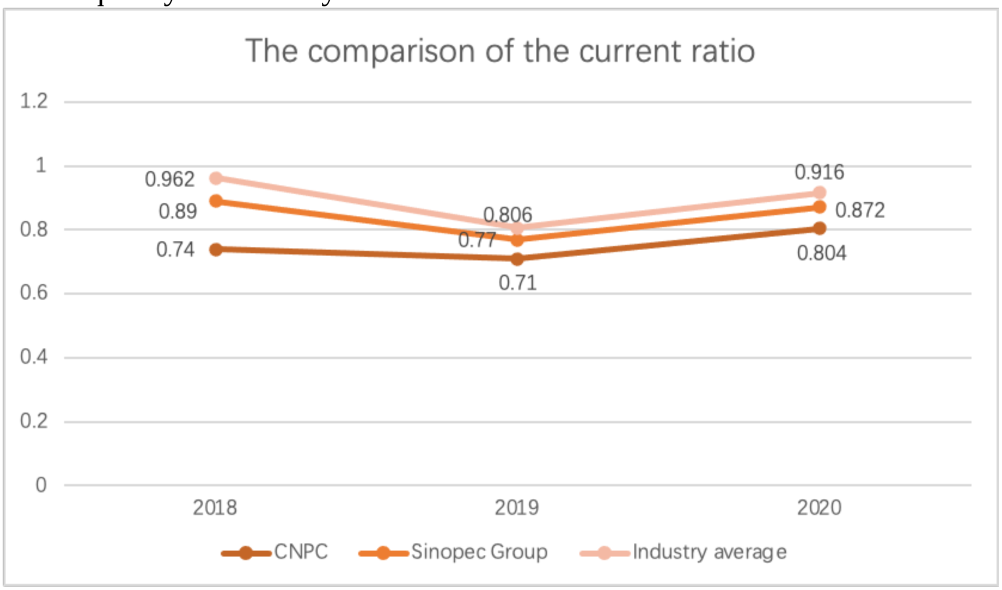

Figure 1. The comparison of the current ratio

The acid-test ratio is an indicator of the company's ability to quickly realize assets to repay current liabilities. It is generally considered appropriate when the acid-test ratio is 1.0:1. The comparison of the acid-test ratio is shown in Figure 2. The acid-test ratio has not changed much in 2019 (0.32 in 2018 v.s. 0.31 in 2019). But it has increased dramatically in 2020 (0.592), which is nearly twice than the previous two years. This ratio of both companies is lower than the industry average in these three years, among which CNPC's ratio is less than half of the industry average and this ratio is lower than Sinopec Group's in 2018 and 2019.

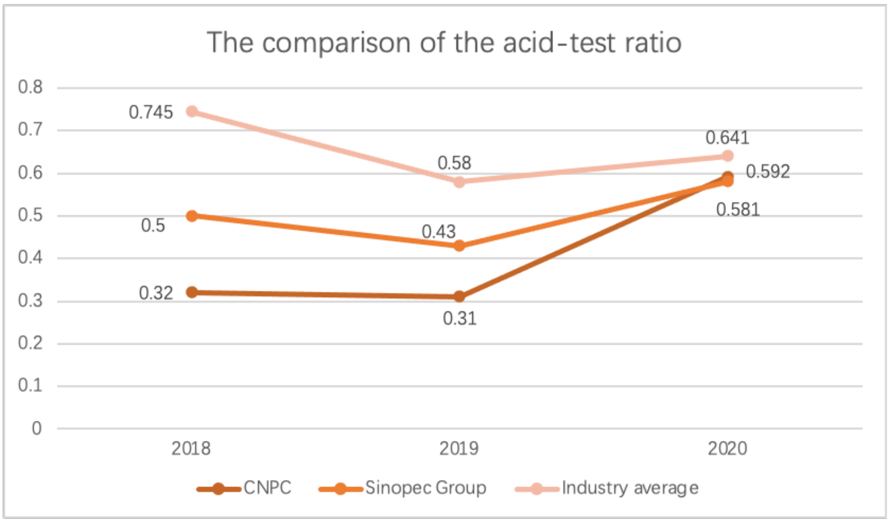

Figure 2. The comparison of the acid-test ratio

The cash conversion cycle reflects the operating cycle of an enterprise. It measures the time span from the consumption of cash to the purchase of inventory for production and operating activities to the acquisition of cash through the sales of final products. The comparison of the cash conversion cycle is shown in Figure 3. The cash conversion cycle of CNPC has a constant increase during three years, from 16.22 to 24.11, indicating that it takes longer to recover cash and its liquidity has become worse. However, when compared to Sinopec Group, it is obviously lower, which is one of its advantages.

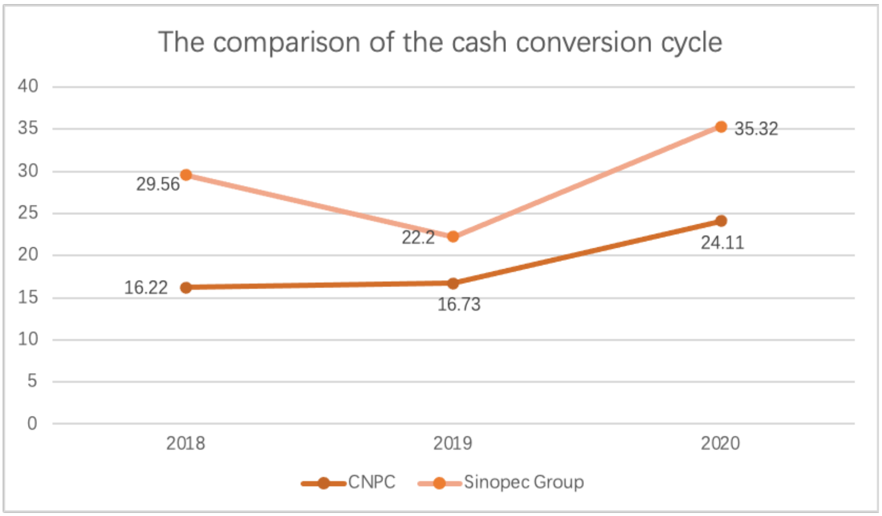

Figure 3. The comparison of the cash conversion cycle

In terms of liquidity, CNPC is relatively weaker than Sinopec Group and there is still a big gap with the industry average. In this regard, CNPC should continue to strengthen its capital liquidity.

4.3.2. Profitability ratio

Net profit on sales refers to the proportion of net profit in sales revenue and the profit brought by each yuan of sales revenue. The higher this indicator, the stronger the profitability of sales revenue.

The comparison of net profit on sales is shown in Figure 4. In these three years, the net profit on sales of CNPC decreased constantly, from 3.08% to 1.73%. In 2020, this ratio is surpassed by Sinopec Group. This shows that the profitability of CNPC has decreased significantly. CNPC should find out the reasons for the decline in this ratio and improve its marketing strategy, ensuring that its profitability can be improved and surpass its companies.

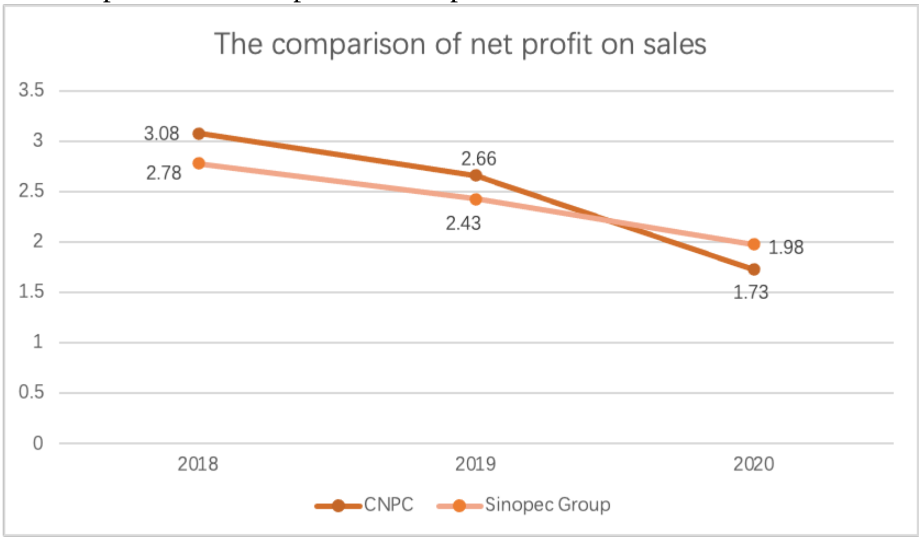

Figure 4. The comparison of net profit on sales

Asset turnover is a very important index to investigate the asset operation efficiency of an enterprise. It reflects the flow speed of all assets from input to output during the operation period of the enterprise and reflects the management quality and utilization efficiency of assets of the enterprise. The comparison of asset turnover is shown in Figure 5. The asset turnover of CNPC remained stable in the first two years (369.95 in 2018 v.s. 369.46 in 2019) but it increased to 486.03 in 2020. This ratio is lower than the industry average, whose are all over 1000. However, it is almost double that of Sinopec Group (198.47 in 2018, 203.14 in 2019, and 298.19 in 2020). If CNPC wants to improve its profitability, it can continue to shorten its asset turnover, learning from the practice of Sinopec Group.

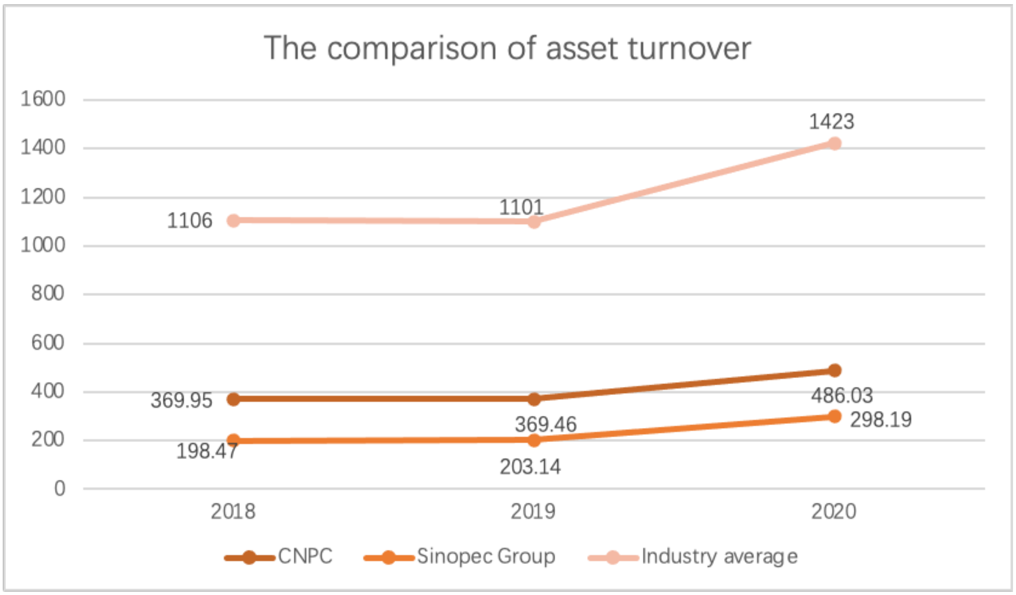

Figure 5. The comparison of asset turnover

The return on common stockholders' equity reflects the profitability of the enterprise from the perspective of ordinary shareholders. The higher the ratio means the profit the company will generate will increase, ordinary shareholders can get more income, and the potential for expanding reproduction will increase. The comparison of return on common stockholders' equity is shown in Figure 6. This ratio dropped from 4.330% in 2018 to 1.56% in 2020, showing that common shareholders' profits have become less. What's more, through comparison, it is obvious that this ratio of CNPC is far lower than Sinopec Group (8.780% in 2018, 5.990% in 2019 and 4.43% in 2020) and the industry average (7.073% in 2018, 7.790% in 2019 and 4.534 in 2020).

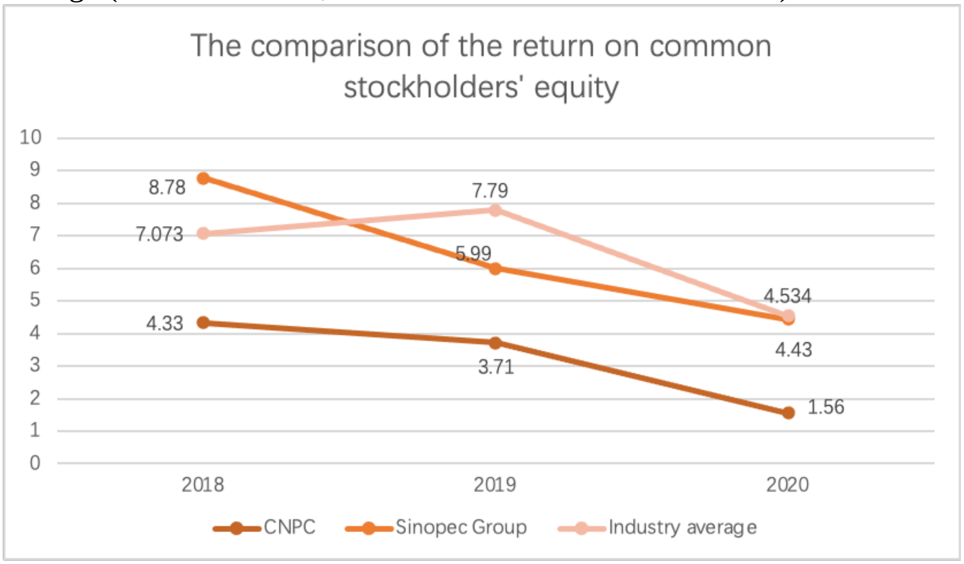

Figure 6. The comparison of the return on common stockholders' equity

Earnings per share is an important ratio used to measure the value of stock investment. It is a basic ratio that analyzes the value per share and is an important index to comprehensively reflect the profitability of the company. The higher the ratio, the more profit created. The comparison of earning per share is shown in Figure 7. For CNPC, this ratio decreased constantly (from 0.290 to 0.1), reflecting its reduced profitability.

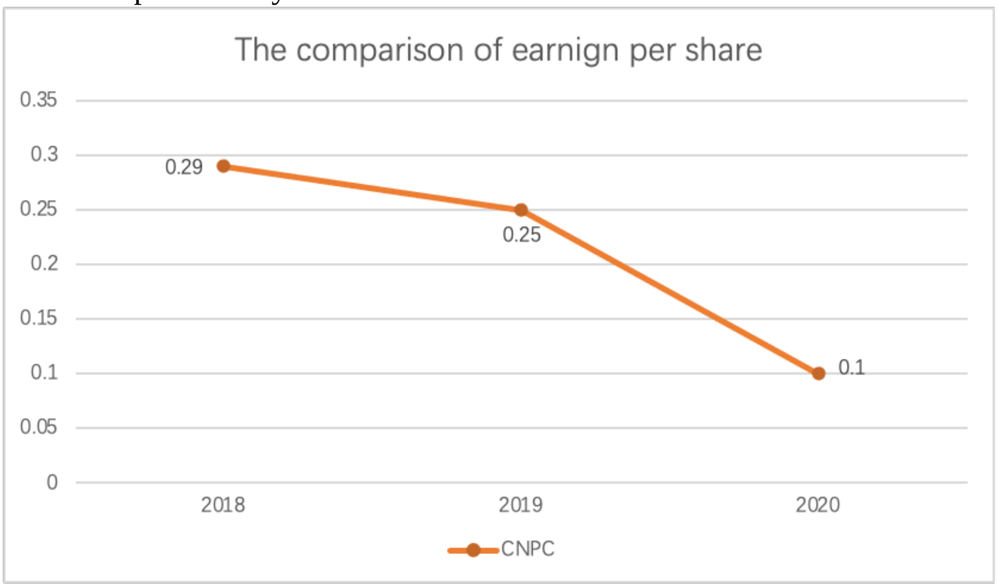

Figure 7. The comparison of the earnings per share

In general, CNPC still has great potential in terms of profitability, especially its profit margin. In 2019, global economic growth slowed down and international oil prices fluctuate frequently. What's more, competition in the domestic oil and gas market intensified. In this complex and severe situation, CNPC optimized the production organization and structural adjustment and it implemented measures to reduce expenditures and costs while increasing efficiency. Major production indicators increased steadily. However, if CNPC wants to generate more profits, it needs to find ways to improve its return on common stockholders' equity and earnings per share.

4.3.3. Solvency ratio

Debt to assets reflects the risk degree of creditors providing credit funds to enterprises and the solvency of enterprises. The comparison of debt to assets is shown in Figure 8. For CNPC, this ratio increased from 41.998% to 49.021% in these three years, but it is still within a reasonable range. What's more, compared with Sinopec Group and the industry average, it is nearly 10 percent less than the industry average, which means CNPC's solvency is better than most companies in this field.

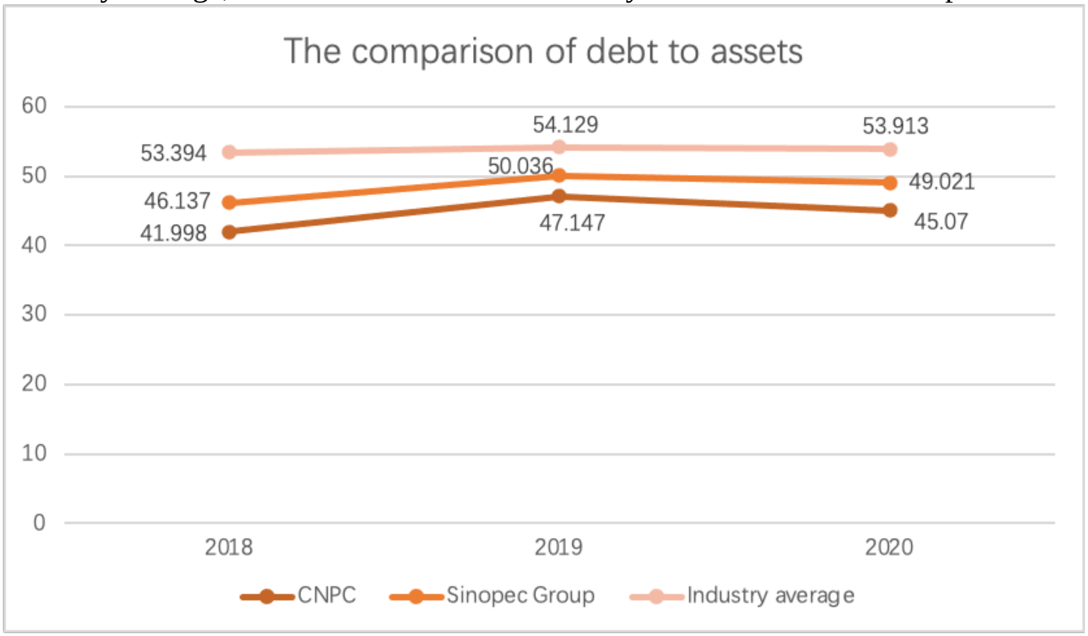

Figure 8. The comparison of debt to assets

Times interest earned ratio not only reflects the profitability of an enterprise, but also reflects the guaranteed degree of profitability to repay due debts. It is not only the premise basis for enterprise debt operation but is also an important symbol to measure the long-term solvency of an enterprise. To maintain normal solvency, the interest coverage ratio should be at least greater than 1, and the higher the ratio, the stronger the long-term solvency of the enterprise. The comparison of times interest earned ratio is shown in Figure 9. From 2018 to 2020, this ratio decreased constantly, from 6.88 to 3.26, which is due to the decline of profit and higher interest expense, meaning that CNPC may face the risk of decline in terms of the security and stability of their debt repayment. Meanwhile, comparing the data of its principal competitor, Sinopec Group's (10.03 in 2019) is twice that of CNPC and its still higher than CNPC's in 2020. With the failure of negotiations on the OPEC+ reduction alliance and the impact of global COVID-19, international oil prices have fallen sharply. The company's performance has a strong positive correlation with oil price, and its profitability will be affected to some extent under low oil price. The decrease in the times interest earned ratio may due to the impact of the COVID-19 that its profitability has decreased, resulting in the poor operation of funds and the weakening of its long-term solvency.

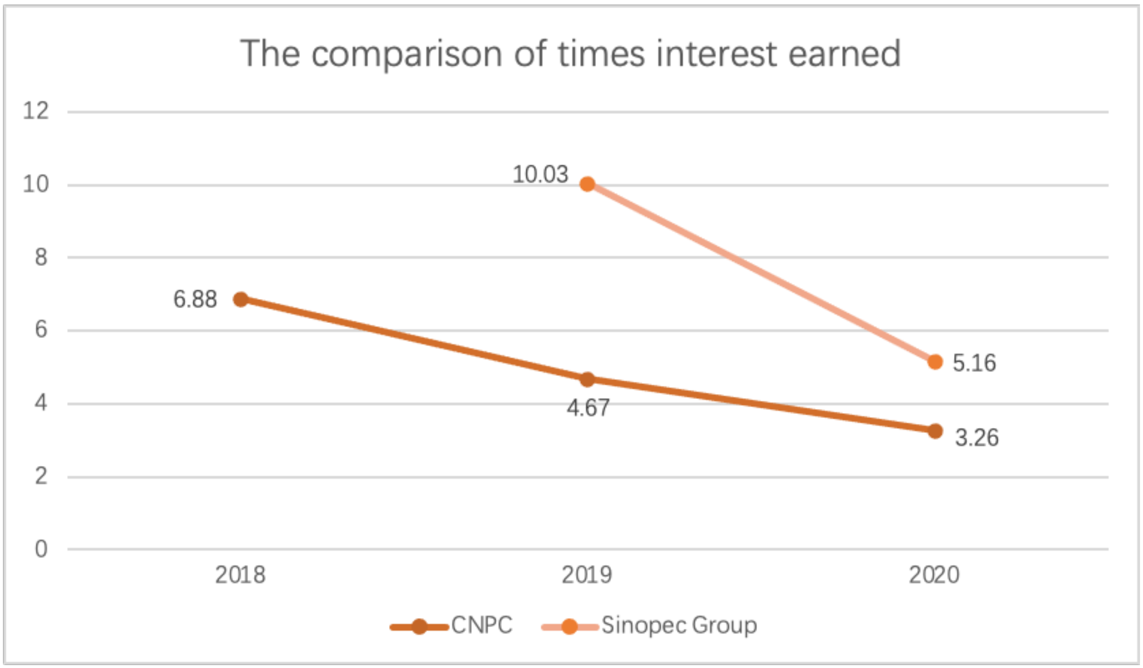

Figure 9. The comparison of times interest earned ratio

In general, CNPC has good solvency. Its debt to assets ratio is at an appropriate level (between 40%-60%). At the same time, it can be seen that the management of CNPC is relatively conservative because its debt to assets ratio is lower than that of Sinopec Group and the industry average.

5. Discussion

5.1. The influence of the decision to “go abroad”

The opportunity is coexisting and dangerous. Under the peaceful age, there is still a turmoil of war, bringing together local areas of these resources to become the target of competition among enterprises, and companies need to obtain these mining ownerships in order to ensure the complete supply chain, then the conflict avoids (Looking at the world history, this is extremely impossible to cause the presence of warfare between countries). So, should it stop here to avoid the volatile and CNPC of the international market? The answer is of course negative. CNPC is an inevitable trend in the world, and you want to stand in the world's big market. It can be said to be difficult. For this reason, CNPC's competitive advantage in China is under the protection umbrella of national policies, and has achieved a certain extent, platform construction, cost control, etc.; the advantage in the international market is to obtain core through core technology and import equipment Competitiveness, then match the domestic cheap labor, this can be said in the industry in the industry. Therefore, in the process of gradually developing the international market, we need to continuously update corporate culture, business strategies and combine their own advantage to adjust strategic objectives.

When the transnational operations are developed to a maturity phase, the company's organizational structure should be managed in accordance with regional and business. Not only that, but the International Division should also have its independent performance appraisal system and operation management system.

5.2. Potential risks

Based on the analysis above and the general environment, CNPC is facing several risks currently. On the one hand, as a developing country, China has a huge demand for petroleum energy and petrochemicals. However, the country has been short of petroleum resources for a long time and mainly relies on imports for raw materials, while western countries still maintain control over major resources. Therefore, international relation is one of the most important factors affecting the performance of the company, even the entire industry. The company needs to keep an eye on and keep up with changes in foreign policy and trade relations. Meanwhile, in the two years since the outbreak and spread of the COVID-19 around the world, the global economy has been greatly impacted, international trade has been affected, transportation has been blocked, and therefore the costs of goods have risen directly. Therefore, how to ensure the supply of oil as well as the stability of oil prices is a non-negligible challenge for CNPC.

On the other hand, global warming is one of the important issues that human beings are facing in the 21st century. Carbon dioxide emissions from oil and coal use are direct causes of climate change. With the aggravation of environmental pollution and resource shortage in recent years, energy conservation, emission reduction, and energy transformation have become the main development trend of the energy industry. As one of the major players and leaders in the industry, the company is facing both opportunities and challenges. CNPC has a huge advantage in traditional energy sources, especially petroleum. The company has to take its social responsibility and promote energy transformation while still ensuring profits and industry status at the same time, which is a problem that needs to be paid attention to.

6. Conclusion

By analyzing the macroeconomic situation and CNPC's financial data, we find that under the circumstance that the government's consumption tax policy and the COVID-19 have influenced the economy, CNPC constantly optimized its marketing strategy and maintained its strong bargaining power and positive financial performance, making it one of the most competitive companies in the industry.

This paper combines financial analysis along with a detailed analysis of CNPC's business model to show the capabilities of CNPC and which direction the company is headed for in the future. The analysis provides up-to-date information regarding CNPC business operations and has shown how CNPC successfully handled the pandemic and international conflicts.

Further research should begin studying the impact renewable resources will have on oil and gas companies. As more and more forms of renewable energy are entering the energy sector, these oil and gas companies are also beginning to expand their operations beyond just crude oil and natural gas. As we saw previously, CNPC is looking to explore wind, solar, and geothermal energy.

The purpose of the review is to identify and discuss the financial accounting issues, business strategies, corporate cultures, and future developments for CNPC. As a result, the scope of this report was limited to applying current criteria and conducting a cursory review of existing records and background information. We believe that the evidence obtained during this limited research nonetheless provides a reasonable basis for our findings and conclusions. However, there are some noticeable aspects that contributed to the scope limitation for this report. First, the analysis of the company's financial performance was based on the reports in accordance with one single standard, and the result may have some divergences when analyzing data in another acceptable accounting standard. These financial statements from 2018-2020 merely show the financial position of the firm during that period and the time length may not provide sufficient valid predictions on the future performance. Furthermore, company financial statements necessarily depend on estimates and judgment calls, which means some of these estimations could substantially alter the analysis and the final decision, especially for companies like CNPC that have numerous plants, properties, and equipment in operation sites. In addition, the future influence of environmental, social, and governance factors is still difficult to judge from this point of view. Therefore, it is unavoidable that there are some scope limitations in the use of financial analysis as well as this research paper.

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