The Potential Impact of COVID19 on Financial Reporting for Oil and Gas Reserves as Listed in the Supplemental Disclosure Notes

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Abstract

In this paper, we address the potential implications and trends in valuation of oil and gas reserves post COVID-19. As we discuss in this paper, the recent downward fluctuations in price of oil and gas would have a significant impact on the valuation of these natural reserves. Oil and gas companies are in the business of making money and generate profits, and with the COVID-19 low prices, it becomes economically unsustainable to produce at these levels. Given this and the future prospective for slower growth in both short and long term, many companies should consider retiring some of these resources as they fall out of the accounting 'definition' of an asset.

Introduction

In this paper, we discuss the potential implications of COVID-19 on financial reporting for oil and gas reserves. From an accounting perspective, there is a distinction between the physical property (land) and its attached natural resources. The purchase prices to acquire oil and gas producing physical property is capitalized as an asset and therefore, included in the balance sheet of the company. The oil and gas attached reserve resources and their estimates are listed in the notes, as part of supplemental information due to the level of uncertainty surrounding their estimation. Even though reserves are not listed as an asset on the balance sheet, oil and gas companies heavily rely on them as their supplemental value is a significant indicator for revenue generating activities. The ability to generate revenues and to continue and operate, depends mainly on the amount as well as the quality of these resources. Such resources are significant part of the operating

activities and they need to be properly accounted and recorded for. These resources are heavily scrutinized and subject to periodic audit revaluations to ensure accuracy. As company produces or extracts these 'attached resources', we subsequently need to record depletion on the recorded physical properties, based on usage (production). There are different accounting methods to accomplish this objective with the primary purpose of satisfying the matching principle of accounting. If a company is to experiences any significant disturbances in the valuation of such resources as in the case of the recently world-wide pandemic, it is bound to have significant impact on the financial statements. In this paper, we address the potential implications and trends in valuation of oil and gas reserves post COVID-19. As we would discuss in this paper, the recent downward fluctuations in price of oil would have a significant impact on the valuation of oil and gas reserves and therefore, implications for the values for such companies. It is highly likely some of these natural resources could department from the accounting 'definition' of an asset (as discussed later in the paper). This is mainly a theoretical peace and the assumptions used here, could provide basis for further quantitative analysis. We believe this paper adds value to the research community as it raises significant questions and qualitatively forecast potential trends for the valuation of oil and gas companies. This is not all inclusive paper and it should be not viewed as such. Rather, it is to open the discussion and provide the basis for further research works.

As we know COVID-19 created significant disturbances to the global economy which resulted in unprecedented lockdowns and stay home orders in many countries. Such restrictions have changed the way we transact and engage in trade. This virus can spread at a much faster pace than a normal respiratory virus such as the seasonal flu.[1] In order to protect their populations, many governments have taken such drastic steps to distance people, close all non-essential business, and move traditional learning away from schools and universities to online.[2] There have been unprecedented response and public private partnerships to ensure the population is safe and businesses/people can get back to normalcy. As these closures continued, there has been a significant implication on the demand for oil and gas. This is due to restrictions and inability for people to travel and engage in their day to day business activities. People are just fearful of leaving their homes in order not to get infected and such behavioral changes have transformed the demand for oil products. In addition, many companies are learning that some of their activities could be done more effectively even remotely and as such, long term, there is a good chance that such trends would continue. Even as countries seem to try to open their economies, the process is very slow, and

it could be described as 'trial and error'. That is, countries cannot achieve 'instant' full recovery as it is very cautious process. This is well warranted as COVID19 is a novel virus and it seems not to discriminate among people.[3] This virus seems to strike individuals greatly with some immune deficiencies, as well as elderly people.[4] At the same, it has not been all forgiving the younger population and it seems to spread rather rapidly among individuals.

There have been attempts by governments, hospitals, clinical researchers, and medical professionals to come up rapidly with therapeutics to lessen the extend of the implications and to lower the morality rate of individuals. For example, at Company based in New York State, by the name of Regenaron has come with intuitive treatment for COVID19. They are using genetically modified mice with human immune response and they inject those with the COVID19.[5] After, they took the best respondents and use their antibodies to create a therapeutic drug.[6] This approach is incredibly unique, and it was deemed very successful during the previous Ebola Pandemic back in 2014. There are remarkably high hopes that such or similar medicine could work and provide the necessary relief to the economy. There are also other companies working on therapeutics. In addition, many companies are working on vaccine to eradicate the disease. An example of such is Johnson and Johnson. Currently, the company is working on a vaccine which seems to demonstrate "promise in pre-clinical testing."[7] In addition, Reese further notes "the company says it is expecting to initiate human clinical studies of its lead vaccine candidate by September 2020 at the latest."[8] However, in order to get back to the previous normal or the pre-Covid19, this disease needs to be completely eradicated. For such, it would take time according to scientists.[9] Some even question if such "cure" is in the short-term horizon.[10]

As the cure of COVID-19 is not near term, most economies have scaled back on social gatherings, meetings, working in groups, and this has a direct impact on the demand of oil. At the same time, the supply side has remained relatively constant with lesser production cuts. This discrepancy between demand and supply, was further fueled by the price war over production between Russia and Saudi Arabia.[11] It seems these two power nations did not read well the economic conditions and the potential for demand drop in oil. This has further compounded on previously established market trends. In recent times, there has been a significant oil cuts by OPEC nations, but many experts believe such would not be sufficient to correct the discrepancy between the demand and supply. As this virus seems to strike at different times and places, it is difficult to determine exactly at what point life would go back to normal and the supply/demand side of oil and gas would normalize. There are going to be attempts to open the economy with a certain precautionary measure to ease up the energy market. However, to get

to the 'previous normal' would take time and advancement of therapeutics and vaccinations. It seems at least in the short run, this virus is here to stay and as such, oil and gas companies need to make the proper adjustments for planning and subsequently for financial statement presentation. Many governments have taken unprecedented steps to keep the consumer spending by engaging in governmental stimulus to its residents. However, the fear and the inability to fully mitigate the virus, at least in the early stages of its emergence, has raised doubts about the ability at least in the short term, to gain the same level of demand as pre-Covid19 conditions. In such dare conditions, many companies must readjust their businesses to cope with the rise of fear. Oil and gas companies are not immune to this health crisis and they must cope with the decrease in demand. It is very much expected they must cut on certain level production to meet the ever-decreasing level of demand, at least in the short term.

Impact of COVID19 on oil and gas reserves

It is important to differentiate between the actual properties (plant assets) and the natural resources or reserves attached to them. The oil and gas properties are capitalized as natural resources (plant asset or intangible asset account). The cost includes the sum of acquisition, exploration and development of the property.[12] In the case of natural resources, the property also involves the holding of land. However, there is distinction between the asset 'land' and its natural resource attachment. Per the accounting regulations, companies can capitalize the cost of purchasing the land at its fair value at the time of the transaction.[13] This holds true for any purchased item or economic transaction at time of purchase or acquisition. Once such value is recorded additional costs could be capitalized for exploration and further development of the natural property. After the asset becomes producing, it is subject to depletion based on the estimated reserve size and the production for the period. It is important to mention that the value of the land at the time of acquisition represents the negotiated price point at time of transaction based on a certain level of assumptions about the value and the cost to develop the property. Further, owner of the land in oil and gas producing businesses primarily hold the land for exploitation of the natural resources' vs typical owner of land who might be interested in building a site. The value that these assets are recorded is the fair value at the time of purchase from third parties. It is important to note that the cost is not always related to the value of the land. It is the perception of the buyer and sellers as the potential for the property to generate future revenues as the result of the composition and content of the reserves. Per the accounting regulation, companies can account for such resources using either:

> Successful-efforts accounting allows a company to capitalize on only those expenses associated with successfully locating new oil and natural gas reserves.
>
> Full-cost accounting allows companies to capitalize on all operating expenses related to locating new oil and gas reserves, regardless of the outcome.[14]

For the purposes of this paper, the assumptions that we make would apply to both methods. Therefore, we would not entertain and discuss further differences between the two. Regarding the reserves, they can be classified as either proved or unproved depending on the degree of certainty associated with their estimated recoverability. Per accounting regulations, proved and unproved reserves are defined as:

> Proved reserves are estimated quantities of reserves that, based on geological and engineering data, appear reasonably certain to be recoverable in the future from known oil and gas reserves under existing economic and operating conditions, i.e., prices and costs as of the date the estimate is made.
>
> Unproved reserves are those reserves that technical or other uncertainties preclude from being classified as proved. Unproved reserves may be further categorized as probable and possible reserves.[15]

In this paper, our primary emphasis is on proved reserves capable of generating revenues over time. If the value or demand of such resources is stagnant or in decline, companies need to reevaluate the capitalization of such on the books. As a starting point, companies need to properly estimate their reserves using research reports. These reserves are of a great significance to the company. The valuation of such resources could be highly subjective as the reserves are deep into the ground and companies must rely on seismic engineers to provide them with an estimation of the quantity. Preparing such "reserve estimates is a very complex process. It requires an analysis of information about the geology of the reservoir and the surrounding rock formations and analysis of the fluids and gases within the reservoir. It also requires an assessment of the impact of factors such as temperature and pressure on the recoverability of the reserves."[16] However, in the time, such estimates have proven to be highly accurate as valuation companies can use variety of technologically advanced techniques to map the underground and almost project with high level of certainty the quantity. In addition, once it is estimate via production outputs, engineers could determine if their estimates accurately project these reserves. This is the one

side of the valuation of the oil and gas reserves. The second component is price or the fair value at time of reporting. The price is very much driven by market conditions and expectation of such in the future.

As the oil demand and respective prices have dropped significantly since the beginning of the pandemic, it is expected that the values of natural reserves would follow the same suit. This is due to their direct relationship with the price of oil. As companies are in the business of making money and generate profits, given the low prices, it becomes economically inefficient to produce oil and gas. Given this and the future prospective for slower growth in both short and long term, many companies would start to retire some of these assets from the balance sheet. As this is going to be occurring and expected in short term future, other accounts such as depletion expense would also be affected as the result. Given the current state of dismissal of economic activities, there is always a certain level of an economic delay between demand and supply. As such, price would not at least in the short run reflect the decrease in demand and the over production. As such, the price used for the reserve reports, would be relatively low.

The above retirement of reserves is not unusual, and it is expected. From an accounting perspective, an asset is defined as an item that meets 3 conditions as specified by US GAAP or specifically "i) to provide future benefits to the company in terms of revenue generating activities; ii) is the result of past events and iii) it is an item that can be controlled." [17]

When a company acquires an oil and gas property, the primary driver for such purchase is the ability to generate future profits for the company. These estimates are based on the assumptions at the time of purchase. The key inputs for such assumptions are 1) quantity and quality of reserves 2) the price to produce them and 3) price to sell them. We can argue that input assumptions 1 and 2, relatively stay the same unless there is specific breakthrough by company that would help them become more cost efficient. However, more likely than not, these assumptions do not change. For the purposes of this paper, we would keep them constant. The third assumption or the price point of selling them is market based. We believe that when there are significant disturbances to this assumption, the company needs to readjust the value of its underlying assets. In the case of COVID19, and the dramatic cuts in demand, the price has hit record lows. There is just too much oil on the market to meet the demand. As such, price is driven down. If a company does not the capacity to store such production, they must cease producing it. This is the trends, we have experienced in recent times.[18] As this this occurring, and this impact could last more than a year, many companies need to revaluation and potentially impair the oil and gas assets they have initially purchased to reflect the market conditions we are experiencing. If

this 'impairment' is not done, technically, the plant assets would not meet the accounting 'definition' of an asset as it would not be capable of generating future revenues for the company given the short and long term perspective of the market prices. Therefore, any inclusion of such items on the balance sheet might be seen as overestimation and inconsistency in the reporting by companies.

An alternative way to think about the value of oil and gas reserves as listed the supplemental notes is as intangible assets. For these assets, there is a different way to account based on the trigger of their creation. External costs or price paid to acquire such items is recognized as an asset on the balance sheet. For the internally or self-created assets, we expensed them as incurred. In the case of business combination or when one company purchases another, if the there is an excess of price of paid over the fair value of the net assets' purchases, we recognize goodwill. From a perspective of oil and gas, when we buy peace of land with oil or gas reserves attached to it, we can think of buying two separate assets, the land itself and the reserves or the intangibles. However, as in the case with goodwill, it is exceedingly difficult to put value to such assets. In addition, some of these reserves could be classified into proved or unproved, in which case, we might not be able to fully benefit from their extraction. From internal purchase or self-discovery of such resources the same hold true. Now, it is interesting to observe from external point of view, we typically perform impair of intangibles such goodwill, if there are proper conditions or events that could trigger such adjustment. The same could hold true for the value of oil and gas reserves, regardless of whether they are proved or unproved on the supplemental notes. We need to reevaluate such, and it is important to not only list their value of the books but rather the impairment or the adjustment from the previous value based on the current market conditions. Such additional information would be valuable as it would provide the readers of the financial statements a deeper understanding of the conditions affecting the company.

As companies need to impair previously established assets, they would be direct impact on the depletion expense. This is due the inability of companies to produce oil at the current market levels and effectively sell it. This is not all-inclusive statement. There are companies which could continue to operate at the current market conditions at losses. The key question is not whether such losses could be sustained in the short or long term. Rather, whether such prices of oil could be present in the long run. Given the current pandemic and the major impact it had on demand, we believe these prices are here to stay. As a result of this pandemic, many companies are realizing that they can continue to operate and be effective without even holding offices. Many workers are as just as effective as they are at work. We believe

this trend with continue on a certain scale and therefore the demand would not be able to pick up to its levels pre-COVID-19. As such, major impairments of cost inefficient oil and gas properties should be on the discussion table of major oil and gas companies. Therefore, the above the discussion is very relevant and it would be on the agenda of many natural producing companies.

Conclusion

In this paper, we analyzed the potential implications of COVID-19 on financial reporting for oil and gas reserves**.** As the oil demand and respective prices have dropped significantly over time, the values of these reserves have followed the same suit over the course of COVID-19. As companies are in the business of making money and generate profits, given the low prices, it becomes economically inefficient to produce oil and gas. Given this and the future prospective for slower growth in the short term, many companies have started to retire some of these assets from the balance sheet. As this is occurring and expected in short term future, other accounts such as depletion expense would also be affected as the result. We believe this paper adds value to the research community as it raises significant questions and qualitatively forecast potential trends for the valuation of oil and gas companies. This is not all inclusive paper and it should be not viewed as such. Rather, it is to open the discussion and provide the basis for further research works.

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