

# Petroleum engineering defaults about excessive productions of crude oil especially OPEC countries and its implications about lack of national financial sustainability

## Introduction

For a long time Oil Producing and Exporting Countries (OPEC) have enjoyed some unheard and previously unseen financial glories and independences over many countries worldwide. For example, countries such as Saudi Arabia, Iran, Iraq, and United Arab Emirates in the middle east, and Libya, Algeria, Morocco, and Nigeria in African and Mexico, in South America have enjoyed what it takes to have oil mass deposit in their countries' entities and parameters. Contrarily, that is not the case today; as the world continues to revolve about what is a good long term financial sustainability and what is not today. Therefore, the focus of this article is to examine what went wrong with OPEC in particularly and how do we resolve their issues as to prevent them from reoccurring again and again over and over again in deeper financial defaults.

## A brief history of oil discovery in America (USA)

Historically speaking, crude oil was first discovered in Beaumont, Texas in the early 20th century by a farmer who was tilling his land only to see black nasty and dirty oily substance floating from his farm. He called on the public health and environmental engineering officials to take some samples of the oil for further examination. Thereafter, the milestone of oil as one of the most valuable items worldwide was born. Precisely speaking, that is why majority of the rich and possibly competitive millionaires in the USA were from the state of Texas. The millionaires' monies were so massive that it developed a saying that "When it is big, it is only big enough for Texas; and not necessarily due to the size of the state of Texas." Yes indeed, it was big enough for Texas. And, this was how oil was first discovered in the state of Texas and the rest of the world were forced to play the roles of runners' up trying to catch with this historic race.

## Discovery of oil in middle east and Africa countries

First, Saudi Arabia was a desert country that was known for its historic religion; however, after the discovering of unimaginable overwhelming oil depots in possibly 60 years ago, Saudi Arabia stood as one of the richest countries worldwide. Saudi Arabia leaderships were able to see the importance of their natural inheritances and were able to commercialize and redefine to the rest of the world about the prices and values of their natural inheritances. Until today, Saudi Arabia still controls the worldwide implications of the values of crude oils and their derivatives among many, just to mention a few. However, as the international oil explorations and discoveries increased worldwide, countries like Nigeria discovered oil in the southern section of the country, Libya, Algeria, Morocco, and a handful in western and northern belts of Africa discovered some reasonable oil depots nationally. History has it that if oil was discovered in these African countries prior to seeking and gaining their independents, United Kingdom (UK) would have fought for their demanded rights until the last bloods were drained. This is true; but, while the UK leadership physically gave independences to these countries, she did not give them their psychological independencies. Precisely

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speaking, that was why majorities of crude oils naturally cultivated and harvested in Africa were classified as British Petroleum oils also known as (BP) for tens of years after these countries independents. However, majority of Africa leaders were able to fight and seek the renaming and redefinitions of their naturally owned properties; hence, petroleum entities and derivatives were systematically renamed Africa Petroleum (AP); which is a historic progress. But the question now becomes, why did the OPEC fail their citizens in light of the overwhelming trillions upon trillions of dollars excessive oil depots in their counties? That is the focus of the final section of this article.

## Methodology

This study investigated the roles of hydraulic fracking in Houston Harris County, Texas and surrounding areas by using Non-Experimental Descriptive Statistics measurements design concentrating on Houston data between 2010 and 2013. Non-Experimental Descriptive study statistically examines or secondary data and makes some social scientific senses out of the outcomes of data analyses.<sup>1,2</sup>

## Theoretical framework

This study used Social Construction of the Ideology of Reality Theory in making decisions about the prices of oils in general in the OPEC countries in general; and the actual realities seen by the world as a result of over productivities and the effects of the US hydraulic fracking impacts overall.<sup>3</sup> This study also used the conceptual formula Atatah<sup>4</sup> known as Atatah's "Statistical Significant Differences Multiplier" (SSDM) as a way of 95% accuracies in estimating actual future occurrences and outcomes as a result of lack of transparencies in many organizations worldwide.<sup>4-6</sup>

## Results and finding of the study

### Oil barrel price

Figure 1 above showed that Harris County Texas between 2010 and 2014. In five years, the (M) was \$101 per barrel, while the (Md) was \$105, the (Min) was \$79 and the (Max) was \$117 indicated a

symmetrical drop in oil barrel prices in Houston Harris County, Texas and the surrounding areas. Furthermore, the (Std. E) was 97.7, but the (Std. D) was \$15.50 which indicated a statistical significant differences decrease from \$117 per barrel to \$79 per barrel or 33% price drop from 2010 to 2014. The data indicated a symmetric drop instead of a systematic drop in oil barrel prices (Figure 1 above) as shown. At the initial conclusion of this study, we found that Oil Barrel price has dropped from \$117 to \$58 or approximately 50% drop in price. Once again, this is yet another Symmetrical drop instead of being a systematic drop as required in commodity trades (Figure 1 & Figure 2 above and below for more). (Figure 2) Oil barrel price cumulative percentage color coded and difference on the right-hand side and its impacts on the price of a gallon of gasoline in Houston Harris County, Texas between 2010 and 2014.

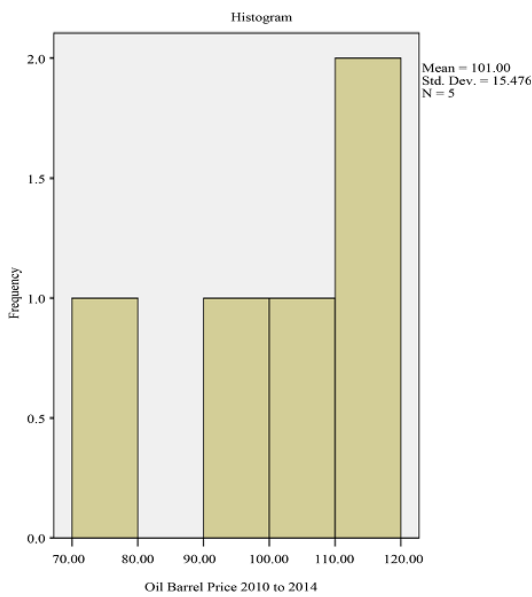


Figure 1 The Oil Barrel Prices between 2010 and 2014.

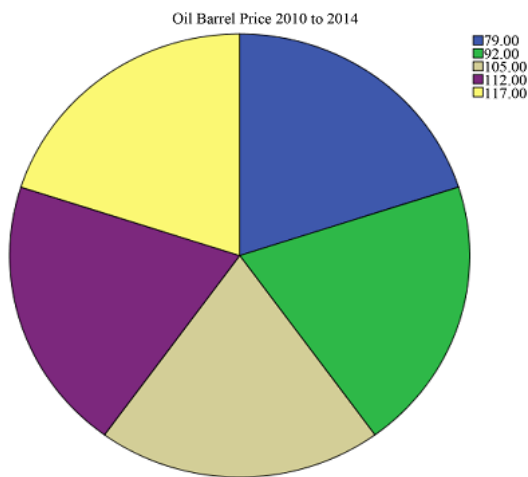


Figure 2 Oil Barrel Price between 2010 and 2014.

**Gas prices per gallon**

The above statistics indicated the multiple modes of the gas prices per gallon from 2010 to 2014 in Houston Harris County, Texas and

surrounding areas. The (Max) price was approximately 3.90 per a gallon while the (min) was approximately 2.70 and still dropping from 2010 to 2014. Also, the (M) was 3.35, the (Med) 3.61, and the (Std.D) was 0.612 was shown in Figure 1 & Figure 2 indicated 100% of valid and cumulative percentages of independent variables. Figure 1 & Figure 3 illustrated the statistical significant changes of prices of gas per gallon from 2010 to 2014 (Figures 1-4 for more) as shown above. At the conclusion of this data analysis, we found that gas per a gallon prices in Houston Harris County, Texas and surrounding areas dropped from approximately 3.90% to 2.15% or 45% drop per gallon. This is yet a symmetrical drop instead of a systematic drop that has not been seen in the oil industries since possibly in the early 1980s oil blots.

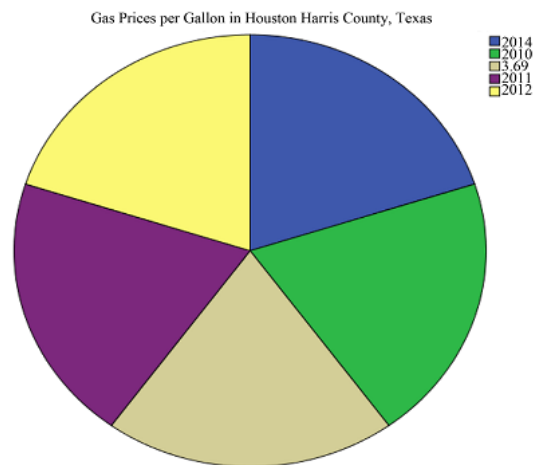


Figure 3 Gas Price per Gallon in Houston Harris County, Texas between 2010 and 2014.

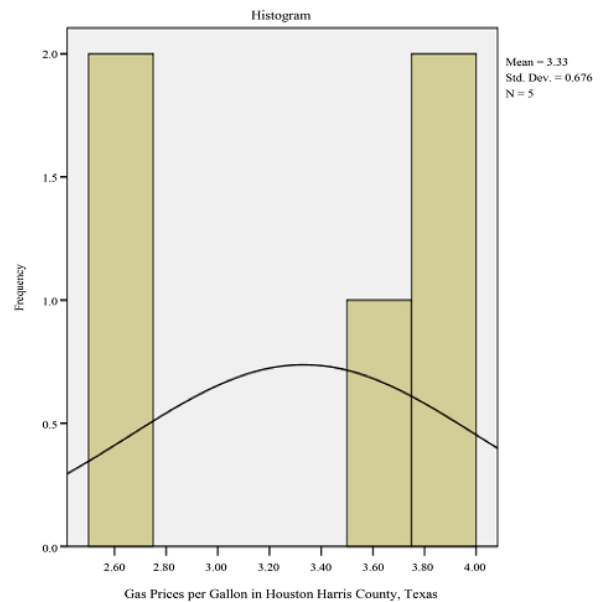


Figure 4 Gas Price per Gallon in Houston Harris County, Texas between 2010 and 2014.

**Financial failures of OPEC worldwide with petroleum productivities**

Generally, the financial failures of the OPEC were simple and clear. First, majority of the OPEC dealt with a singular means of

being financially sustainable worldwide; however, they lost site that oil is currently discovered worldwide daily. As such, the more the discoveries, the less the values of the products due to suplications of products. As stipulated by Atatah & Kisavi-Atatah's<sup>7</sup> the laws of demand and supply have not changed in history; because "The higher the demand, the higher the supply; and the lower the demand and the lower the supply." This economical and business law has not changed in years; and lack of paying critical attention to this law systematically and even symmetrically decimated majority of the OPEC countries worldwide due to the followings additions.

## Discussions and conclusions

The simple "law of demand and supply" states that the higher the demand is, the higher the supply is and vice versa. Based on this simplified definition of the collaborations between demand and supply, both the OPEC and American oil drillers have totally undermined simple, economic law or theory of demand and supply. Also, the break even analysis theory emphasized that in any investments; at one point of the investments' processes one should break even in order to float financially, instead of sink. Further, for anybody to successful and financially stay afloat indefinitely, one should be aware of the fundamental principles of The law of Demand and Supply (LDS), Cost Benefit Analysis (CBA), Break Even Analysis (BEA), and Equilibrium Price Theory (EPT) just to mention a few. However, failure to comply with the above enlisted economic theories and laws leads to what we are currently observing today in OPEC, Europe, Russia, other oil producing countries and international currencies against the American Almighty Dollars. It is arguable but, many believed and gave state repeatedly that those OPEC countries such as Russia, Saudi Arabians, and Africa oil-producing OPEC countries cannot afford to reduce volumes of production because it will decimate their countries' annual or fiscal budgeting and finance.

Today, it is unprecedented and disturbing; but, failure to wisely implement simple economical laws or theories as analyzed above, will surely indicate the beginning of the oil burst, like what we all have experience in the early 1980s internationally, but, only time will tell. In summary, it should be noted that since the initial completion of this study, the OPEC countries have been struggling with how to permanently stabilize the price of oil worldwide. In some cases, oil barrel dropped as low as \$40 to \$38 stayed there for almost a year. It even as low as less than \$25.00 in the beginning of 2020 this year and for the first time oil production history, the price of production exceeded the value of the product itself. Yet the ideology of social construction of the reality theory was in place because the OPEC countries insisted in flooding the markets with more oil by buying oil storage tanks as they produce more oil to flood the oil market and waiting for the price of oil to rise. As disappointing as it may be, the price of oil did not rise and the struggle to stabilize oil price worldwide remains an endless that that only time will time where it ends. In light of the above concerns, there is a small bright for the OPEC countries so long as they carefully implement the pinpointed recommendations of this study among others as to make these OPEC countries more financially sustainable for years to come.

## Recommendations to OPEC countries

Beside the recommendations of Atatah & Kisavi-Atatah<sup>7</sup> to the OPEC countries the following recommendations should be considered as well as to refurbish the current OPEC entities.

- I. OPEC should know that no countries will survive excessively by simply dealing with one singularly item; as such, multiple investments diversifier is a must as to be financially sustainable.

- II. OPEC should learn from the lessons learned and insights gain in 1983 in Houston, Texas during the first historic oil failure; and Houstonians vowed never to make its source of revenues singular; thereafter, Houstonians developed some overwhelming diversities across the board.
- III. OPEC should and must learn how to use these trillions upon trillions of dollars earned or gained from oil to develop other financial entities that maybe financially overcoming and long-lasting.
- IV. OPEC and petroleum engineers should and must learn how to "cut their coats according to their sizes" because overly spending in industries that are not yours, does not mean that you are successful; it only means that you may be riding on the shoulder of the successful owner of your company.
- V. OPEC should use the success of United Arab Emirates success, who were able to transform a previously desert by the seaside city Dubai into an international destination worldwide.
- VI. OPEC should learn from the history and discoveries of hydraulic fracking in the USA which overnight made US the second largest oil producing country worldwide. This means US is no longer the largest oil importing country in the world; but, instead, China became number one importer, in this area of financial sustainability's' competition.
- VII. Finally, OPEC countries need to know that the world is changing; and, oil is discovered everyday worldwide, and as such, they should learn how to diversify their oil revenues into other profitable areas as to stay financially sustainable for a longer time to come.
- VIII. In summary, if majority of the OPEC countries review the Atatah & Kisavi-Atatah<sup>7</sup> publication's recommendations, along with the newly recommended above items above about how to be systematically financially sustainable, OPEC should overcome its current financial in-sustainability issues if they are carefully implemented.
- IX. Finally, OPEC countries should and must not use any misfortune created by natural or manmade disasters as yardstick of raising the price of oil immediately. Instead, these countries should and must study the general of these occurrences and use the lesson learned and insights gained from them as guidelines and moving financially forward systematically; as a way of permanently stabilizing the price of oil worldwide.

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## Conflicts of interest

Authors declare that there is no conflict of interest.

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