

Causes and Effects of Gas Prices Increase in Saudi Arabia

 Eyas G. Abdel Raheem Osman *

Shaqra University, Shaqra, Saudi Arabia

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Abstract: This paper investigated the causes and effects of gas prices increase in Saudi Arabia. Saudi Arabia is known as a larger producer of oil and world leading exporter. The study aims to reveal the effects of high prices of gases along with the question what causes these high prices in today's economy. Saudi Arabia's main products to export oil and natural gas since it accounts up to 90 percent of total country's exports. There is a very high demand of gas by most of countries along with USA. In this study, the use of gas cylinders among households and use of gas products in different industries is investigated by considering it as the causes of gas prices rise. Government expenditure and frequent transaction by individuals may be also the considered one of many causes of this rise. Since Saudi Arabia mainly export oil as major source of income, fluctuation in gases' prices has probability of causing greater effects on other income generating sectors. For instance, external factors reduced oil reserves in oil producing countries, and new marketing partners caused by bilateral talks among head of states which led to the rise in gas prices.

Keywords: *Natural gas and oil, gas and oil prices, economic development, economic growth, increase of gas price.*

Introduction

Saudi Arabia was considered to be the largest producer as well as the exporter of petroleum in the world in 2012, the largest holder of crude oil reserves and the second largest crude oil produce after Russia. The economy of Saudi Arabia remained dependent upon the export of petroleum since it generates 90 % of the total revenue of Saudi Arabia. Gas production in Saudi Arabia has increased over years to meet the current need of energy Saudi Arabia is known as the eighth producer of natural gas in the world and is also the fifth largest consumer of natural gas. The organization of structures and reserves has made the Kingdom of Saudi Arabia to continue being in top of natural gas producers (Calabrese, 2015).

In 1938, Saudi Arabia first discovered the existence of oil and natural gas (Vakhshouri et al., 2015). It happened due to the demand of oil which increased after the first world War (WWI) since oil was a major resource to fight wars against the rival forces. During this time, most vehicles were manufactured, hence, they demand to the discovery of oil sources and gases used in vehicles manufacturing industries. As it has been mentioned above that the Kingdom of Saudi Arabia has been known for years as the leading gas and oil producer and also the largest exporter among the oil producing countries which has made it enable to be the center oil market. Persian Gulf is the largest reserve of natural gas in Saudi Arabia where in the year 2009, they had over three trillion cubic meters of this natural gas. Saudi Arabia is known as the largest consumer of petroleum particularly in the areas of direct burn for power generation (Al Mawali, 2015).

In Saudi Arabia, the natural gas was produced for domestic consumption; therefore, it has not established its base in the global market. Though they have been having significant and high-level production. By the year of 2020, the government has taken an initiative to work on the production of gas (Calabrese, 2015). Many projects have been funded by the government to ensure the advantages of getting good price in the global market. To ensure success in this regard, they have funded these projects with enough resources to cope up with the problem of water scarcity, availability of work force and also solving problem of permeability (Stevens, 2015).

In Saudi Arabia, the growth in production of natural gas has led various significant changes in the Saudi economy. The main reason behind this growth is the quality of gas which is exported by Saudi Arabia since it is eco-friendly. Harmful gases such as sulphur has been transformed in to less

* Corresponding: E-Mail: eyas-gaffar@su.edu.sa; Tel: 0556234214;

harmful gas, which can be easily be transported through pipeline, hence, minimize the cost of production along with preserving the environment. It can be regarded as one of the most important components of gas production since there is diversification in its functions and can also be utilized by various manufacturing companies.

It can be contended that gas production has greater potential for creating more employment opportunities as well as source of capital to the government, if attention is paid to invest more in this industry rather than other industries. Fluctuation in prices can have greater impact in economy due to its spillage effects. Gas and oil are interlinked products though they cannot be taken as the perfect substitute of other energy sources.

The extraction of oil requires the use of gases, and this make them mutual products. Saudi Arabia is the largest producer of oil which requires water and power utilities and venturing on gas production makes these two industries to be competitive in the global market which has also led to increase in prices of gases. There is a high need to do something in order to avoid the fluctuation of prices. It is important to analyses the role of macroeconomics in order to reach stability in prices. Significance of gas relates to the diversification's merits. A world where a commodity has substituted which serves the same purpose by representing various properties is better than one where a commodity rules without having any challenges in its significant uses. The development objectives would attract attention of the global world to this sector. There is no doubt that gas has many economic uses in Saudi Arabia which require be exploring as well as appraising with rigorous and complete economic criteria. Gas resources ought to be developed by adopting various effective considerations since reveals that "expected benefits are greater than those that would accrue from alternative uses of investment funds. In other words, one always needs to take into consideration competing opportunities" (Al-Sahlawi, 1988)

Saudi Arabia has been facing competition from United States of America in global market; because of US extensive market share along with of its connection to many countries for instance, it supplies to Norway, Netherlands and many other countries. Many problems are faced by Saudi because of the use of human labour instead of machinery which makes competition tougher for them in the global market. Another factor that led to increase in the gases price is high taxation imposed by the Saudi government on these projects which has become a stumbling block in the progress of these project, demand is higher than supply in Saudi Arabia. (Ayad, 2015).

Arabian American Oil Company (ARAMCO) has recently invested in gas production for both domestic as well as external consumption. This strategy was based on the notion that that the Kingdom is only depending on domestic production, hence, the possibilities of securing a hegemonic position in the global market is high.

The Kingdom of Saudi Arabia also aims to meet its goals of vision 2030 through the development of different industries which also includes textile industry and farming which will enable reduction in the cost of life caused by major exports of only one commodity. Massive increase in the gas price has been considered to be a disturbance to many economic sectors by economies. Its effects have led to fall of major industries which really dependent upon on gas being a major source of raw materials, closure of these industries has led to among the people of the Kingdom since many families depended on these industries to earn their livelihood.

Method

In order to analyse the causes and effects of increase in gas prices in Saudi Arabia, annual data was obtained from the past decade of the price of gases reports. The analysis has been performed from the period of 2005 to current year of 2019, which includes various reports from different countries on the prices of the gases. And comparative analysis of these reports reference of been made.

As far as the model for conducting this analysis is concerned, vector regression model was used in order to analyse the effects of macroeconomics variables. Philip's curve theory was also based on analysing the relationship between gases price increase and the economic growth in terms of full employment of available countries' foreign relations also have a great impact on economy; therefore, an attempt has been made to analyse them in relation to increase in gases' prices. The relations were also analysed in relation to the events that have taken place in the country.

Theory and Calculation

Causes of Gases Price Increase

a) Government increased expenditure

The financial budget makers of Saudi government have allocated a huge capital than revenues earned from public. This huge allocation is used for free schooling, free health care, public pensions and too many government employees. The Saudi government has imposed huge taxes over gases as well as electricity in order to finance the deficit expenditure. Most of the citizens of Saudi Arabia covering about 90 percent of total population are employed by the government. Policy makers did not look at the cost of production of services and goods to the people with the view of potential revenue, which would be quite significant in aiding profits, high ups in the government are also paid highly without taking into consideration their responsibilities as well as availability of capital.

Free Schooling in Saudi Arabia

Providing free schooling in Saudi Arabia was an initiative taken by the Saudi government. This initiative was highly praised since it was to empower youths and mostly the poor, but later it turned into the worst nightmare since government did not raise capital from normal taxation. Economic policy makers completely failed seek means of diversifying economy for new sources of income in order to finance the new government policies, which led tooled to heavy taxation on the available products including gases, hence, prices increased, (Tseng et al., 2001).

Free Health Care Policy

The most expensive sector in order to finance is health sector since medicine and its services are very expensive. Saudi Arabia offers medical facilities as well as treatment for free to people; hence, to implement this policy, it required huge capital which increased taxation on gases. (ACWA Power, 2013).

Public pension

This policy was implemented by the Saudi government in order to pay monthly stipend to retired as well as unemployed people. This policy was also praised as it was an initiative to improve the lives of retired and unemployed people in the society, Saudi Arabia with huge debts did not prove to be an ideal country to implement it because it looks like liability that does not aid in returns.

b) Domestic consumption

Saudi Arabia does neither import nor export natural gas which helps producers to be monopolies that can increase or decrease the prices with theory of demand and supply taking place in an economy. For these gases, there is a huge demand in Saudi Arabia by locals and industries which has led to 50 percent increase. Global warming in most of the countries, particularly, in Saudi Arabia where government has started focusing on maintaining sustainable environment by protecting trees has a great effect on the Saudi economy (ACWA Power, 2013). The Saudi government has imposed ban on charcoal burning due to the issue of global warming but it hassled to high demand in gases to be used by households, therefore, making producers to increase the prices. The Saudi government does not allow the import of the products which are cheaper in some other countries, which has made the local producers able to enjoy monopoly in the global market because they have no competition over there. Local manufacturers of these gases have faced many challenges including the production's high cost. The cost of labor and electricity is very high due to the fact that old methods of production are being used; the increased cost of production has led to a greater increase in the prices of final products. In Saudi Arabia, the cost of labor is also too expensive which has also become one of the reasons behind continuous increase in gases' prices. Gases are considered to be very sensitive in nature and require lot of care to handle; equipment's and tools used to handle these gases are also very expensive (British Petroleum, 2013).

c) Increased Demand

In Saudi Arabia, population growth is rising so high and there is increased demand of gas by households using gas cylinders. Due to increased demand, there is an increase in the gases' prices. Forces of demand and supply are applied to reach a high equilibrium of new price. The government of Saudi Arabia has, nowadays, set out new strict policies for those against the ban on invading public land and forests. There has been a positive response by most of the people to these new policies; as a result, they have adopted new methods of producing energy used in their families. The demand of

gases has increased due to ban; which has also led to the increased use of gas cylinders. Due to high demand of gases by the larger population, suppliers have increased the prices (Stevens, 2015).

d) climate conditions

In recent year, Saudi Arabia has faced heat wave in the country, which has reduced the water in river, thus reduced the supply of electricity. The reduced supply of electricity has led to increase demand of gas leading to increase in prices of natural gas (Al-Nagadi, 2007).

During summer periods, most of houses may lack electricity supply because of the fact that, it will be only supplied to the most important sectors which includes industries and hospital, whereas homes are left to look for alternative sources of energy. This new demand means people would be looking for gases as their source of energy leading to increase in prices (Al-Mutaz & Al-Namlah, 2004).

e) Increased Debt

By the end of the year 2018, the public investment fund took a loan of 11 billion from a group of global lenders. This is one of many loans taken by the Saudi government over the years. In 2016, Saudi Arabia started taking loans and from a zero-debt margin, they aroused to 68 billion dollars, which is known as one of the fastest loan rates ever experienced in the world. For the year of 2019, the country budget has a 30-billion-dollar deficit. The economic expenditure for the financial year was expected to reach 295 billion in 2018 while the revenue was at 260 billion despite the 11% growth margin. Saudi Arabia has been overspending their revenues since they discovered the gas reserves; the governments channelled the money into infrastructure such as highways and buildings. There is also overspending on the military. Saudi Arabia is next to China and USA when it comes to spending rate (Abusaaq et al., 2018).

Effects of Gas Price Increase in Saudi Arabia

a) Offsetting Loans.

The increase of gas prices can also be considered fair for Saudi Arabia since its markets do not withdraw or reduce the consumption and buying of the gases. The increase in prices would mean that Saudi Arabia would have more money from the gases reserves and this money can be utilized for the welfare of the country which would which could strengthen the country politically and economically. With a budget deficit of 30 billion, the money can be used to offset the deficit as well as to stabilize the economy. For any country, a stable economy would mean the people have high standards of living and get quality products in return of their money. The money could also be used to increase the monthly allowances which were implemented by the Saudi government for the Saudi Citizens. As a result, the increase in the allowance would reduce the risk factors of unemployment such as criminal events as impact of unemployment.

The country's loan could also be offset with the money from the sale of gases. The loan which stands at about 70 billion dollars can be considered a major risk for the country's economy. Living standard has reduced due to the loan and kingship since the options for improving the economy have limited. For any country, paying loan with greater interest is a huge burden which increases the price of product within the country and gases are no exception. Increasing gases' prices would mean the loans are reduced and the financial strain on the government reduced (Argaam, 2015). This money can also be used to open up employment opportunities for the young people in the country (Abdulla, 2015). Employment rates in Saudi Arabia have declined due to the economic strains mentioned above. Attracting foreign investors in the country will bring unemployment for the local people since they will bring their own labor force from their native lands which deny the local people the opportunity for employment (Argaam, 2016).

b) Environmental effects

Saudi Arabia has produced gas which contains hydrocarbons. Petrol, diesel and all other fuels are the product of hydrocarbons. In order to produce energy, the hydrocarbons are combusted, and they emit carbon dioxide and carbon monoxide into the atmosphere, when there is an incomplete combustion. The carbon gases produced are considered to be harmful to the environment. These effects could range from global warming to air pollution.

Global warming is caused by the production of gas. Manufacturing and producing these gases and its transportation in pipelines can cause the leakage of a gas called methane which is known as more dangerous form of gas four times stronger than carbon dioxide in the trapping of heat. There is no getting away from the hard fact that climate is changing day by day and it can be considered quite detrimental to life across the world, it does not only harm us, but has a great effect on our actions as well. The methane leaks must be regulated to at least 3.2 % to reduce the effect on the environment. There exist technologies in order to curb the emissions, but they are very expensive, which means that policies and regulations for the production of gas should be changed (Gary & Handwerk, 2005).

The combustion of gases causes production of Sulphur and mercury articles that could be negligible. The gases only become a threat when they are mixed with other gases in the environment (Argaam, 2016). Sulphur mixes with oxygen in the air and rain; therefore, it becomes sulphuric acid which causes dangerous rains. The rain causes soil degradation and roof tops are eroded (Stevens, 2015). In areas where the mining takes place, adverse health conditions are faced by the locals since the gases emitted are in high concentration, and can get mixed in the air they breathe. It is recommended to live about a mile away from any mining place. Processing, Mining, as well as maintenance activities cause the dust particles' release into air. In mining as well as quarrying, exposure to dust continues to be one of the major risks to workers' health and those living in surroundings of it (Yaro, 2010). Taking breathe in dust, like silica dust, coal dust as well as many other powdered materials, can play their negative role in damaging the lungs as well as airways. And these risk to the worker's and local people's health is greatly dependent on the nature as well as size of dust particles. And such exposure to the dust particles causes a great irritation to the skin, eyes as well as respiratory tract, and exposure for a very long time can play its role in leading to very serious and dangerous lung diseases which include silicosis (Yaro, 2010). The mining's environmental impact includes the environment's erosion, sinkholes' formation, biodiversity's loss, and soil contamination as well as surface water produced by various chemical from the processes of mining. Besides damaging the environment, the contamination of soil results from chemicals' leakage also play its role in affecting the local population's health (Kisko *et al.*, 2002).

There have also been reports on water contamination with the methane gas and the fuels when the pipes leak into water pipes. The water comes into contact with the methane also when the boreholes are drilled with machines which use the petrol. In its low levels, methane does not affect the health of people but its mixing with other components makes it more harmful. Groundwater near gas and oil wells has also been contaminated through fracking. When the piping is improperly constructed, the gases leak and contaminate the water. There have been many cases of contamination in Ohio and Pennsylvania due to ground piping of gases (Arzaghi & Squalli, 2015).

c) Employment opportunities

This is a positive effect of gas price increase since inflation rate has parallel rate of increase with employment rate as display by Philip's curve model. According to this model there exist an inverse relationship between the rate of inflation and the rate of unemployment. He argues that an increase in the inflation rate would lead to decrease in the unemployment rate (Alfares & Amer, 2011). This is the case of Saudi Arabia with the increase in gases prices as there exists a trade-off between the rate of unemployment and increase in the prices. To lower the unemployment's rates, there is a need to increase the inflation's rate since firms would seek to increase their production by employing more people in order to enjoy the high market prices, which would ultimately help them secure more profit.

The belove-mentioned figure has shown the relationship between inflation rate and unemployment rate, and can also be explain by the following factors:

a) Cost push factors

Labor unions will cause this automatic demand by advocating increase in wages and increase in workers because of increase in workload along with productivity of gas producing companies.

b) Demand pulls factors

Many incentives are gained by firms through increase in the gas prices which also leads to increase in employment rate. Firms will demand more workers to increase its products and will have a big market share.

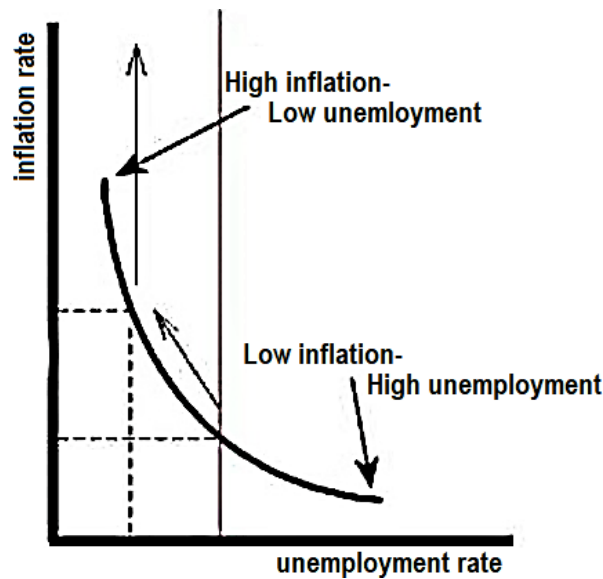


Figure 1. inflation and unemployment

Results and Discussion

- i. Saudi Arabia possess reserves in the eastern region which pays the way for economic development. These reserves ensure availability of gases throughout the year. The Kingdom enjoys recognition from most of the countries worldwide being the largest producer of gas and oi which makes Saudi Arabia a major shareholder in the oil and Gas world market because of its known quality products.
- ii. Saudi Arabia's economy has been greatly affected by unstable prices of oil and gas products. The unstable economy in the Kingdom has caused by decreasing Gross Domestic Products (GDP) that would eventually make the country fall into economic depression in the future ahead.
- iii. The main causes of increase in gas prices in Saudi Arabia are increased expenditure by the government along with high demand of these products, because it has restricted itself to domestic consumption only. The government of Saudi Arabia lack strategies to diversifying its market in order to make the gas products able to reach the global market. High taxation on gases has also made situation worse in this regard as their prices are increased.

Conclusion

To sum up in a nutshell, it can be concluded that the Saudi government should take effective initiatives in this regard to achieve prosperous economy. The attempt was made by this study in order to explore the cause and effects of gas price increase, and the study would also help the country's decision makers in achieving positive outcomes for economic growth and development. Following recommendations have been given which needs to be adopted by the policy makers in order to stabilize prices:

- i. Policy makers should make flexible economic policies, which can serve the current and future obligation, it involves making policies that are whole rounded and can suit the possible changes in the economy.
- ii. Diversification in the public sources of income, which involves engaging in projects that would lead to future returns, and can easily provide capital to government along with employment opportunities to the people.
- iii. Government ought to finance the development of idle resources which would ultimately increase the income's sources to the government.
- iv. There should be research and development in order to add value to natural gas by utilizing it to have new products while using various different technologies. Learning institutions are the researches' foundations and solution to problems caused by increase in gas prices. The government needs to help young researchers by funding their projects since it would enable sustainability of natural resources.

- v. Taxes should be equally imposed on all products which would help reduce the price because the imposition of heavy taxes is one of the major causes behind increase in the products' prices. Government needs to ensure that there is a shared cost and all sectors would not feel the weight of taxation and the government would reach the target revenue without disturbing any sector.

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