



The Reliance of the Saudi Economy and Adequacy of its Foreign Reserves with Reference to Oil Price Volatility: An Overview

Mohanned Alharbi*

Victoria University, Melbourne, Australia

Institute of Public Administration (IPA), Riyadh, Saudi Arabia

Abstract: This paper provides an important overview of the reliance of Saudi Arabia's economy on oil export revenues. Besides, it explores how oil production as natural resources plays a significant role in the Saudi Arabian economy. Moreover, it also highlights why the Saudi government pegged its currency to the US Dollar to avoid currency fluctuation and eliminate uncertainties in international transactions if oil prices highly fluctuated. As oil as a commodity is priced in the US dollar, this paper showed how oil price volatility impacts both the world economy and Saudi Arabia in particular. The role of oil revenue and accumulation of Saudi foreign assets will be explained, and its economic significance is highlighted. The current study is primarily explanatory in nature. The findings depict that oil revenues served in the country's first five decades to pay for government spending on much-needed infrastructure, but it was evident that the economy at some point had to diversify to avoid the deficit in the government budget when oil revenues shrink. The rationale for establishing the Saudi Arabian Monetary Authority (SAMA) was to effectively manage two things: the flow of current account surpluses and the foreign currency reserve. Finally, SAMA is the central bank in Saudi Arabia, and it has continued to play an essential role in the Saudi economy, especially in managing foreign reserves. This paper contributes to the literature by providing important details on Saudi Arabia's economy's reliance on oil export revenues. This paper shed light on how scholars can reduce the Saudi economy's reliance on oil price volatility by investigating how to manage the Saudi Foreign Reserves during oil price declines.

Keywords: *Foreign reserves, economy, assets, SAMA, oil export, revenues*

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INTRODUCTION

Saudi Arabia is one of the largest countries of the Middle East both in terms of population and geographical size. Its land area is 2.15 million km² and its population is around 33 million. Therefore, it is the Middle East's largest sovereign country and shares its national borders with seven other Middle Eastern countries, these being Iraq, Oman, UAE, Qatar, Kuwait, Jordon, Bahrain, and Yemen. Moreover, Saudi Arabia is situated along two seas, the Red Sea and the Arabian Gulf. Saudi Arabia is one of the world's fastest-growing economies and currently, the world's largest oil exporter.

Crude oil was discovered in Saudi Arabia, and within six years oil production began and this revolutionized the country's economy and brought into tremendous amounts of wealth. Income from oil production and exports was used to modernize the country's infrastructure and economy. For this reason, five-year economic plans were implemented to achieve economic targets that emphasized growth and diversification. These five-year economic plans have resulted in

*Correspondence concerning this article should be addressed to Mohanned Alharbi, Victoria University, Melbourne, Australia. E-mail: mohanned.alharbi@live.vu.edu.au, Harbimh@ipa.edu.sa

continuous economic growth in the Saudi kingdom. As already stated, Saudi Arabia is the world's leading oil-producing country, producing above a 10th of the global oil output and has ownership of a quarter of all global reserves. As a founding member of OPEC, Saudi Arabia has the upper hand in decision-making. According to [Mănescu and Nuño \(2015\)](#), the combined spare capacity of all other oil-producing countries is second to Saudi Arabia's. ([Nakov & Nuño, 2013](#)) assert that the kingdom is able to increase its production during events when supply disruptions occur so that the high demand for oil means that although its price falls from time to time, Saudi Arabia's economic security is not really threatened.

METHODOLOGY

Firstly, this paper presents an overview of the recent history of oil price volatility and the economy of Saudi Arabia from a historical perspective. The importance of oil price volatility and its impact on the world's economy in general and Saudi Arabia, in particular, are also explained as a second aim. Moreover, the strength of the Saudi currency, i.e., Saudi Riyal, is explained in terms of its exchange rates from the historical perspective. In addition, we discuss how Saudi foreign currency reserves and could benefit the country's economy when oil prices decline. Then we explore some different ways of how the central banks manage their foreign currency reserves. In the conclusion section, the main themes covered here are summarized. This paper motivates scholars to consider how it can reduce the reliance of the Saudi economy on oil price volatility by investigating how to manage and the Saudi Foreign Reserves during the oil decline prices.

OIL PRICE VOLATILITY AND THE WORLD ECONOMY

Oil is one of the most important traded commodities in the world. Any changes in the price of oil have far-reaching effects on the economy due to increased production costs or the uncertainty caused by price volatility. Oil is a US dollar-denominated commodity; therefore, increases in the value of the US dollar adversely affect oil importing countries ([Zhang, Fan, Tsai, & Wei, 2008](#)). It is essential to understand how the economy and various macroeconomic factors are affected by oil price changes. [Awokuse, Chopra, and Bessler \(2009\)](#) discuss how an increase in commodity prices can trigger increases in interest rates under a contractionary monetary policy. To test the hypothesis that commodity prices can forecast macroeconomic variables such as the inflation rate, Granger causality among commodity prices (CRB), Federal Fund rates (FF), inflation Consumer Price Index (CPI), money stock (M2) and Industrial Production (IP) are used. Results show that changes in commodity prices have, in fact, led to changes in policies maintained by the Fed. According to [Gormus and Atinc \(2016\)](#), oil is subject to inelastic demand, since people cannot easily switch from it to another source of energy at short notice. Therefore, any changes in oil prices have dramatic effects on the economy.

[Hamilton \(1983\)](#) reported a negative relationship between oil prices and economic output. He concluded that an oil price increase is an exogenous change and leads to a decrease in the output of the US economy. Other papers on the same topic also attempt to estimate the effect of oil price changes on macroeconomic variables. [Bachmeier, Li, and Liu \(2008\)](#) reviewed a range of variables to determine how oil price movements affect the economy and how these effects lead to changes in macroeconomic variables such as inflation, output, and monetary policy. Further, [Akram \(2009\)](#) found in his analysis, using structural VAR models, concluded that oil price shocks lead to large shocks to economic output. This relationship only holds true for oil prices and not for other commodity prices.

In terms of Gross Domestic Product (GDP), [Kilian \(2008\)](#) concluded that the effect of oil price shocks on GDP growth and inflation are essentially short-term. Furthermore, the source of the shock is important for determining the true extent of its repercussions ([Kilian, 2008](#)). In their paper, [Katircioglu, Sertoglu, Candemir, and Mercan \(2015\)](#) reported the link between oil price changes and macroeconomic factors such as GDP, CPI, and unemployment rate for 26 OECD countries. Using Durbin-H panel and co-integration tests, they demonstrated the long-term relationship between oil prices and macroeconomic variables. An oil price increase has a negative effect on the economy; however, this negative effect is greater on the CPI in the long run than on the unemployment rate and the GDP. In fact, the relationship between the unemployment rate and oil price changes might not be very visible, even in the long run, but this relationship might be more significant in future studies. According to ([Turhan, Sensoy, & Hacıhasanoglu, 2014](#)), as oil is a direct input for several industries that manufacture consumer products, oil price changes are thought to have a large effect on CPI. Statistics show that when the oil price increased from \$15/barrel in 1998 to \$140/barrel in 2008, the CPI rose from 164.30 to 214.82. Studies conducted by [Kiptui \(2009\)](#), [Misati, Nyamongo, and Mwangi \(2013\)](#), ([Kargi, 2014](#)) and ([Abounoori, Nazarian, & Amiri, 2014](#)) provide evidence for this positive relationship between oil

prices and CPI. Kilian (2014) also discussed how, through a number of different channels, an increase in oil prices could have an inflationary effect on the economy.

Following up on the importance of oil price shocks and their effect on macroeconomic variables, several studies have reported persistent effects on factors such as the unemployment rate, inflation rate, and real wages. According to Davis and Haltiwanger (2001), oil price shocks contributed to nearly 25% of the variability in the employment growth rate for manufacturing jobs in the US from 1972 to 1988. An increase in oil prices also slows economies due to interest rate effects (Balke, Brown, & Yucel, 2002). K. Lee and Ni (2002) reported how oil price shocks lead to lower output in industries relying heavily on oil. Sill (2007) also discussed how oil price increases have been followed by recessions in the US. Gronwald (2008) used the standard VAR framework and a Markov switching price specification to conclude that oil price shocks have had considerable effects on the real GDP growth rate on three occasions: 1973–74, 1979, and 1991.

In their paper on how the oil price affects inflation, Wu and Ni (2011) discussed existing literature on the relationship between oil prices and economic activity. Furthermore, a study from Ireland found that increases in oil prices led to increases in the inflation rate (Bermingham et al., 2008; Devia, 2019). Similarly, Jacquinet, Kuismanen, Mestre, and Spitzer (2009) discussed the relationship between oil prices and inflation in the European region and concluded that the long-term effects are complex as they depend on the origin of the shock. According to Castillo, Montoro, and Vicente Tuesta (2010), the higher the volatility of oil prices, the more volatile is the average inflation rate. Moreover, Lowinger, Wihlborg, and Willman (1985) stated that only large changes in the oil price lead to any significant change in the global interest rate.

Kallis and Sager (2017) discussed how the market forces of supply and demand determine oil prices, which in turn affect the economy. Furthermore, increases in oil reserves and production have been associated with decrease in US GDP due to the negative relationship between them. Moreover, monetary policy and inflation rates affect exchange rates. For instance, a nation that implements an expansionary monetary policy or high inflation rate will experience depreciation, leading to a higher cost for oil. Developing countries that have pegged their currency to the US dollar will also have to deal with depreciation due to the ‘dollar bloc’ theory (Erceg, Guerrieri, Kamin, et al., 2011).

Chen, Choudhry, and Wu (2013) expand on (Kilian, 2009) model in order to understand how an exogenous change in the financial market can lead to macroeconomic consequences. The researchers state how financial shocks are an essential determinant of oil prices and hence macroeconomic fluctuations. A positive oil supply shocks lead to an increase in the Index of Industrial Production (IIP) in the US, while a positive demand shock leads to an increase in IIP in all countries. If the positive aggregate demand shock is specific to the oil industry, then there is an increase in IIP only for the European countries. For the US and Japan, the effect is statistically insignificant. A positive financial shock leads to a decrease in IIP for all countries. In other words, as financial stress increases, there is more uncertainty, and this in turn, slows down the economy. It also leads to a statistically significant decline in the CPI for the US.

In economies that are highly dependent on oil revenues, oil price declines affect the performance of companies in these countries and undermine their efforts to meet their financial obligations. Therefore, these declines contribute to raising the rates of non-performing loans. As a result, the non-performing loans’ rates will reduce banking financial stability in oil exporting countries. A recent study by the International Monetary Fund (IMF) (International Monetary Fund, 2015) has shown that this is what happened in the oil-rich Arab countries, where a 1% reduction in oil price led to an increase of 0.1% in non-performing loans. In Saudi Arabia, in particular, Miyajima (2016) documented that non-performing loans in the banks steadily increased as oil prices grew at a slower rate.

The Reliance on Oil revenue Saudi Economy

The Saudi economy has exhibited changes due to the influence of various market variables over the past five decades. Historically, the economy was largely agricultural and trade-based, where incomes derived from grazing and other farming activities. Pilgrims travelling to or within Saudi Arabia to honour Islam, generated a high percentage of government revenue from trade and services. By the early 1970s the export of oil was booming and trading activities during the mid-1970s meant that the country could generate huge financial returns from ventures as oil prices rose (Kharina, Zulkarnain, & Naully, 2018; Said & Dickey, 1984). Based on this upswing in financial circumstances, various infrastructure projects were executed and importantly, the private sector was promoted through economic policies that supported the provision of loans and services and companies’ exemption from paying taxes and customs duties. As a result, the industrial sector in Saudi was enhanced and consequently boosted economic growth.

Oil production and export resulted in significant changes in the financial system of Saudi Arabia as well. Previously only very few Saudi people used banks, and the supply of paper money was limited. However, with the implementation of modern financial systems, the use of proper banking transactions significantly increased, especially after the establishment of the first national bank in 1938. Many local and foreign banks started operating in Saudi Arabia following the start of the National Commercial Bank of Saudi Arabia. The Saudi Central Bank was established in 1952 and was formally known as the SAMA. Before the establishment of SAMA, the Saudi Hollandi Bank was the de facto central bank of Saudi Arabia which operated from 1926 to 1952. SAMA oversees the Saudi Riyal and is also responsible for the management of national reserves that have significantly increased due to oil export revenues over the past few decades. SAMA is also responsible for supervising commercial banks in Saudi Arabia. The monetary and fiscal policy of Saudi Arabia is also controlled by SAMA. The revenues from oil exports became extremely significant after 1970 when oil prices started to rise significantly and increased by 400%. This resulted in a significant economic transformation, and the public sector became highly active with more airports, a more modern telecommunications system and large road networks being built. Therefore, strong infrastructure was built in Saudi Arabia with the help of accumulated national wealth and causing a reduction in the unemployment rate as well.

Oil as a major source of national income would have major repercussions for the economy of the nation. Research evidence suggests that a significant and positive relationship exists between growth rates and stability in oil exporting countries, in addition to leading to more diverse business activities on which the economy of a nation is dependent; however, oil revenues remain the major source of income in the Saudi economy (Alsamara, Mrabet, Dombrecht, & Barkat, 2017; International Monetary Fund, 2015). This is more rampant in situations where natural resources form the main source of national income. There is the possibility of a major economic risk occurring, particularly given that natural resources are finite and will be depleted at some point in the future. At the same time oil prices are dependent on the political and economic situation of a country.

It is against this backdrop, studies reveal that developing countries relying on primary exports as the key sources of income and foreign exchange revenue suffer a huge decline when prices drop. Depending too much on a commodity such as oil being is a major risk because commodities are subject to extraordinary volatility in the market when oil prices are at the mercy of selling behaviors. For instance, as in Table 1 the government income shifted to be highly dependent on oil revenues as it rose from SR 7.0 billion in 1970 to SR 319 billion in 1980, but a massive decline in oil prices from \$121 to \$24 occurred in 1986. This represented in fact a 72% decline in government revenues and this experience compelled the Saudi government to diversify the country's economic basis and expand other industries, even when the share of oil revenues still remained high (Saudi Arabian Monetary Agency (SAMA), 2011, 2016)

Table 1 *THE DEPENDENCY OF SAUDI ARABIAN BUDGET ON OIL REVENUES*

Year	Nominal oil price (In US\$ per barrel)	Annual government Oil Revenues (Millions US\$)	Crude Oil Production (Daily average-Million Barrels)	Crude Oil Exports (Mil- lion Barrels)
1970	1.3	1,896.53	3.8	1,174.17
1975	10.72	24,928.27	7.08	2,409.39
1980	28.67	85,148.00	9.9	3,375.72
1985	13.73	23,580.00	3.17	780.72
1990	20.82	32,839.47	6.41	1,642.42
1995	16.73	28,194.13	8.02	2,269.13
2000	29.81	57,179.73	8.09	2,282.38
2005	50.15	134,544.00	9.35	2,631.24
2010	77.75	178,737.33	8.17	2,425.09
2015	49.85	119,050.67	10.19	2,614.50

Source: Saudi Arabian Monetary Agency Reports

From the above discussion and numbers in Table 1, it is evident that high dependency on oil exports is a risky

venture when considered to be the main source of income. For instance, volatility in the oil industry exerts a negative impact on government revenues and expenditure as total income is influenced negatively by the changing oil prices, while liquidity is also affected by a reduction in revenue. The government, just like any other institution, incurs operational expenses, borrowing money and paying back loans with interest, among other costs. Firstly, a lack of revenue will lead to government debt. Secondly, in the bid to meet the set goals for a given financial year in line with sustainable development and specific industry goals, the Saudi government faces challenges in implementing such plans. They have to be abandoned or put on hold in times of poor government revenues.

The rise in oil prices that marked the 1970s started to decline during the mid-1980s, when prices dropped and so did the revenue (Ministry of Planning). Oil prices started to decline due to the cold war, and for the first time in its history, Saudi Arabia in 1983 experienced a current account deficit that was SR 23.8 billion. This led to a cut in government spending on public projects, and the private sector was also rolled back due to a lack of investment in public sector projects. The budget deficit increased and reached up to SR 70 billion by 1987. This led to a further reduction in government spending, and the budget deficit reached SR 34.9 billion in 1989.

However, the second Gulf War that erupted in 1990 following Iraq's misguided invasion of Kuwait led to a very significant increase in government spending, i.e., SR 275 billion in 1990 which led to a budget deficit of SR 160 billion in the same year-it was the highest in the kingdom's history. However, the economy started to boom again when oil prices rose again in 1996 and the budget deficit started to improve. Therefore, the GDP started to increase after a period of more than 10 years, i.e., by 8.6% in 1995 from SR 470 billion to SR 510 billion in 1996.

Table 2 *THE SAUDI ARABIAN GOVERNMENT REVENUES, EXPENDITURES, AND BUDGET*

Year	2011	2012	2013	2014	2015	2016	2017
Actual Government Revenue	298.08	332.64	308.36	278.50	164.24	138.51	184.40
Actual Government Expenditure	220.45	232.88	260.27	295.97	260.83	221.47	248.00
Budget Deficit/Surplus	77.63	99.76	48.09	-17.47	-96.58	-82.96	-63.60

Source: Saudi Arabian Monetary Agency Reports

Overall, the oil production industry in Saudi Arabia tends to experience higher government deficits when oil prices drop and this subsequently impacts on the level of government spending and vice versa when oil price hike see Table 2 A 'knock-on' effect is felt within the private sector, which depends on government spending for expansion and hence job creation. However, it should be noted that Saudi Arabia may have the ability to survive oil price fluctuations in the short-term as it can borrow from its US\$737 billion sovereign wealth fund for revenues. In the long-term, the nation would require close to US\$104 billion to ensure a balanced budget. This is evident from the 2015 reports, which show the government running a deficit of approximately \$98 billion (15% of GDP) where the IMF estimated a budget deficit of 20% of GDP (approximately \$140bn). Hence, research has reported on Saudi Arabia's economy diversifying exports and revenues in order to mitigate oil volatility risk. In 2015 the government spent approximately \$9.8 billion in a military build-up which made the Kingdom the leading importer of defense equipment.

Following the reduction in oil prices in the years 2014-2015, the Kingdom maintained its oil prices in order not to flood the market with oil, so that it could be in a position to beat competitors. Oil output increased from 9.7 mb/d (July 2014) to 10.6 mb/d (November 2015). Thus, oil prices dropped worldwide in the second half of 2014 and this led to fiscal deficits as well as foreign exchange reserves decreasing. This event was in the completely opposite direction of previous patterns where revenues increased, and fiscal surpluses increased as well as reserves.

Oil revenue and Saudi Arabia's Foreign Assets Accumulation

Macroeconomic variables affect the economic stability of a nation. For this reason, we continue to observe a high level of fluctuations in macroeconomic variable effects due to the Kingdom's high dependence on oil. Hence, any economic activities in the mid-long-term will depend on the behavior of oil prices. This would affect government spending based on the amount of revenue realized. On those occasions when revenue drops, the government is forced to engage in debt financing or employ previously saved/acquired assets to overcome complications arising from fiscal

policy; this strategy is meant to smooth spending during times when the revenue falls below predicted or expected amounts/levels.

Countries hold reserves for a number of reasons, and these mainly involve precautionary measures (M. J. Lee, 2004; Durdu, Mendoza, & Terrones, 2009), for example, to protect against volatile capital flows and avoid the need to resort to funding from the IMF (Stiglitz, 2006). Over the last two decades, some countries have accumulated their reserves as insurance against financial crises (Jeanne, 2007). The share of global reserves held by Asian countries has increased over the years, of which the majority is held in the form of US treasury bonds.

To avoid current account deficits, countries have maintained foreign exchange reserves that have served the domestic savings to guard against private sector capital flight. There is no doubt that holding such reserves provides a form of self-insurance (Obstfeld, Shambaugh, & Taylor, 2010). Countries also want to ensure that their domestic currencies are not freely floating and, hence, need to hold reserves for events when shocks disturb the exchange rate dynamics. After the financial crisis of 2008–09, the importance of holding foreign reserves was attributed to the way countries can hold reserves to ‘lean against the wind’ in the case of an appreciation. The interconnectedness of global financial markets is believed to have led to the spread of the 2008–09 financial crisis. Despite the fact that emerging economies had a good stock of international reserves before the crisis hit, they chose to let their currencies depreciate due to the fear of losing their reserves arising from the floating regime. The aim could have been to achieve or at least maintain competitiveness in the global market during turbulent times. Aizenman and Hutchison (2012) discussed how the financial crisis of 2008–09 was followed by a global recession, as depreciated currencies were of no use to emerging economies because of decreased global demand.

Some leading oil-producing countries have low break-even prices (e.g., Norway, Abu Dhabi, and Kuwait) indicating that the break-even price for the Kingdom was the highest within the Gulf region. The three countries named above are said to share the following three features: (1) their revenue, government spending and wealth funds are huge, (2) the countries maintain a discipline on how they spend and save their revenues reflecting the existence of fiscal policy frameworks that adhere to strict rules; and (3) the investment of assets and funds are handled by recognized independent investment authorities who provide well informed, and professional advice on how they would be managed to avoid downturns during dips in oil prices. All the countries depend on oil revenues but Kuwait and Abu Dhabi do this at a higher level when compared to Norway. But even when they drew on their sovereign wealth funds and investment, three key factors are observed and upheld: (1) sustainability, (2) following rules, and (3) decoupling spending patterns from oil revenues. It should be noted that only 25% of revenue is considered to come from oil revenue in Norway.

Saudi Arabia’s government spending is very high. Yet sustainable policies and rules that govern the utilisation of sovereign wealth assets and income lack. For these reasons, the Kingdom needs high oil prices to harmonise books financially. Therefore, the sustainability of the accumulated assets in the wealth fund is in limbo. This study provides some suggestions on reforms that could be implemented to position the Kingdom in a fiscal operation area to fit into other groups of countries that have been successful in doing this, such as Kuwait, Norway, and Abu Dhabi.

The Saudi Arabian Kingdom spending shifts between the rise and fall of oil prices such that a rise in oil prices increases government spending while a drop leads to a reduction in government spending. In 2004, the capital expenditure was \$73bn, but there was a rise in capital expenditure from 2005 to 2013 onwards due to a rise in oil prices, reflecting an expenditure of \$83bn. A lot of the funds were said to have been directed towards infrastructure improvements on both the physical and social sides. Nevertheless, a drop in oil prices will automatically trigger a reduction in expenditure. This is a lucrative strategy towards reducing fiscal pressure in the medium-term and also stabilising government expenditure. Demographic trends due to present expenditure trends influence the direction and level of long-term spending pressures.

According to the SAMA records, the total foreign reserve of the country was around SR 1.876 trillion in mid-2017. Figure 1 shows the largest revenues that prompted increases in the foreign assets of Gulf Cooperation Council (GCC) countries, including Saudi Arabia, particularly between 2011 and 2013. SAMA has been following a conservative low-risk investment strategy by investing in US bonds, as 85% of Saudi foreign reserves are invested in US fixed income securities (Bahgat, 2008). In contrast, a major drawback of this hedging approach is that the Saudi government has invested heavily in US bonds and other securities such as stocks. The bond liquidation process, if and when required, will take a considerable amount of time and incur additional costs, particularly in the case where a large number of bonds, or high-value bonds must be liquidated (Alhumaidah, 2015).

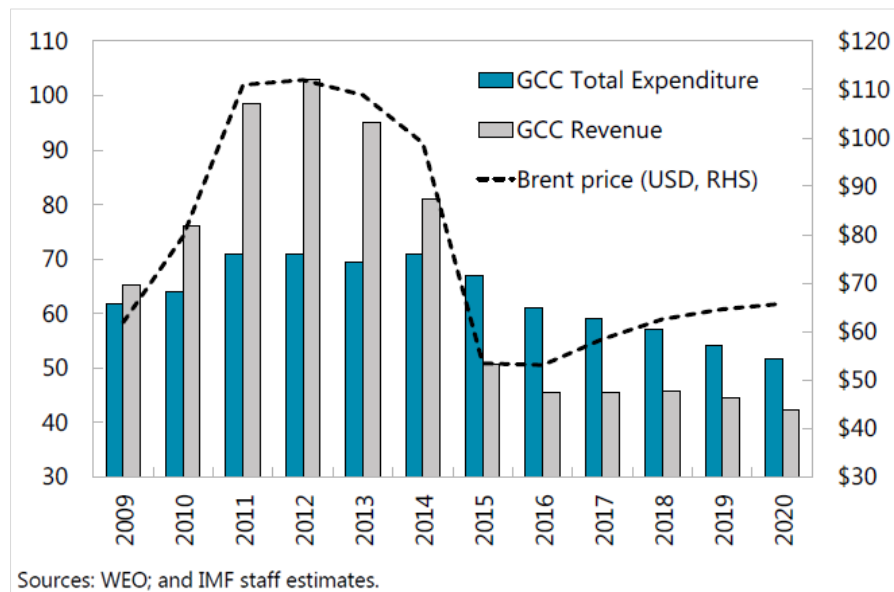


Figure 1 GCC Government Revenue and Expenditure

The SAMA records show how the reserve assets were distributed at the end of July 2017. 67% of the assets were invested in securities abroad, 31% in foreign exchange and deposits, 1.6% in special drawing rights, 0.3% in the IMF and 0.1% in gold reserves (Saudi Arabian Monetary Agency (SAMA), 2017). The IMF statistics show that the Saudi Arabian current account faced a deficit after the negative oil price shock that occurred at the end of 2015. This reduced SAMA net foreign reserves from \$724 billion to \$609 billion, thus representing a decrease of \$115 billion (International Monetary Fund, 2016). This shock altered the Saudi current account from a surplus to a deficit and caused the country to lose around one-third of the value of its foreign exchange reserves over the last 2.5 years (International Monetary Fund, 2015).

In early 2014, SAMA had \$800bn of accumulated assets while there was \$750bn in the second quarter of 2014. The assets held by SAMA are considered to be a buffer for Saudi Arabia when oil prices dip, and revenue is reduced. This may be safe in the short-term but in the long-term, the Kingdom could face challenges. For instance, the Saudi budget in 2015 was one involving expenditure totaling \$230bn (860bn Saudi riyals) which translates to a third of the foreign exchange reserves held by SAMA while the revenue was against \$190bn (715bn Saudi riyals) in revenue. This deficit of \$40bn, realized after revenues reduced by 16%, was not as severe as that felt in 2014 when SAMA had to raise finance due to a huge deficit. This was caused by actual spending exceeding the revenues.

Saudi Foreign Currency Reserve and its Benefit to the Economy

As one aspect of Saudi foreign assets, Foreign Currency Reserve (SFCR) revenue windfalls from oil exporting have been the main source of revenue accumulation for the Saudi government. For instance, 2005-2008 and 2011-2013 saw the Kingdom enjoy high oil prices where approximately \$750bn were accumulated in foreign reserves. The role played by all countries' central banks is well known and recognized, particularly in the context of managing foreign reserves. Foreign reserves are defined in various ways depending on how the term is being used and in what scenario. The IMF defines foreign reserves as assets, assets denominated in foreign currency, available at all times and monitored plus controlled by designated monetary authorities, which in most countries is the Central Bank.

Regardless of the economic status of a country (developed or developing), foreign reserves are a paramount macroeconomic element since bolstering of the reserves promotes the confidence held in the financial steadiness of a nation. Both types of countries experience external shocks; hence, the macroeconomic positioning of a nation depends on the stability of the foreign exchange reserves which are considered to be a pillar of stability. The International Monetary Fund (2013) reports that the role played by foreign exchange reserves enables the direct financing of external imbalances, management of balance of payments, and the administration and management of exchange rates since they influence international trade.

Foreign reserves are made up of foreign assets (those that are marketable) that can be converted into various foreign currencies. Some examples include reserve positions in the IMF, foreign securities, deposits in foreign banks, monetary gold, and special drawing rights. For countries that do not want to adjust exchange rates and insist on constantly fairly priced exchange rates, foreign exchange reserves are viewed as critical. They are considered to be an integral part of a country's wealth. The procedure of sterilizing bonds (i.e., increasing the sum of domestic currency to sterilize the effects of local currency) allows governments and their appointed authorities to gain foreign currency reserves. A proper sterilizing of bonds procedure would help the central bank reduce net assets and thereby indicate the total reserves are not a reflection of net national assets. According to [Dominguez, Fatum, and Vacek \(2010\)](#), foreign currency reserves in most cases are held as foreign government bonds that attract interest rates as well as foreign exchange risks. This is because the foreign currency reserves in central banks are held in foreign currencies. It is up to any central bank's discretion to decide on how to proceed with foreign exchange reserves investment and how these should be managed.

[Detemple and Rindisbacher \(2010\)](#) indicate that the two main approaches used by most central banks include the assumption that an already existing structure that is appropriately functional would not need to be changed and can operate as is. Nevertheless, this would depend on a number of issues including (1) the role to be played by the foreign exchange reserves in maintaining local currency (for keeping its value with the pegged currency or when it is floated as well) and any other related factors/elements which would be included in the balance sheets of any central bank; (2) if the foreign exchange reserves are essential in the management of national monetary policy. In the event that it is the case, the details will be reflected in the central bank's financial report; (3) the role to be played by the foreign exchange reserves in protecting risks relative to the hedging responsibility of the government. If they have a primary role, then it becomes imperative for a government to own foreign currency reserves; and (4) establishing how the operations of the central bank would be funded, which in most cases is through the foreign exchange reserves, ([Detemple & Rindisbacher, 2010](#)).

The management of the foreign exchange reserves therefore, as mentioned in all discussions above, is the responsibility of the central bank of any nation. The responsibility could be directly awarded to the central bank, or the institution is assumed to act as a government agent. Hence, the IMF or systems of international currency reserves would consider the institution/person responsible for managing the foreign exchange reserves as the owners. In this sense, any central bank will make decisions and monitor various domestic currency remits such as intervention "in countries like Japan", regarding exchange rate policy and the dollarization system. Decisions made will have either positive or negative consequences on the national reserves based on the rules and frameworks put in place to govern the management of foreign exchange reserves. Coordinated action by governments and their central banks will then take precedence over the legal ownership of reserves ([International Monetary Fund, 2013](#)).

From the discussions above, it is evident that the use and purpose of foreign exchange reserves make them of paramount importance to the economy of a nation. [Borio, Ebbesen, Galati, and Heath \(2008\)](#) further provide explanations about the usefulness of these reserves. Firstly, interaction with the foreign exchange market is important, especially how this interacts with the domestic currency exchange rate, effects of maintaining or market conditions. Secondly, where external financing is not available, how payment of goods and services takes place needs to be considered. Thirdly, the provision of liquidity support to key sectors within the economy, such as the financial sector as well as approval for this, will have to be factored in. Fourthly, there is the issue of taking responsibility for reducing the costs of external financing and the possibility of a currency crisis. This can be done by ensuring the promotion of investor confidence in a nation being able to uphold its foreign currency obligations. Fifthly, the management of the external debt of the country will thereby enable making payments on behalf of the government. Sixthly and lastly, support is also needed for liquidity management via currency swaps, managing national monetary policy, and the administration of foreign currency claims.

According to the [International Monetary Fund \(2013\)](#), further details are available on the primary role that foreign exchange reserves play in nations' economies. It is indicated that these reserves are available for governments in the event of emergencies and national disasters. Each nation has its justifications for holding foreign reserves and will therefore balance the above reasons based on their priorities. Key pointers that would determine a country's proper management of foreign exchange reserves is reflected in its ability to pay its financial obligations how financially ready the economy is to handle any uncertainties, and finally the financial rules and/or frameworks that govern the management of the reserves in any country.

Managing the Foreign Currency Reserve

Foreign exchange reserves equate to foreign assets that belong to the people of a nation but are governed by monetary authorities appointed by the leaders of a nation. These assets have to be available for public use as and when required. [Nugée \(2000\)](#) defines the management of national foreign exchange reserves as a consolidation of techniques, procedures, management procedures, and control mechanisms pooled together to acquire a sizeable level of foreign exchange reserves. The levels of risk have to be observed such that they balance up with the number of reserves acquired versus the level of risk that goes with it. These have to meet the requirements of the IMF. The ability of a nation to resist and effectively manage uncertainty depends on how well the foreign reserves are controlled and administered. Evidence has emerged from countries where the management of foreign exchange reserves was not effective enough to counter shocks within the system during a financial crisis as well as managing risk. [Nugée \(2000\)](#) asserts that reputational risk can be increased based on how a nation manages risk relative to foreign exchange reserves as they will lead to incurring high financial costs.

In this sense, it is important that managing foreign reserves adheres to: (1) attaining a sustainable risk-averse level of foreign reserves; (2) controlling of three risks: liquidity, market and credit; and (3) being based on the limits of risk, acquiring a particular level of yield. The economic and monetary policy docket of a country also involve the management of foreign exchange reserves. These policy dockets operate on set objectives which the reserves are supposed to help to achieve, and this includes achieving high amounts of reserves, which also have to be invested wisely in order to yield returns. Globally, most countries own foreign currency reserves, but the objectives of owning them differ between countries. Before deciding to own foreign reserves, it is a requirement that each government draws up its reasons, goals, and processes of managing the reserves. For instance, in some cases, reserves are not for investment but just a backup plan for local currency. This is most evident among those countries that mainly invest in gold reserves. During World War Two and in line with the Bretton Woods system, the gold standard was popular.

Some other countries position the foreign reserves instrumentally for monetary gain and therefore touch on the exchange rate policy of a nation. Most countries that take this line set up fixed exchange rates to protect the local currency. The trading here would be between local currency exchange rates and the foreign exchange rates, which impact on interest rates and local currency markets. Hence, it is a popular option for countries that want to develop their domestic markets. Even in fully developed markets, some countries adopt a floating exchange rate for the local currency/money market. This is not popular in the foreign exchange market where countries could freely trade in their own currencies.

Governments also own and maintain foreign reserves so that they can make money to service foreign currency responsibilities. Any country that has foreign debts definitely requires foreign currency to enable payments. This responsibility of governments can be achieved through the sale of domestic/local currency. However, [Nugée \(2000\)](#) argues that a number of reasons account for some governments not following this format. They include: (1) at the time when foreign currency is necessary, the exchange rate and foreign exchange market may not be operating at a suitable value; (2) in situations where a large sum of foreign exchange transactions need to take place, upsetting of the foreign exchange market could arise; (3) risks are high on foreign exchange reserves; and (4) the effect is also felt on negative national confidence, considering that the nation issues the bonds and also lends them out, rating agencies are affected, and the cost of borrowing in foreign currencies rises.

Other countries use returns from foreign exchange reserves to pay for foreign state expenditure. This is common among countries that hold foreign accounts, have to make payments in foreign currency but also fund these activities from returns realized from foreign exchange reserves. Seasonal fluctuations, irregular inflows, and outflows can account for this. Furthermore, profits can be obtained from foreign reserves when they are maintained as investment funds. However, this is dependent on what role a country thinks its reserves serve to cover, for instance, considering the role of reserves in enabling monetary stability and protection. [Nugée \(2000\)](#) continues to point out that reserves can also be used for making a profit which could be a logical policy in some countries for a number of reasons including but not limited to: (1) in situations where local economies are unable to absorb further consumption in the absence of overheating; (2) when the economy of the country is beset by declines in profit-making; (3) early or advanced preparations for unpredictable futures, for instance, when natural resources are in danger of being depleted; and (4) when small nations wish to diversify their asset base. Global foreign exchange reserves operate on various frameworks based on the objectives of why they are held, their management, and their structure.

Debates have ensued about the economic prowess of a country (developed and developing) and the sizes of foreign exchange reserves to be held. Claims vary from there existing fewer than required foreign exchange reserves globally to that the present sum is lower than it should be. This point of view is more rampant among countries that view a large sum of foreign exchange reserves as being appropriate to meet their economic objectives. This does not mean that the foreign exchange reserves should be in excess or too little as extremely large or too low quantities can also expose a nation to risks. However, determining the ‘correct’ amounts or sums of the reserves is still a challenging matter.

Two main factors have to be taken into account when matters relating to the optimal size of reserves arise. One is the intended use of foreign exchange reserves and the minimum level that would be needed to meet the objectives of the reserves owned. These two key elements must be dealt with before moving forward with matters relating to administration and control. The second is an appropriate analysis of the costs incurred in the financing of the foreign reserves. In this case, the costs of accumulation of the reserves become of paramount importance. The above elements allow the control of the amounts of reserves such that they are not over and above the stipulated or manageable amount and that they are also not below the required level. However, it is still argued that determining an accurate level of reserves is still a challenge, and therefore nations tend to maintain a particular margin that would suit both the lower and upper limits – a balance of levels. [Jeanne and Ranciere \(2011\)](#) argue that some governments still operate foreign exchange reserves without limits, especially those that they should not go above.

SUMMARY AND CONCLUSION

This paper provided important details on the reliance of Saudi Arabia’s economy on oil export revenues. Besides, it explored how oil production as natural resources play a significant role in the Saudi Arabian economy. As oil as a commodity is priced in the US dollar, this paper showed how oil price volatility has an impact on both the world economy and Saudi Arabia in particular. The role of oil revenue and accumulation of Saudi foreign assets has been explained, and its economic significance highlighted as well. The oil revenues served in the country’s first five decades to pay for government spending on much-needed infrastructure, but it was evident that the economy at some point had to diversify to avoid the deficit in the government budget when oil revenues shrink. The rationale for the establishment of SAMA was to effectively manage two things: the flow of current account surpluses and the foreign currency reserve. Finally, SAMA was the second central bank to start operating in the Middle East, and it has continued to play an essential role in the Saudi economy, especially in terms of managing foreign reserves. The SAMA needs to understand the dynamic behavior of both oil and currencies in order to be able to choose the optimal currencies composition to construct the FCR portfolio and then manage this portfolio effectively. Finally, this paper shed light for scholars to consider how it can reduce the reliance of the Saudi economy on oil price volatility by investigating how to manage the Saudi Foreign Reserves during the oil decline prices.

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