

Oil Overdependence and Dutch Disease, KSA Evidence

**¹ Ishtiaq Ahmad Bajwa, ² Muhammad Ather Elahi, ³ Waleed Rafi, ⁴ Farooq Ahmad Bajwa*

^{1,2,3} College of Business Administration, Imam Abdulrahman Bin Faisal University, Kingdom of Saudi Arabia

⁴ Rifa International University, Lahore, Pakistan

Received 02 April 2019, Accepted 06 August 2019

ABSTRACT:

In the context of recent oil prices fall and resulting budgetary problems faced by KSA, it is very interesting to examine the country's overdependence on oil revenues. In this paper, we examine whether extreme oil dependence for Saudi Arabia is the symptom of Dutch Disease. We first provide a brief review of the literature on Dutch Disease and the natural resource curse. We then discuss the symptoms of Dutch Disease, which are discussed in the literature, with special reference to KSA. We presume that, while KSA has all of the symptoms, the diagnosis of Dutch Disease remains to be confirmed. However, recently the policymakers are taking new initiative like Vision 2030 which will open the doors for diversification to non-oil based economy. Under the Vision 2030, the Saudi government is providing the incentive to the private sector for the establishment of a well-diversified manufacturing sector and value-added supply chain. It appears to be a timely and right directional effort.

Keywords: *Dutch Disease, Recourse curse, Oil revenue, Overdependence, KSA*

INTRODUCTION

The common perception that economies with abundant natural resources are better placed for high economic growth has been under investigation in economic literature. Though economic development through petro-dollars apparently provides some credence to this perception, there is ample evidence on the contrary as well. Some recent and past incidents indicate that countries gifted with huge natural resources have witnessed abrupt growth patterns. Hence, extraordinary resource possession is not a guarantee, but an opportunity for a better economy (Borkó, 2007).

When the abundance of natural resource becomes a curse instead of a reverence, the phenomenon is referred as "Dutch Disease" in the literature. This phenomenon was originated in

1960s, when the Netherlands found huge reservoir of natural gas in the North Sea. Netherlands received large capital inflows as a result of the increased export revenues, thus the exchange rate appreciated due to the increased demand for the Dutch florins. This led to a trouble for Dutch manufacturers to compete in the international markets. So, we can say that the Dutch disease hypothesis is the notion when an upward movement in resource prices or a raise in output level lead to the appreciation of real exchange rate that result in a decline in the share of manufacturing sector, an increase in the macroeconomic volatility and a decrease in long-run growth (Oomes, 2007).

The Dutch disease is still relevant since it is currently affecting many countries around the

*Corresponding Author, Email: tabajwa@iau.edu.sa

world (Rodriguez, 2006). Especially the KSA's overwhelming dependence on oil makes a textbook case for exploring the symptoms of Dutch disease in recent times. In the next Section, we review anecdotal evidence on Dutch Disease and its linkage to the depletion of natural resources. Section III evaluates Dutch Disease's symptoms i.e. (1) real appreciation, (2) a lackluster manufacturing sector, (3) a booming services sector, and (4) rising wage level etc. for KSA

Literature Review

The Term Dutch Disease originates from the effect of a natural gas boom in the Netherlands in the 1960's, owing to natural gas discovery and the resultant capital inflows (Magud and Sosa, 2010). As the Dutch exchange rate grew stronger, manufacturers and agricultural producers found it increasingly difficult to compete in international markets. Dutch disease has been experienced in countries that have either discovered vast reserves of natural resources or a sudden spike in their most precious export commodity. The resulting spike in foreign exchange leaves the country economically uneven and structurally vulnerable. In nut shell, the sharp inflow of foreign funds, usually due to the sudden discovery of a (tradable) natural resource or an increase in resource price, may have a severely negative impact on a country's economy. The negative effects take roots from appreciation in real exchange rate, a temporary increase in current income and inefficient labor mobility to the resources sector. Resultantly, the global competitiveness of other tradable sectors reduces and the exports of natural resource crowd-out other exports (Krugman, 1987). As a result, the country faces the threat of a de-industrialization process.

There exist multiple studies on the linkage of economic fundamentals with a sudden increase in wealth owing to discovery of natural resources. Mostly these studies focus on the dark side of accumulated wealth that how it discourages economic efficiency and depletes natural resources in the long run. Further, Corden and Neary (1982) using the case of small open economy illustrates how the asymmetric growth in booming sector (usually the extraction of natural resources but their analysis is equally good for booming sector of any kind e.g.

information technology in early 2000s) affects resource allocation and income distribution even in the medium-run. They showed that a boom in export of a single commodity makes exports of other commodities less profitable, both by deviating resources away from other traded goods sectors and appreciating exchange rate. On similar lines, Hamilton and Hartwick (2008) shows that the quantum of traditional export shrinks in favor of oil exports with an exogenous increase in known natural reserves (e.g. oil). They further conclude that Dutch disease symptoms are stronger if the import of capital goods for local production decline after the discovery of natural reserves.

Beside local discoveries of natural resources like oil, a significant increase in oil prices or monetary disinflation are also the possible sources of Dutch Disease [Buiters and Purvis (1980)]. They explain how monetary disinflation reduces real balances, pushes interest rate on the rise and lowers nominal exchange rate that leads to real appreciation in the short-run and a decline in manufacturing sector output. Similarly, a rise in international oil prices and/or oil discoveries lead to larger inflows of foreign currency and/or an artificial increase in current income that cause real exchange rate appreciation and decline in manufacturing output.

Bruno and Sachs (1982) solve a dynamic perfect foresight equilibrium model of Dutch disease that incorporates capital mobility in the long-run, international capital flows and intertemporal optimization by households and firms. They find that oil exports ultimately reduce long-run production of other exportable goods and improve terms of trade on final goods. The size of this effect depends on how the government redistributes gains from oil exports to the private sector.

There is no doubt that vast oil reserves have helped enrich many countries' economic development. Alkhathlan (2013) found evidence suggesting that Saudi Arabia's gross domestic product was substantially boosted when it struck oil. Between 1971 and 2010, the economy flourished. The economy has received substantial windfalls from its immense oil reserves over the past decades. However, an overdependence on one particular resource (e.g. oil) tends to create uneven economic growth. Consistent with Dutch disease, many oil-exporting countries have faced

a lack of manufacturing output when oil reserves and oil prices were high (Ismail, 2010). Evidence suggests that countries that are more open to the global economy are more susceptible to sudden fluctuations in oil supply and price. Manufacturing sectors often bear the brunt of this phenomenon, as output collapses and the economy shifts to over-dependence on revenues from oil exports. The main cause is the strength of the domestic currency, which makes it more expensive for manufacturers to buy factors of production. At the same time, foreign buyers fail to afford goods manufactured in a suddenly wealthy country with a stronger currency. Thus, manufacturing output is reduced when an economy faces a Dutch disease.

Manufacturing is not the only sector affected. A similarly negative effect was found in the agricultural sector in oil-exporting Middle Eastern and North African countries by Apergis et al. (2014). The study used annual data between 1970 and 2011 indicating that oil rents have negative impact on agricultural production in this region. A boost in oil prices causes a systemic and long-term shortfall in the value added by the agricultural sector. Primarily, agricultural products are sold abroad at market prices. When the currency strengthens, the agricultural produce becomes unaffordable for the rest of the world; consequently, exports drop.

Benkhodja (2014) analyses the two factors that cause Dutch disease: boom and windfall. Windfall is a sudden spike in commodity prices, whereas boom is a sudden spurt in commodity production. In both cases, non-tradable sectors benefit from a rise in income and expenditure on a domestic level. Transportation, utilities, and service sectors can expect higher sales as the aggregate income of the population rises. Since prices are set locally, shifting foreign exchange has no impact. In fact, a sudden rise in income boosts demand for local services.

Overall, the effect of over-dependence on oil and the Dutch disease in countries like Saudi Arabia has been negative. As oil prices fell in the past two years Saudi Arabia was struggling to manage fiscal reserves (Andrianova, 2016). Oil has certainly made major oil exporting countries wealthier but has left them structurally weak and intrinsically volatile. Policymakers must implement strategic reforms to help counteract the effects of long-term Dutch disease by diversifying the economy (table 1).

Diagnosing Dutch Disease in KSA

The abundance of natural resources was once considered as a recipe for economic development in countries like Australia, the US and Canada (North, 1963). However, the champions of sustained economic growth and development during the last four decades including Japan, Korea and Taiwan are resource-poor nations. On the other hand, the majority of the resource-rich nations like Argentina, Mexico, Peru, Saudi Arabia and Venezuela are failed to impress the world with their economic development. These resource-rich nations have had lower than average GDP growth in the said period Mikesell (1997) (table 2).

This section specifically deals with symptoms of Dutch Disease in the Kingdom of Saudi Arabia (KSA) as follows:

Resources Dependency

The most important indicator of Dutch disease is resource dependency. In the case of Saudi Arabia the country is highly oil dependent almost 80% of its revenue is coming from oil (Alshahrani, 2016). The figure below shows the comparison of global oil price and Gross Domestic Products for Saudi Arabia during the period 1980-2016 (figure 1):

Table 1: Some Country based studies on Dutch Disease

Study	Country Investigated	Findings
Does the Canadian economy suffer from Dutch disease? (Beine, Bos, & Coulombe 2012)	Canada	The study investigated the Dutch Disease phenomenon in Canadian economy. The authors estimate the separate impact of the US and Canadian currency components on the shares of manufacturing employment in Canada and concluded that during 2002 to 2007 a significant employment loss in Canada due to exchange rate developments was related to Dutch disease phenomenon.
Diagnosing Dutch disease: does Russia have the symptoms? (Oomes and Kalcheva 2007)	Russia	The study examines the case of Russia for Dutch disease. The main motivation of study was the developments in the Russian economy, being a large oil and gas exporter. The study concluded that, although Russia has all of the symptoms, still the existence of Dutch Disease is not confirmed.
Dutch Disease in Saudi Arabia? (Rodriguez, 2006)	Saudi Arabia	The study investigated presence of Dutch disease in KSA. Although the country possesses all the symptoms of Dutch disease however due to some of developmental policies of the government, prevented many Dutch Disease related problems from occurring in KSA.
Escaping the resource curse and the Dutch Disease?: when and why Norway caught up with and forged ahead of its neighbors. (Larsen 2004)	Norway	The study focuses on discovery of oil in Norway during the early 70s and possible symptoms of Dutch Disease. The study discussed that although in 90s some symptoms of Dutch Disease were observed for country. But due to good macroeconomic policy and political and economic institutions Norway escape the Dutch Disease.
Addressing the Natural Resource Curse: An Illustration from Nigeria (Sala-i-Martin and Subramanian 2003)	Nigeria	No evidence the Dutch disease, the real exchange rate was insensitive to oil price.
Oil Revenues and Dutch Disease in Saudi Arabia: Differential Impacts on Sectoral Growth. (Looney 1990)	Saudi Arabia	The paper examines Saudi Arabian real exchange rate appreciation and its link to manufacturing sector with particular focus on the Dutch Disease. The found the Dutch Disease effects across a wide spectrum of activities in KSA.

Table 2: Key Dutch Disease indicators

Indicator	Direction of Effect	Case of KSA
Recourse Dependency	High dependence on oil or gas or other natural recourse. Furthermore increase in investment in the oil or other natural recourse sector.	Highly oil dependent in revenue
Exchange Rate	Appreciation of real exchange rate.	The REER remained appreciated especially in oil boom periods.
Manufacturing Sector	Slowdown in manufacturing sector growth	Extremely low or no manufacturing sector growth except oil sector.
Service Sector	Higher growth rate for services sector compared to the manufacturing sector.	Relatively high growth in services sector
Labor Sector	Higher overall wages. More precisely, higher average nominal wages in the natural resource sector.	Local labor mainly concentrated in high paid public sector. Private or low paid jobs occupied by non-Saudis.
Inflationary Pressure	Rise in government expenditures, which results in domestic inflationary pressures.	No inflationary pressure due to price control of oil and energy coupled with government subsidies.
Terms of Trade	Generally depending on oil or other natural resource as mainstay of export. Whereas, import includes mostly finished goods and luxuries.	More than 80% of export oil based. Importing heavy vehicles, luxuries and electronics etc.

Sources: Oomes and Kalcheva (2007); Mardaneh (2015)

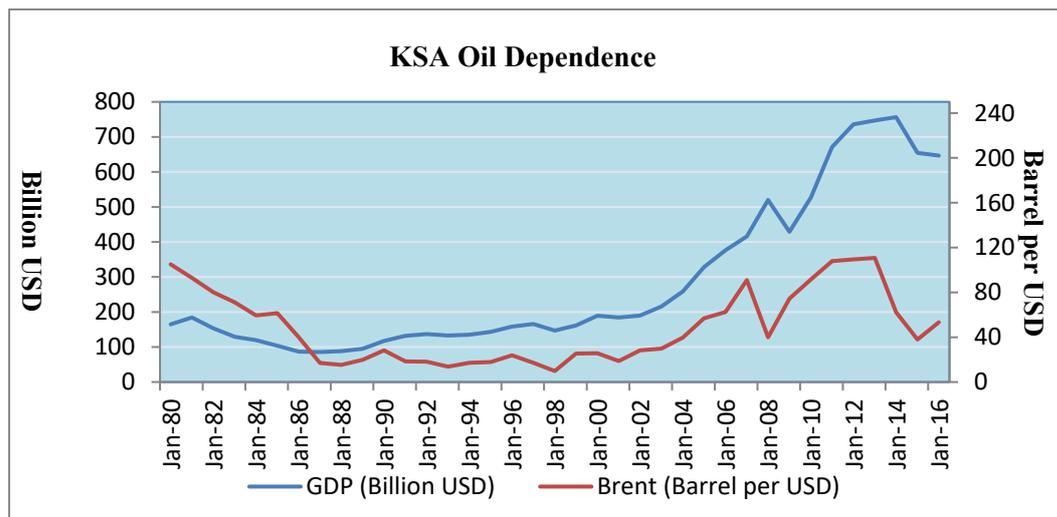


Figure 1: KSA Oil Dependence

Source: IMF and US Energy Information Administration

Figure 1 summarizes the phenomenon, indicating Saudi Arabia's GDP kept moving in the same pattern as oil prices. Saudi GDP remained enormously dependent on global oil prices and events. For example at the time of Iraqi invasion in Kuwait, where two major oil suppliers reduced their supply with a constant demand driving the oil prices to increase, the KSA economy was one of the main recipients of this capital gain. Similarly, there is also a huge jump in GDP after 2008 financial crisis, where oil prices jumped up, since oil was the only safe investment that investors can rely on (Alkhatlan, 2013).

Saudi Arabia being the largest oil exporter to the world is suffering from resource dependency problem the most, even in comparison to other Gulf Cooperation Council (GCC) countries. Further, oil revenue makes up the major chunk of government income therefore any decline in oil prices has a direct consequences for government budget deficits, as is the case after 2014 oil price fall.

Real Exchange Rate

Appreciation of real exchange rate is

imminent whenever the country exports skyrocket to catch large foreign exchange inflows. Typically, large foreign exchange inflow would increase the value of local currency and hence appreciating the real exchange rate under flexible exchange rate regime. At the other hand the real exchange rate appreciation is also a symptom of Dutch disease that deteriorates domestic manufacturing of non-tradable products. However, the case of KSA is different because of the fixed exchange rate regime. In this case we may observe indirect effect on REER. The large foreign exchange inflows are converted into local currency leading to excess money supply. This increase in money supply results into demand-pull inflation and appreciating the “real” exchange rate. The real exchange rate appreciation put pressure on competitiveness of traditional export sector. A similar situation has happened in KSA when decades of oil exports and artificially high exchange rate makes non-oil exports more expensive in international markets¹. Following is the Real Effective Exchange Rate of Saudi Arabia from 1995 to 2016 as reported by Federal Reserve Bank (figure 2).

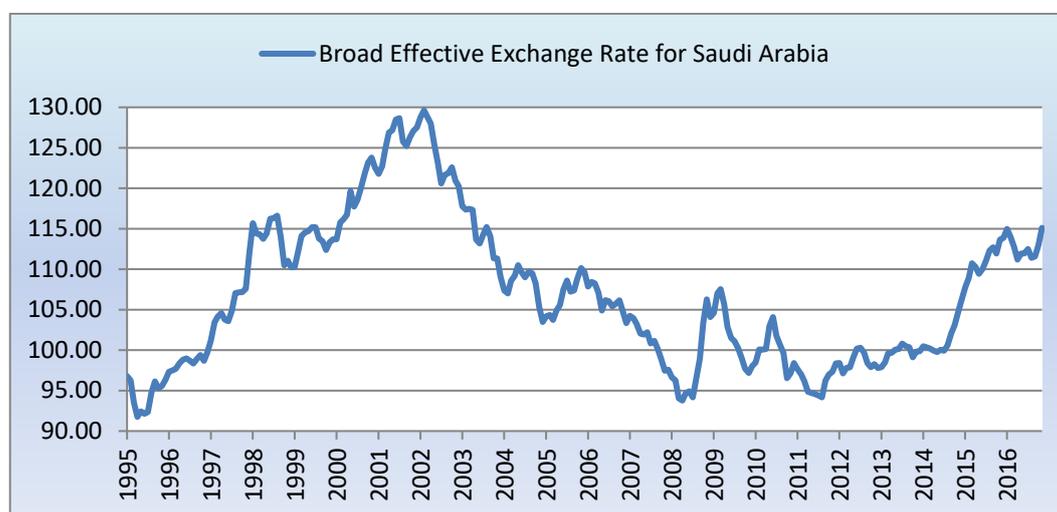


Figure 2: Real effective exchange rate for Saudi Arabia

Source: FED

1. Although historically KSA do not have significant industrial or other exports, yet the appreciated REER may lead to higher prices and compatibility issue.

Manufacturing Sector “De-industrialization”

The decline in non-resource tradable goods sector “or the manufacture sector in short” is one of the main symptoms of Dutch disease. Here we know that the classical form of the disease is the dependency on the natural resource which in turn increase the currency flows and hence real exchange rate which leads to the deterioration of the manufacture sector.

Although for Saudi Arabia there exists no real manufacturing base to be actually worsened. Which means manufacturing sector in Saudi Arabia remained very limited, most tradable products in the market are imported; furthermore the rate of imports remained closely tied to the rate of income from oil. Actually Saudi Arabia has never developed the non-oil tradable sector, which should have done way before in anticipation of oil resources depletion. Besides, the only non-oil manufacture sector developed in KSA is plastic and polymer (chemicals) products again driving its strength from oil sector. Further

as shown in the figure the history of this non-oil sector is not very old and all the major developments are recent and insufficient. Besides the downside for this polymer and plastic sector is its high positive correlation with oil industry, so in reality this may not be termed as diversification (figure 3).

Exports vs. Imports

Based on the argument by Corden and Neary (1982) the high dependency and de-industrialization shift the labor force toward the highly paid natural resource (oil sector in our case). Beside the appreciated currency, the country that suffers from Dutch disease loses its capacity to produce various goods and export it worldwide. Therefore, increasing the export of oil (mineral resources) and increasing the import of other goods. In case of Saudi Arabia the figure below indicates the exports and imports pattern (figures 4 and 5):

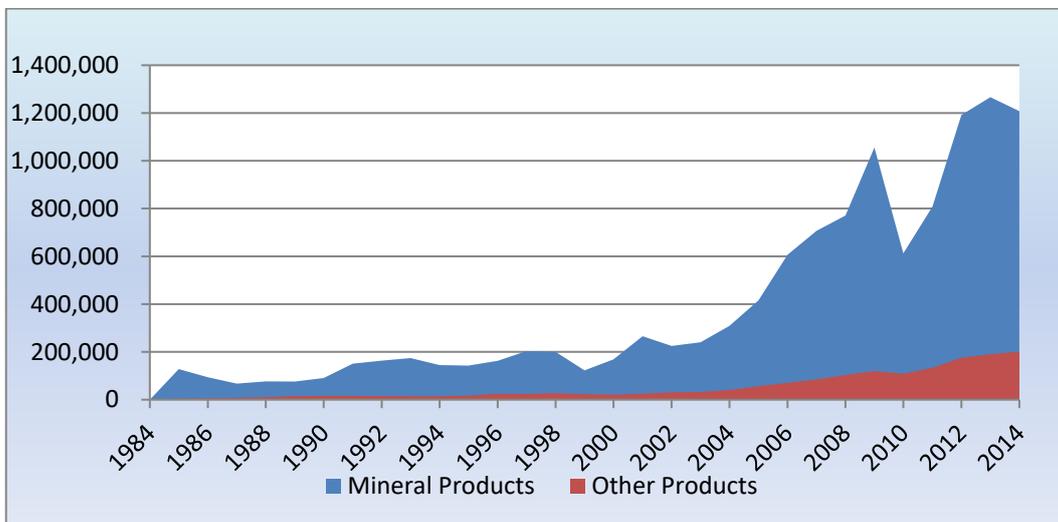


Figure 3: Saudi Oil and Non-Oil Exports

Source: SAMA

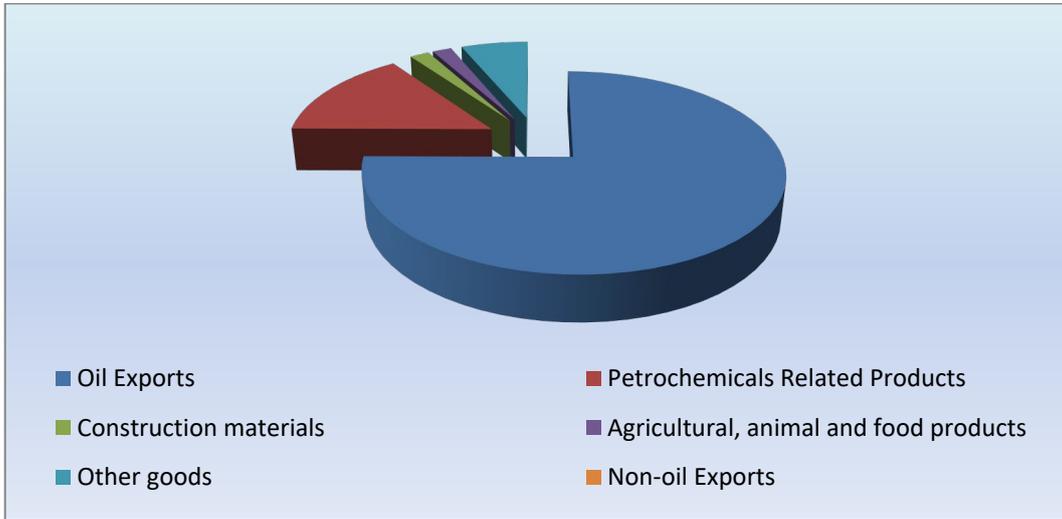


Figure 4: Saudi Exports Composition

Source: SAMA

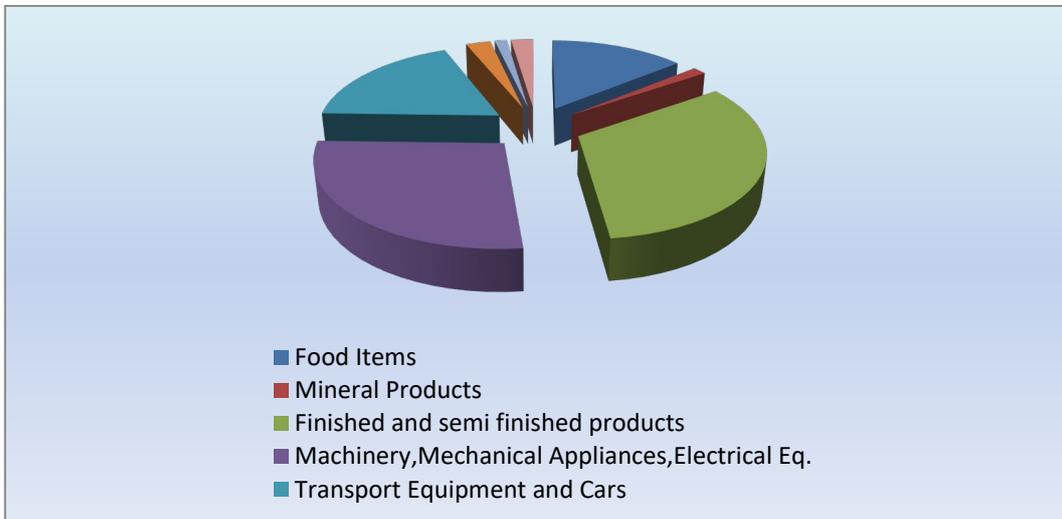


Figure 5: Saudi Imports Composition

Source: SAMA

In 2015, Saudi Arabia's export is \$204 billion and the import is \$175 billion, recording a surplus in the trading account. However, the exports are limited to a very low range of products, dominated by oil 75%, followed by plastics, rubbers and polymer products that depend on oil on it manufacturing 15%. On the other hand, Saudi Arabia is importing a very wide variety of finished products including electronics cars and other luxuries. This may raise a question mark about how well Saudi Arabia is utilizing their comparative advantage by producing and exporting their own goods instead of exporting raw material and importing finished goods.

Spending Effect

According to Rodriguez (2006), an increase in disposable income due to boom in oil and energy sector would cause the spending effect – that is an increase in the demand for both tradable and non-tradable goods. The high demand for non-tradable products amid supply constraints puts upward pressure on their domestic prices. To diagnose this symptom, we have analyzed the GDP per Capita, spending levels and consumer

confidence.

For Saudi Arabia the GDP and GDP per Capita kept on increasing at a steady pace with a little correction effect after 2008 peak, which was due to the increase in oil prices. The consequent increase in individual income caused an increase in purchasing power and overall spending level. One might argue, why the GDP per Capita would increase under the recent tough economic circumstances, an answer could be that the government has not impose taxes so far, therefore the privet sector with no taxes imposed kept on increasing regardless of the decrease in oil sector (Gale and Samwick, 2014).

Labor Force

The labor mobility and productivity are one of the symptoms that can test the deindustrialization process and Dutch diseases. In the case of KSA the local labor force has a slow growth, due to overreliance on non-Saudis because of the skills gap between non-Saudis and Saudis. The labor market conditions in Saudi Arabia are illustrated in the following graph (figure 6).

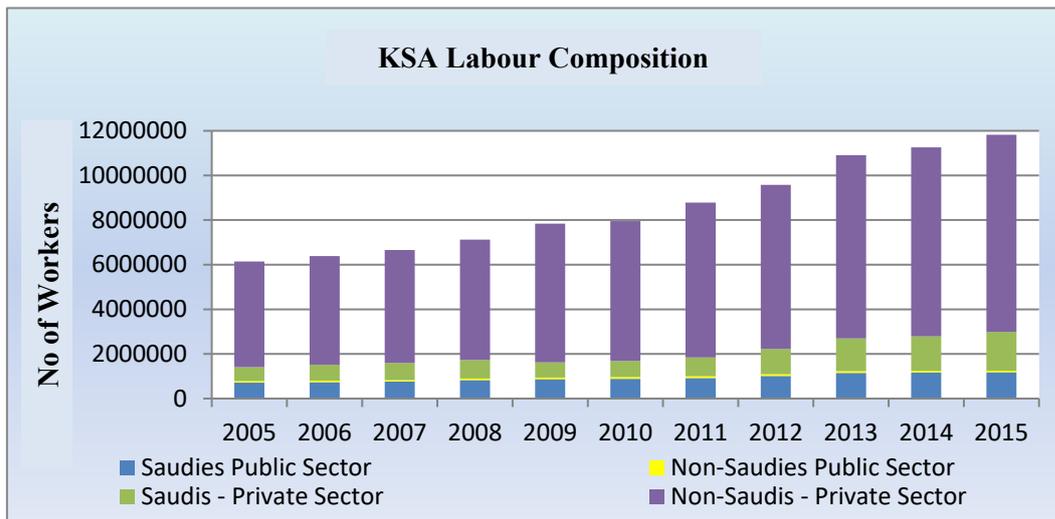


Figure 6: KSA Labor Composition

SOURCE: Arab News

For KSA the labor productivity in the public sector has historically been lower than the private sector (Al Sheikh and Erbaş, 2013). The number of non-Saudis occupying private sector jobs is more than the Saudis” the number of net job offered to non-Saudis rose significantly from 68,000 in 2014 to 369,000 in 2015. The mismatch between the Saudi Labor skills and the private sector requirements is the main reason that non-Saudi play the major role in the private sector.

The slowdown in the productivity of public sectors is resulting from the traditional preference by Saudis for public sector. As they tend to prefer less working hours compared to private and manufacturing sector, being well-paid and job security. This low productivity in local labor force is considered as another sign of Dutch disease.

Inflation

One potential cause of inflationary pressure under the Dutch Disease is the rise in government expenditures (Mardaneh, 2015). However, there are several other causes of inflation apart from this.

In general the inflation remained low in KSA apart from few shock mainly in 1973 and 2008. It is noticeable that both periods are chartered by oil boom. However in 2008 the main cause of inflation was growth in domestic demand and increased food and rental prices (Al-Hamidy, A. 2010).

CONCLUSION

In the recent scenario of oil price slump and resulting budgetary unease faced by oil exporting nations, the paper shed a light on Saudi Arabia’s overdependence on oil revenue. Further in the light of existing literature and symptoms discussed by earlier studies, the paper investigates whether the country is suffering from Dutch Disease. We investigated the symptoms like resource overdependence, appreciation of the real exchange rate, possible de-industrialization or shrinkage of industrial sector, import export structure, labor composition and wages etc.

We found that Saudi economy is highly oil dependent with 80 percent of government revenues are coming from oil. Resultantly, the Saudi GDP moves in tandem with oil prices and therefore any positive or negative oil price shock would cascade into the performance on Saudi

economy. Resultantly, the huge foreign exchange inflows due to oil exports has kept the Saudi’s Real Effective Exchange Rate (REER) on the higher side, making the non-oil exports less competitive in international markets. This imbalance has resulted into the negligence of manufacturing sector in Saudi Arabia. The non-existence of a diverse local manufacturing sector has increased the reliance on imported items from essential food to luxury cars. We found that Saudi exports are skewed towards less value-added oil resources, and in some cases they export all raw materials for the finished product to be imported back to Saudi Arabia at higher cost. The huge oil revenues for Saudi Arabia in the past has resulted into an increase in personal disposable income for Saudi nationals. So the consumer demand is kept on increasing whereas producers were unable to match the demand. The Saudi labor force is also skewed in government-owned oil sector and the private sector needs to rely on non-Saudi (expatriate) labor force.

In nutshell, the Saudi economy is found to be suffered with Dutch disease in the past, however, the new initiative like Vision 2030 has opened the door for diversification to non-oil based economy. Under the Vision 2030 the Saudi government is providing incentive to the private sector for the establishment of a well-diversified manufacturing sector and value-added supply chain. We expect the Saudi economy to defeat the menace of Dutch disease if the Vision 2030 is being implemented in letter and spirit.

REFERENCES

- Al-Hamidy, A. (2011). Monetary Policy in Saudi Arabia. *BIS Papers*, 57, 301-305.
- Alkhatlan, K. A. (2013). Contribution of Oil in Economic Growth of Saudi Arabia. *Applied Economics Letters*, 20 (4), 343-348.
- Al Sheikh, H. and Erbaş, S. N. (2013). Labor Income and Oil Wealth: A Broader Sustainability Framework for Saudi Arabia. *Middle East Development Journal (MEDJ)*, 5 (2), 1-31.
- Andrianova. (2016). Russian Economy Edges Near end of Recession as Contraction Eases. *Bloomberg*.
- Apergis, N., El-Montasser, G., Sekyere, E., Ajmi, A. N. and Gupta, R. (2014). Dutch Disease Effect of Oil Rents on Agriculture Value Added in Middle East and North African (MENA) Countries. *Energy Economics*, 45, 485-490.
- Beine, M., Bos, C. S. and Coulombe, S. (2012). Does the Canadian Economy Suffer from Dutch disease? *Resource and Energy Economics*, 34 (4), 468-492.

- Benkhodja, M. T. (2014). Monetary Policy and the Dutch Disease Effect in an Oil Exporting Economy. *International Economics*, 138, 78-102.
- Borkó, T. (2007). The Suspicion of Dutch Disease in Russia and the Ability of the Government to Counteract. *ICEG European Centre*, (35).
- Bruno, M. and Sachs, J. (1982). Energy and Resource Allocation: A Dynamic Model of the "Dutch Disease". *The Review of Economic Studies*, 49 (5), 845-859.
- Buiter, W. H. and Purvis, D. D. (1980). Oil, Disinflation, and Export Competitiveness: A Model of the "Dutch Disease": National Bureau of Economic Research Cambridge, Mass., USA.
- Corden, W. M. and Neary, J. P. (1982). Booming Sector and De-industrialisation in a Small Open Economy. *The Economic Journal*, 92 (368), 825-848.
- Gale, W. G. and Samwick, A. A. (2014). *Effects of Income Tax Changes on Economic Growth*.
- Hamilton, K. and Hartwick, J. (2008). Oil Stock Discovery and Dutch Disease: Queen's Economics Department Working Paper.
- Ismail, K. (2010). *The Structural Manifestation of the Dutch Disease: The Case of Oil Exporting Countries*: International Monetary Fund.
- Larsen, E. R. (2004). Escaping the Resource Curse and the Dutch Disease?: When And Why Norway Caught up with and Forged Ahead of Its Neighbors.
- Looney, R. E. (1990). Oil Revenues and Dutch Disease in Saudi Arabia: Differential Impacts on Sectoral Growth. *Canadian Journal of Development Studies/Revue Canadienne D'études du Développement*, 11 (1), 119-133.
- Magud, N. E. and Sosa, S. (2010). When and Why Worry about Real Exchange Rate Appreciation? The Missing Link between Dutch Disease and Growth.
- Mardaneh, S. (2012). *Inflation Dynamics in a Dutch Disease Economy*.
- Mardaneh, S. (2015). Inflation Dynamics in a Dutch Disease Economy. *Iranian Economic Review*, 19 (3), 295-323.
- Mikesell, R. F. (1997). Explaining the Resource Curse, with Special Reference to Mineral-Exporting Countries. *Resources Policy*, 23 (4), 191-199.
- Mussi Rodriguez, C. (2006). Dutch Disease in Saudi Arabia?
- North, D. C. (1963a). Aspects of Economic Growth in the United States, 1815-1860. *Experiences of Economic Growth*, ed. BE Supple, Random House, New York.
- North, D. C. (1963b). Aspects of Economic Growth in the United States, 1815-1860. *Experiences of Economic Growth*, New York: Random House.
- Oomes, N. and Kalcheva, K. (2007). Diagnosing Dutch Disease: Does Russia Have the Symptoms?
- Sala-i-Martin, X. and Subramanian, A. (2008). Addressing the Natural Resource Curse: An Illustration from Nigeria *Economic Policy Options for a Prosperous Nigeria* (pp. 61-92): Springer.
- Struthers, J. J. (1990). Nigerian Oil and Exchange Rates: Indicators of 'Dutch disease'. *Development and Change*, 21 (2), 309-341.