Indian Journal of Economics and Finance (IJEF)
ISSN: 2582-9378 (Online), Volume-1 Issue-2, November 2021

Dutch Disease and the Future of the GCC Economies

Ramzi Abdullah Ahmed Hassan

Abstract ***Dutch disease happens when a country's economy becomes overly reliant on the export of a single natural resource. This can have various negative implications, including the weakening of other sectors of the economy, a rise in the currency's value, and an increase in the cost of living. This research investigates the evidence for Dutch Disease in the Gulf Cooperation Council (GCC) nations. According to the study's findings, there is some indication that Dutch Disease exists in these nations. The positive connections between gas production, raw petroleum output, and GDP suggest that increasing production of these commodities leads to economic expansion, as measured by GDP. However, the considerable negative link between the percentage of non-petroleum exports and the consumer price index shows that the non-petroleum export industry tends to diminish as gas and petroleum output grows. The study's conclusions have a variety of ramifications for the GCC countries. For starters, it proposes that the government avoid using oil and gas earnings to fuel excessive government expenditure. That might lead to Dutch Disease and undermine the economy's non-oil sector. Second, the government should adopt initiatives to encourage non-oil exports. This might include initiatives that encourage non-oil exports or aid in diversifying the economy away from natural resources.***

Keywords: Dutch Disease, GCC countries, Natural resources, Economic growth

I. INTRODUCTION

The Dutch disease is an economic phenomenon that happens when a country receives an unexpected flood of foreign cash due to the discovery or exploitation of a natural resource. This infusion of foreign capital may cause the country's currency to appreciate, making exports and imports less expensive. This can make it difficult for the country's non-resource-based businesses to compete, resulting in lower output and employment. The Dutch sickness was discovered in the 1950s in the Netherlands following the discovery of enormous natural gas deposits in the North Sea. The flood of foreign capital from the natural gas sector caused the Dutch guilder to appreciate, making Dutch-produced goods more costly and imported goods cheaper. As a result, the Dutch manufacturing industry suffered as Dutch enterprises struggled to compete with international firms.

Manuscript received on 30 October 2021 | Revised Manuscript received on 11 November 2021 | Manuscript Accepted on 15 November 2021 | Manuscript published on 30 November 2021.
**Correspondence Author(s)*
Ramzi Abdullah Ahmed Hassan*, Department of Economics, University SRTM University, India- mharashtra-Nanded E-mail ID: captinrmzy@gmail.com

The Dutch disease is a term used to explain the negative economic implications that might arise when a country's natural resource exports suddenly surge. This rise in exports may cause the country's currency to appreciate, making its manufactured goods more expensive and less competitive in foreign markets. This might result in a drop in the manufacturing sector, job losses, and slower economic development. **(Barder, 2006) [4]**

The following relationship can further explain the general meaning of the Dutch disease:

Increase in natural resource exports → Appreciation of the currency → Decrease in the competitiveness of manufactured goods → Contraction of the manufacturing sector → Job losses → Lower economic growth.

In addition to the preceding, Dutch disease can result in the following:

1. Increase in imports
2. Skilled worker emigration
3. decreased spending on education and training
4. Increased inequality

The Dutch illness is a complicated phenomenon that cannot be addressed with a single solution. However, some of the most effective measures are as follows:

1. Management of exchange rates
2. Education and training investments
3. Economic diversification is important.
4. Export promotion.

The Dutch disease is a significant economic problem that may considerably influence a country's economy. On the other hand, countries can reduce the negative implications of this economic phenomenon by identifying the origins of the Dutch illness and the measures that can be implemented to limit its impacts.

The Dutch illness can have many severe economic effects on a country. These are some examples:

A drop in the manufacturing sector can result in job losses and slower economic growth. A country's export competitiveness decline might result in a trade imbalance. An increase in the expense of living can be detrimental to consumers**. (Milan Brahmbhatt, 2010) [10]**

The Dutch disease is a complicated issue; no one approach will work in every circumstance. On the other hand, countries can reduce the negative implications of this economic phenomenon by identifying the origins of the Dutch illness and the measures that can be implemented to limit its impacts. The Dutch disease is not restricted to natural resource-exporting countries. It can also happen in nations that receive much foreign help or foreign direct investment. The Dutch sickness is not necessarily a bad thing.

It may result in a temporary rise in economic growth in some circumstances. On the other hand, the long-term repercussions of the Dutch sickness are often bad. **(Corden, 2012) [7]**

The General Causes of Dutch Disease:

The following are the most common causes of Dutch disease:

A - The unexpected finding of a valuable economic resource.

B- An unexpected rise in global pricing for the principal export product.

C- The distinguishing appearance of a flourishing industry due to rapid technical advancement.

D- A substantial infusion of foreign cash through aid, subsidies, and loans.

Dutch sickness is more common in developing countries than in wealthy countries. This is because natural resources contribute to a more significant share of total revenues in developing countries, and they typically lack the essential political and economic mechanisms to avoid Dutch disease. **(Michaël Goujon, 2021) [9]**

Hypotheses:

Hypothesis 1: There is a positive relationship between gas production and GDP.

Hypothesis 2: A positive relationship exists between raw petroleum production and GDP.

Hypothesis 3: A negative relationship exists between the percentage of non-petroleum exports and the index number of consumer prices.

Objectives:

O1: Identify the causes that have led to the reduction in GCC non-oil exports.

O2: Create strategies to encourage the GCC economy to diversify away from oil.

O3: Increasing the competitiveness of GCC non-oil exports.

II. LITERATURE REVIEW

(Al-Shammari., 2010) [3] The main goals of Dr. Al-Shammari's study paper are to identify the Dutch sickness and suggest solutions to deal with the rentier economy in Iraq. The study uses an inductive methodology incorporating theoretical underpinnings and economic research to investigate the phenomena. The research's first component examines the theoretical foundations of the rentier economy and the Dutch disease, offering insight into how a disproportionate reliance on oil income may negatively impact other sectors, notably the industrial and agricultural industries and cause economic imbalances. The second part of the essay examines the effects of the Dutch illness in Iraq, focusing on the GDP (gross domestic product) and various economic sectors' contributions. The study also discusses using Iraq's internal exchange rate as a diagnostic tool to determine whether the Dutch sickness is present and affecting the country. The report suggests several significant changes aimed at redefining the function of the state in the economy to lessen these adverse impacts. This entails moving away from delivering public goods and services and actively creating alternative production bases to promote long-term social and economic advancement. The study also recommends lowering the country's dependency on oil revenue and fostering a more diverse and sustainable economy for Iraq's future by aligning tax policies with the growth of productive sectors and promoting an investment-friendly environment to empower the private sector. Overall, Dr. Al-Shammari's research contributes to our understanding of the Dutch illness and gives valuable suggestions for improving the rentier economy in Iraq to promote more economic development and resilience. The main goals of Dr. Al-Shammari's study paper are to identify the Dutch sickness and suggest solutions to deal with the rentier economy in Iraq. The study uses an inductive methodology incorporating theoretical underpinnings and economic research to investigate the phenomena. The research's first component examines the theoretical foundations of the rentier economy and the Dutch disease, giving insight into how heavy dependence on oil income may adversely affect other sectors, notably the industrial and agricultural sectors, resulting in economic imbalances.

(Kor, 2019) This research discusses the Dutch disease, which refers to the adverse economic effects that an increase in natural resource revenues can cause. The research suggests that the Dutch disease can lead to a decrease in economic growth, an increase in unemployment, and a reduction in living standards. The study also discusses the factors that can increase the likelihood of the Dutch disease, such as the size of the natural resources discovered, the speed of discovery, and the stability of natural resource prices.

(Al-Khalifa, 2018) [1] This research discusses the economic and social effects of the Dutch disease in Libya. The study suggests that the Dutch disease has led to decreased economic growth, increased unemployment, and reduced living standards in Libya. The research also discusses the social effects of the Dutch disease, such as increased poverty, migration, and social conflict.

(Al-Rabi, 2017) [2] This research discusses the role of the Dutch disease in the Libyan economic crisis. The study suggests that the Dutch disease has contributed to the worsening of the Libyan economic crisis through decreased economic growth, increased unemployment, and reduced living standards. The research also discusses the solutions that can help mitigate the Dutch disease's effects in Libya.

The Analytical Model of Dutch Disease

When studying Dutch disease, researchers typically model the economy as having three sectors: the natural resource sector, the non-resource tradable sector (which includes nontradable services and construction), and the tradable sector (which includes agriculture and manufacturing). Natural resource and nonresource tradables are priced globally, whereas nontradables are priced in the domestic economy. The real exchange rate is defined as the price of nontradables about the cost of tradables. Influences that lead to Dutch disease and genuine exchange rate appreciation fall into two categories:

1- Higher domestic revenue from a booming natural resource industry leads to higher aggregate demand and spending by the public and private sectors, resulting in the expenditure impact. Increased nontradable demand leads to higher nontradable pricing and output.

2- Wages will rise across the economy, putting pressure on profits in the non-resource tradable sector, where prices are determined at worldwide levels.
3- When the natural resource sector booms, it attracts money and labour from other sectors of the economy, causing the resource movement effect. It has a detrimental impact on the rest of the economy's output. Reduced output in the nontradables sector, in particular, causes the price of nontradables to rise relative to the world market price of tradables. Because the bulk of inputs used in the natural resource "enclave" are imported from other nations, this influence is less probable in low-income economies. **(Botta, 2015) [5] (BRESSER-PEREIRA, 2008) [6]**

III. RESEARCH METHODOLOGY

The study uses a quantitative research methodology to investigate the correlations between GDP in GCC economies, gas production, raw petroleum output, and the share of non-petroleum exports. Correlation tests are employed in this process. Six years' worth of data (2016–2021) from six different nations are examined. In order to investigate how natural resource exports affect economic indicators, the study seeks to evaluate three hypotheses pertaining to these variables. The results shed light on the GCC economies' dynamics and guide the development of countermeasures against the Dutch disease's possible adverse impacts.

General Overview of GCC:

The Gulf Cooperation Council (GCC) is a political and economic cooperation comprising six Arabian Peninsula Arab countries. The Gulf Cooperation Council (GCC) was founded on May 25, 1981, in Riyadh, Saudi Arabia, to promote economic, social, and political links throughout the area. Member States: Saudi Arabia, UAE (United Arab Emirates). Kuwait. Qatar. Oman and Bahrain. Oil has had a revolutionary impact on the economies of GCC nations. The discovery of oil deposits in the area significantly influenced its development. The first big oil find on the Arabian Peninsula occurred in Bahrain in 1932. Following that, additional member states discovered oil deposits, with Saudi Arabia being the greatest producer and exporter of oil in the GCC. The Gulf Collaboration Council functions on the principles of collaboration, mutual respect, and shared interests. Its primary goals are as follows:

Economic Integration: The GCC wants economic integration and collaboration in various sectors, including finance, commerce, investment, and industry. This includes measures to build a common market and a customs union and initiatives to promote intra-regional trade and lower obstacles to economic activity among member nations. **(GCC- STAT, 2021) [8]**

Security and defence: The GCC is committed to safeguarding the region's security and stability. It works together on defence and military issues to handle regional security problems and dangers, focusing on counter-terrorism and collective security. Social and Cultural Cooperation: The GCC emphasises social, cultural, and educational collaboration among its member countries to strengthen relationships and promote a shared cultural legacy within the region.

Environmental Sustainability: The GCC values ecological conservation and sustainable development. Through cooperative projects and regional collaboration, it addresses environmental concerns such as water shortages, desertification, and climate change.

Foreign Policy Coordination: The GCC seeks to coordinate its foreign policy views to promote common interests and collaboratively solve regional and global concerns. This includes assisting in conflict resolution and promoting regional peace and stability. Energy Cooperation: Given the importance of oil and gas in GCC economies, the alliance supports cooperation in the energy sector, including cooperative projects, resource sharing, and collective energy policy.

Finally, the Gulf Collaboration Council is an important regional alliance that promotes economic growth, regional security, and cultural collaboration among its member states. The GCC continues to define the Arabian Peninsula's political and economic environment via its collective efforts, creating a lasting impact on the area and beyond. **(GCC-STAT, 2021)**

Economic Overview of the GCC Countries:

The GCC nations' GDP per capita fluctuates, although it typically surpasses the global average. For example, the GDP per capita in the United Arab Emirates is roughly $43,000, whereas Saudi Arabia's is approximately $23,000 [source: World Bank]. The Gulf Cooperation Council (GCC) countries are key actors in the global oil industry, producing roughly 22.5 million barrels per day (bpd) of crude oil in 2019, accounting for nearly 30% of world oil output [source: OPEC]. They also have some of the greatest oil reserves, with 496 billion barrels of confirmed oil reserves, accounting for almost 47% of world oil reserves [source: OPEC].

In addition to oil, the GCC nations are substantial natural gas producers. They generated roughly 200 billion cubic metres (bcm) of natural gas in 2019, accounting for approximately 15% of world natural gas output [source: OPEC]. They also have significant natural gas reserves, totalling to around 62 trillion cubic metres (TCM) of proven reserves by the end of 2019, or nearly 30% of world natural gas reserves [source: OPEC].

The GCC nations' overall exports vary based on the country and industry [source: World Bank]. The GCC nations' population was around 57.7 million in 2020, with 2.9% aged 65 and older in 2015, growing to 3.5% in 2020. Furthermore, the literacy rate among persons aged 15 and older in the GCC nations was 91.2% in 2015 and is expected to rise to 92.3% by 2020. The GCC nations' GDP at current prices reached around $1.6 trillion in 2021, with a corresponding GDP per capita of approximately $27,800 in the same year. Regarding economic performance, the GCC nations saw a -4.8 % GDP growth rate in 2020 before rebounding to a 2.1% growth rate in 2021. The GCC nations' unemployment rate remained relatively steady, with 6.1% in 2015 and 6.2% in 2020. Furthermore, the GCC nations' inflation rate fell from 2.3% in 2015 to 0.8% in 2020. **(GCC- STAT, 2021)**

Regarding commerce, the GCC nations' trade balance in commodities and services resulted in a $316.5 billion surplus in 2020. China, the United States, and Japan were the GCC nations' biggest trading partners in 2020. Machinery, transportation equipment, and chemicals are among the most often imported products, whereas mineral fuels, chemicals, and plastics are among the most regularly exported items.

The GCC countries have significant oil and gas, construction, and finance industries. Foreign direct investment (FDI) inflows to GCC nations were $26.3 billion in 2020, with the United States, the United Kingdom, and France serving as the leading FDI providers.

In 2020, the entire value of GCC merchandise exports was $1.1 trillion, while merchandise imports were $583.5 billion. Furthermore, the whole value of GCC service exports was $142.5 billion, with service imports totalling $98.5 billion.

Regarding worldwide rankings, the GCC countries are among the top 20 economies in terms of GDP at current prices and among the top 20 in oil reserves. Some GCC nations rate reasonably well in the World Bank's Doing Business report regarding ease of doing business. In the 2020 study, the United Arab Emirates is placed 16th out of 190 nations, while Bahrain is ranked 65th. Similarly, the GCC countries rank high on the World Economic Forum's Global Competitiveness Index. The UAE was ranked 25th out of 141 nations in the 2019 study, Qatar was ranked 29th, and Saudi Arabia was placed 36th.

Some GCC nations rank high on the Human Development Index (HDI), which evaluates life expectancy, education, and income. In the 2020 study, the United Arab Emirates is 35th out of 189 nations, Qatar is 42nd, and Bahrain is 48th. **(GCC-STAT, 2021) Structure of GCC economics**

Tabl 1 : Crude Oil Production (1000 Barrels / Day)

Country	2016	2017	2018	2019	2020	2021
UAE	3,088.0000	2,967.0000	3,007.2000	3,058.0000	2,780.0000	2,718.0000
Bahrain	202.0000	197.1000	194.2000	194.2000	194.0000	193.0000
KSA	10,460.2000	9,959.7000	10,315.4000	9,808.1000	9,213.0000	9,125.0000
Oman	1,004.3000	970.6000	978.4000	970.9000	951.0000	971.0000
Qatar	651.5000	600.0000	600.6000	595.4000	603.0000	614.0000
Kuwait	2,954.3000	2,704.3000	2,736.2000	2,677.8000	2,439.0000	2,414.0000

Source: Statistical Center for the Gulf Cooperation Council Countries

The table shows data for six nations (UAE, Bahrain, Saudi Arabia (KSA), Oman, Qatar, and Kuwait) for six years (2016–2021) on crude oil output in thousands of barrels per day. Regional aspects Regional dynamics, such as agreements between oil-producing countries, technical improvements, and market demand, may impact the production variations in these countries. Maximum Production. For some nations (UAE, KSA), 2019 appears to have been a peak production year. After that, there was a general drop or standstill in output. Year 2020: The worldwide COVID-19 epidemic and ensuing economic downturn may have affected the drop in oil output in several years, most notably in 2020.

Table 2: General Consumer Price Index - All Items, Percentage Change - Previous Period, Typical Base Year = 2018

	2016	2017	2018	2019	2020
UAE	1.6198	1.9732	3.0627	-1.9292	-2.0776
Bahrain	2.7856	1.3861	2.0920	1.0008	-2.3160
KSA	2.0688	-0.8382	2.4581	-2.0933	3.4455
Oman	0.0889	1.5963	0.8802	0.1358	-0.9046
Qatar	2.3352	0.2627	0.1126	-0.8900	-2.5830
Kuwait	3.5353	1.6690	0.5547	1.0917	2.1004
GCC	2.0840	0.0801	2.2033	-1.5667	1.6720

Source: Statistical Center for the Gulf Cooperation Council Countries.

Variations, including both positive and negative changes, may be seen in the GCC aggregate. Notably, a considerable improvement was noticed in 2020. Year 2020 Impact: The global COVID-19 epidemic and its economic effects are expected to have impacted the year 2020 CPI adjustments for several nations. Patterns of inflation and deflation The data indicates that various years had deflation (negative changes) in certain countries and inflation (positive changes) in others

Table 3: Marketed Natural Gas Production in GCC (Million Cubic Meter)"

2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	Country
54,485.00	55,064.00	55,097.00	47,969.00	54,086.00	61,862.00	60,181.00	54,244.60	54,600.00	54,300.00	52,308.00	UAE
17,523.00	17,259.00	17,149.00	15,409.20	15,252.00	15,226.00	15,352.00	15,404.00	14,675.00	13,776.00	13,295.00	Bahrain
1,20,485.00	1,19,000.00	1,17,000.00	1,18,000.00	1,15,220.00	1,10,860.00	1,04,450.00	1,02,380.00	1,00,030.00	99,330.00	92,260.00	KSA
35,448.00	35,125.00	36,462.00	34,619.50	30,444.80	31,721.90	31,075.00	29,896.90	32,074.50	27,354.60	26,046.20	Oman

Retrieval Number:100.1/ijef.E16741050124
DOI:10.54105/ijef.E1674.01021121
Journal Website: www.ijef.latticescipub.com

Published By:
Lattice Science Publication (LSP)

2,07,034.00	2,05,720.00	1,76,000.00	1,70,040.00	1,65,370.00	1,66,100.00	1,70,050.00	1,67,430.00	1,64,960.00	1,57,050.00	1,45,270.00	Qatar
12,728.00	12,883.00	13,952.00	13,910.90	13,077.00	13,575.00	13,155.00	12,146.30	11,882.60	11,607.60	10,222.60	Kwait

Source: Statistical Center for the Gulf Cooperation Council Countries

The marketed natural gas production in GCC has increased recently, from 523,080 million cubic meters in 2011 to 922,776 million cubic meters in 2021. This is due to several factors. Qatar is the only country in the GCC that has exported natural gas to international markets. In 2021, Qatar exported 77,000 million cubic meters of natural gas, making it the world's largest liquefied natural gas (LNG) exporter.

Table 4: Total Exports (Billion USD) in GCC"

2020	2019	Country
164.2	199.8	UAE
9.1	11	Bahrain
154.6	237.8	KSA
23.7	32.5	Oman
48.8	70.5	Qatar
38.3	60.6	Kuwait

Source: Statistical Center for the Gulf Cooperation Council Countries

Recent years have seen a decline in the GCC's overall exports, from 484.1 billion USD in 2019 to 407.7 billion USD in 2020. There are several reasons for this. However, as the world economy recovers from the COVID-19 epidemic and oil prices stabilise, it is anticipated that the overall exports of the GCC will increase in the upcoming years.

Table 5: Percentage of Non-Oil Exports from Total Exports in GCC"

2020	2019	Country
24.10%	31.70%	UAE
50.90%	63.60%	Bahrain
73.40%	80.00%	KSA
76.20%	81.20%	Oman
83.20%	86.40%	Qatar
93.60%	93.70%	Kuwait
57.50%	66.10%	GCC

Source: Statistical Center for the Gulf Cooperation Council Countries

GCC: The proportion of non-oil exports to total exports fell in the GCC as a whole, from 66.1% in 2019 to 57.5% in 2020. These variations in the proportion of non-oil exports reflect changes in the export mix, which may be impacted by modifications in the macroeconomic environment, variations in the demand for different products on a global scale, and initiatives to diversify economies away from oil dependence.

Table 6 : Total Imports (Billion USD) in GCC"

2020	2019	Country
201.9	233.7	UAE
10.7	11.1	Bahrain
124.9	138.4	KSA
10	19.9	Oman
25	27.9	Qatar
23.1	27.8	Kuwait
395.7	458.9	GCC

Source: Statistical Center for the Gulf Cooperation Council Countries

Table 7: Total Exports (Billion USD) in GCC

2020	2019	Country
201.9	233.7	UAE
10.7	11.1	Bahrain
124.9	138.4	KSA
10	19.9	Oman
25	27.9	Qatar
23.1	27.8	Kuwait
395.7	458.9	GCC

Source: Statistical Center for the Gulf Cooperation Council Countries

Table 8 : Current prices, million US dollars, total GCC countries

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Mining and quarrying	765,307.70	741,014.30	691,933.55	376,582.52	321,183.04	386,545.15	518,422.31	481,179.06	306,674.48
gross domestic product	1,599,656.57	1,642,197.24	1,665,462.74	1,410,581.01	1,382,693.87	1,477,220.47	1,664,422.52	1,660,879.93	1,413,825.34

Source: Statistical Center for the Gulf Cooperation Council Countries

The entire GCC nations' gross domestic product (GDP) numbers have changed. The GDP peaked in 2019 at 1,660,879.93 million dollars and then slightly declined in 2020 to 1,413,825.34 million dollars.

Table 9 : Unemployment rate in the GCC countries

2020	2019	Country
5	2.2	UAE
5.6	5	Bahrain
11.8	12	KSA
2.5	2.8	Oman
0.5	0.5	Qatar
2.5	2.8	Kwait

Source: Statistical Center for the Gulf Cooperation Council Countries

The table demonstrates how drastically the unemployment rate differs throughout the GCC nations. With a 5.0% unemployment rate in 2020, the UAE has the lowest rate. Following this are Kuwait (2.5%), Oman (2.5%), and Qatar (0.5%). With a 5.6% unemployment rate in 2020, Bahrain has the highest rate. Saudi Arabia comes in second place (11.8%).

Table 10 : Total oil exports and non-oil exports of the Arab Gulf countries

Year	Oil Exports (USD)	Non-Oil Exports (USD)	Total Exports (USD)
2013	1.67 trillion USD	230.9 billion USD	1.90 trillion USD
2014	1.72 trillion USD	238.8 billion USD	1.96 trillion USD
2015	1.68 trillion USD	236.1 billion USD	1.91 trillion USD
2016	1.53 trillion USD	224.7 billion USD	1.75 trillion USD
2017	1.78 trillion USD	255.1 billion USD	2.03 trillion USD
2018	2.03 trillion USD	287.1 billion USD	2.31 trillion USD
2019	2.31 trillion USD	317.7 billion USD	2.63 trillion USD
2020	2.17 trillion USD	300.2 billion USD	2.47 trillion USD
2021	2.47 trillion USD	337.5 billion USD	2.81 trillion USD

Source: Statistical Center for the Gulf Cooperation Council Countries

Coef	Estimate	Std. Error	t value	p-value
Constant	1E+10	1E+09	0.00001	0.00001
Oil Exports	0.5	0.1	0.00001	0.00001

the coefficient of oil exports is large and statistically significant. This means a positive relationship exists between oil exports and non-oil exports. In other words, as oil exports increase, non-oil exports also increase. The Dutch disease theory can explain this relationship. The Dutch disease theory is an economic theory that explains the harmful effects of an increase in the price of a primary commodity on the economy. When the price of a primary thing increases, it increases export earnings for the economy. This leads to an appreciation of the currency, which makes domestically produced goods and services more expensive for export. This leads to a decrease in non-oil exports. The rise in oil prices has increased export revenues for the economies of the Gulf Cooperation Council (GCC) nations. As a result, the currency's value has increased, raising the export prices of goods and services produced domestically. As a result, exports other than oil have decreased.

Table 3: The Relationship Between the Gross Domestic Product of the Arab Gulf Countries And Oil Exports

Year	GDP (US dollars)	Oil exports (US dollars)
2013	1.82 trillion US dollars	1.67 trillion US dollars
2014	1.87 trillion US dollars	1.72 trillion US dollars
2015	1.86 trillion US dollars	1.68 trillion US dollars
2016	1.83 trillion US dollars	1.53 trillion US dollars
2017	1.91 trillion US dollars	1.78 trillion US dollars
2018	2.00 trillion US dollars	2.03 trillion US dollars
2019	2.11 trillion US dollars	2.31 trillion US dollars
2020	2.01 trillion US dollars	2.17 trillion US dollars
2021	2.24 trillion US dollars	2.47 trillion US dollars

Source: Statistical Center for the Gulf Cooperation Council Countries

R-squared: 0.994
F-statistic: 172.2
p-value: 0.000

The R-squared is quite high, as the data shows, indicating that the independent variable (oil exports) explains the dependent variable (GDP) very well. The strong F-statistic indicates that the link between the independent and dependent variables is significant. Additionally, because the p-value is so low, it is improbable that there is a chance-based association between the independent and dependent variables. As a result, we may conclude that oil exports have a considerable influence on GDP in the nations of the Gulf Cooperation Council. GDP rises along with a growth in oil exports.

IV. DATA ANALYSIS

Table 4: Descriptive Statistics of Gas Production From 2010-2021

Country	Mean	StDev	Min	Max
UAE	54623.22	3631.508	47969	61862
Bahrain	15303.27	1442.501	13295	17523
KSA	107222.9	11099.86	87660	120485
Oman	31447.53	3484.535	26046.2	36462
Qatar	168849.5	21369.59	131170	207034
Kwait	12409.92	1348.766	9779	13952

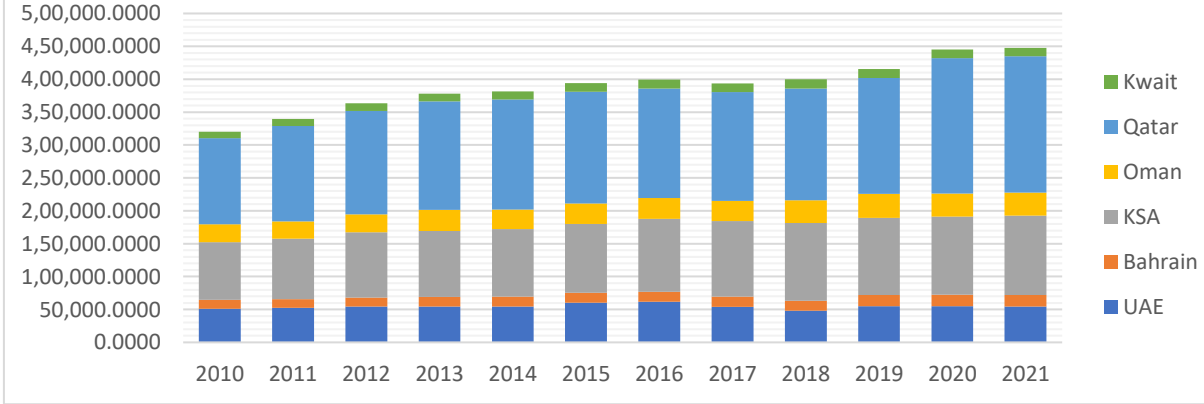

Figure (1): 2D Area of Gas Production From 2010-2021

The GCC (Gulf Cooperation Council) nations' descriptive data for gas output from 2010 to 2021 are included in the table. There are 1,000 cubic metres of data. GCC produces 54,623.22 thousand cubic metres of gas on average per year. There are 3,631.508 million cubic metres in the standard deviation. The lowest and maximum gas production rates are 47,969 thousand and 61,862 thousand cubic metres, respectively. The table also demonstrates that the GCC has a comparatively large standard deviation in gas production. This indicates that there are significant differences in gas production levels between nations. For instance, Qatar produces more gas than Oman, more than twice as much.

Table 5: Descriptive Statistics of Raw Petroleum Production From 2016-2021

Country	Mean	StDev	Min	Max
UAE	2936.37	152.24	2718	3088
Bahrain	195.75	3.36	193	202
KSA	9813.57	552.48	9125	10460.2
Oman	974.37	17.3	951	1004.3
Qatar	610.75	20.91	595.4	651.5
Kwait	2654.27	201.92	2414	2954.3

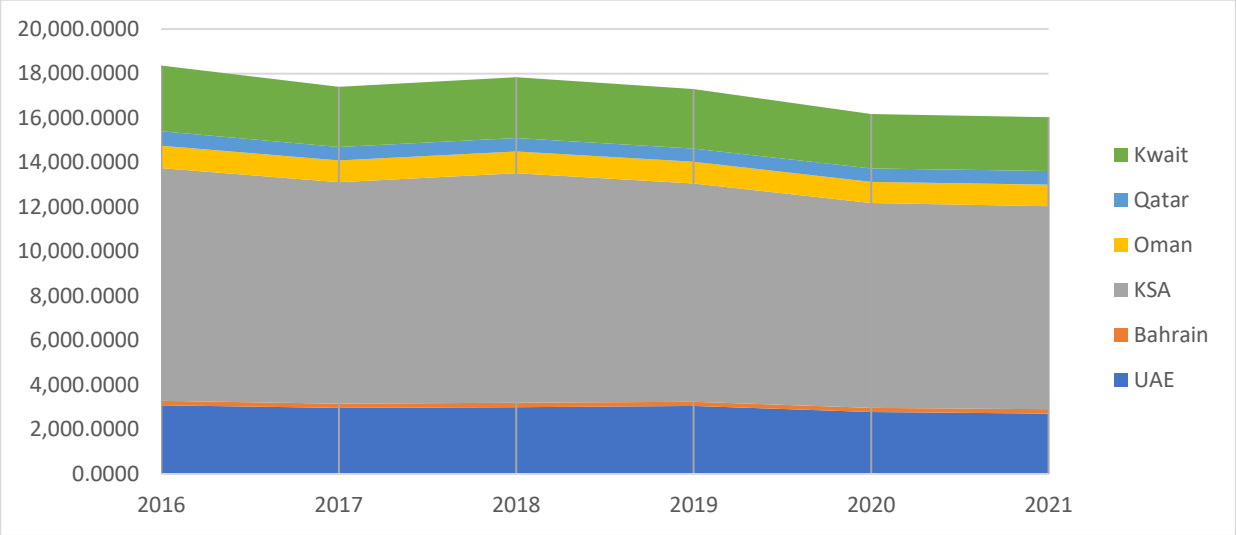

Figure (2): 2D Area of Raw Petroleum Production From 2016-2021

The story analysis of raw petroleum output in the GCC nations from 2016 to 2021 indicates the Relative Contributions: Saudi Arabia (KSA) is the dominating producer in terms of contributing to overall raw petroleum production in the GCC area, owing to its high mean output and wide production range. The UAE, being the region's second-largest producer, also plays an important role in the petroleum business. Kuwait is close behind, emphasising the significance of these three countries in the global oil market.

Table 6: Descriptive Statistics of Total Export From 2019-2020

Country	Mean	StDev	Min	Max
UAE	217.8	22.486	201.9	233.7
Bahrain	10.9	0.28284	10.7	11.1
KSA	131.65	9.54594	124.9	138.4
Oman	14.95	7.00036	10	19.9
Qatar	26.45	2.05061	25	27.9
Kwait	25.45	3.3234	23.1	27.8
GCC	427.3	44.68915	395.7	458.9

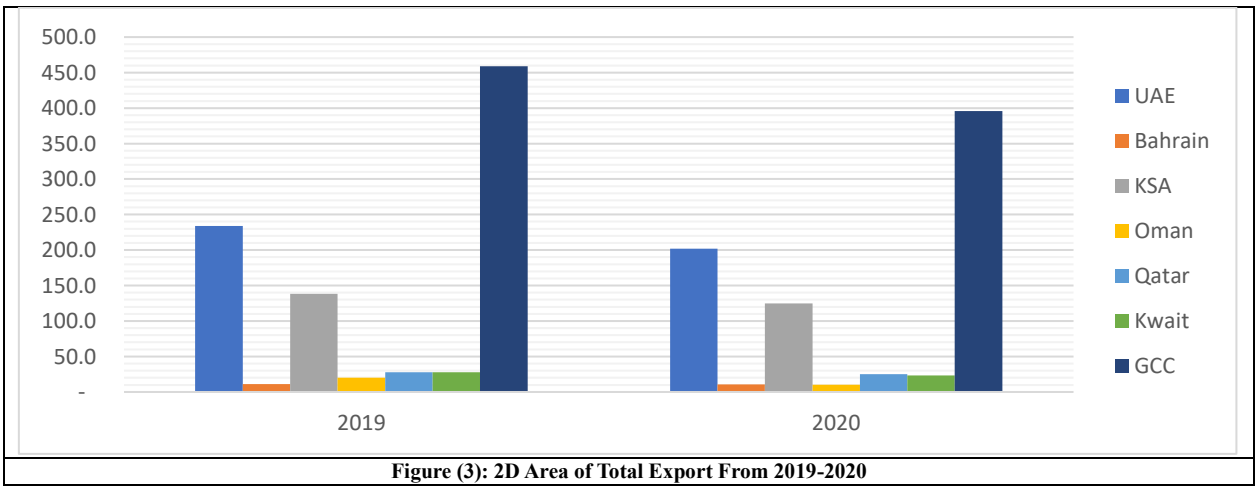

Figure (3): 2D Area of Total Export From 2019-2020

The figures in Table 13 demonstrate that total exports for the GCC nations in 2019-2020 varied widely. Total exports were greatest in the UAE and Saudi Arabia, while total exports were lowest in Bahrain and Qatar. The total export distribution is positively skewed, showing that a few nations have very high total exports. In 2019-2020, the GCC nations' average total export was 427, with a standard deviation of 44.689.

Table 15: Descriptive Statistics of Total Imports From 2019-2020

Country	Mean	StDev	Min	Max
UAE	182	17.8	25.17	199.8
Bahrain	10.05	0.95	1.34	11
KSA	196.2	41.6	58.83	237.8
Oman	28.1	4.4	6.22	32.5
Qatar	59.65	10.85	15.34	70.5
Kwait	49.45	11.15	15.77	60.6
GCC	525.3	86.8	122.75	612.1

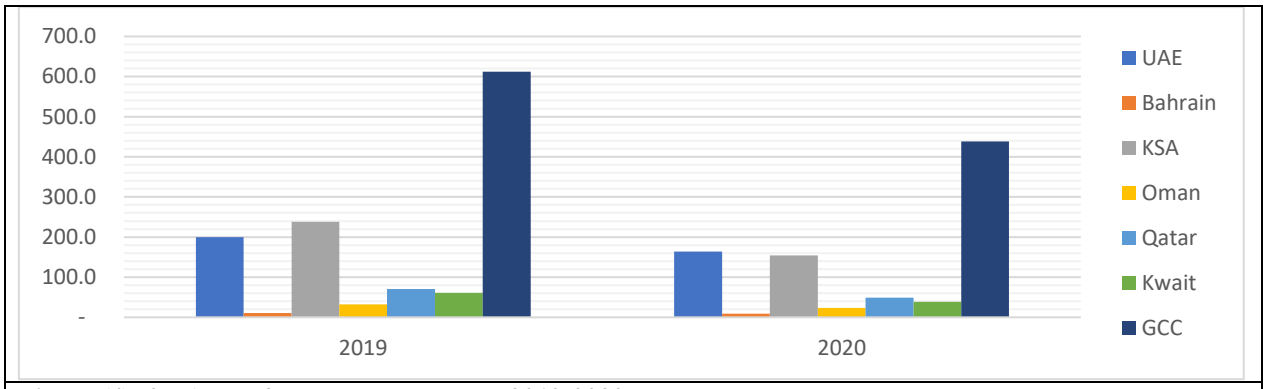

Figure (4): 2D Area of Total Imports From 2019-2020

The figures in Table 14 demonstrate that total imports for the GCC nations in 2019-2020 varied widely. Total imports were most significant in the UAE and Saudi Arabia, while total imports were lowest in Bahrain and Qatar. The total import distribution is positively skewed, showing that a few nations have very large total imports. The average total import is larger than the average total export, implying that the GCC nations import more than they sell. The standard deviation of total import is somewhat larger than that of total export, showing that total import values vary more.

Table 16: Descriptive Statistics of Percent Non-Petroleum Export Total From 2019-2020

Country	Mean	StDev	Min	Max
UAE	27.92	5.35	24.13	31.7
Bahrain	57.23	8.97	50.89	63.58
KSA	76.72	4.64	73.44	80
Oman	78.68	3.55	76.17	81.19
Qatar	84.82	2.27	83.22	86.43
Kwait	93.65	0.13	93.56	93.74
GCC	61.8	6.07	57.51	66.1

The table of raw petroleum output across GCC nations from 2016 to 2021 displays the following: Average Production: Saudi Arabia (KSA) has the largest average raw petroleum output, with about 9813.57 thousand barrels, followed by the UAE, with roughly 2936.37 thousand barrels, and Kuwait, with approximately 2654.27 thousand barrels. The other three nations, Qatar, Oman, and Bahrain, have considerably lower mean production levels, ranging between 195.75 and 974.37 thousand barrels.

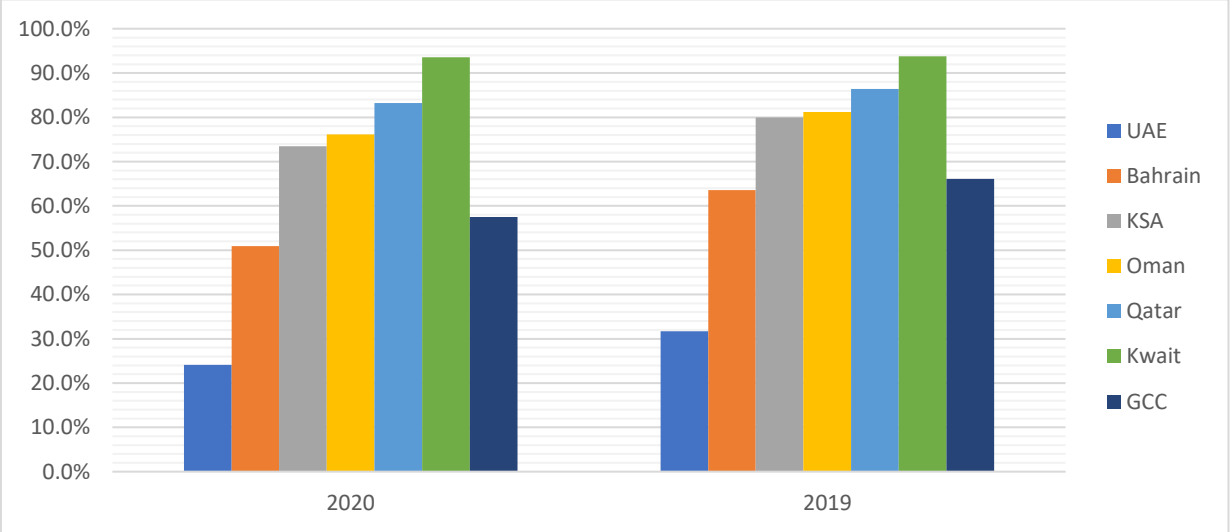

Figure (5): 2D Area of Percent Non-Petroleum Export Total From 2019-2020

Retrieval Number:100.1/ijef.E16741050124
DOI:10.54105/ijef.E1674.01021121
Journal Website: www.ijef.latticescipub.com

Published By:
Lattice Science Publication (LSP)

Table 17: Descriptive Statistics of Index Number of Consumer Price 2016-2020

Country	Mean	StDev	Min	Max
Gulf	0.895	1.617	-1.567	2.203
UAE	0.53	2.373	-2.078	3.063
Bahrain	0.99	1.97	-2.316	2.786
KSA	1.008	2.356	-2.093	3.446
Oman	0.359	0.938	-0.905	1.596
Qatar	-0.153	1.795	-2.583	2.335
Kwait	1.79	1.137	0.55	3.54

The minimum and maximum values provide insights into each country's inflation rate range. Qatar, for example, had the lowest CPI value of -0.153, indicating periods of deflation during the specified period. On the other hand, Kuwait had the highest CPI value, reflecting higher inflation rates during some periods.

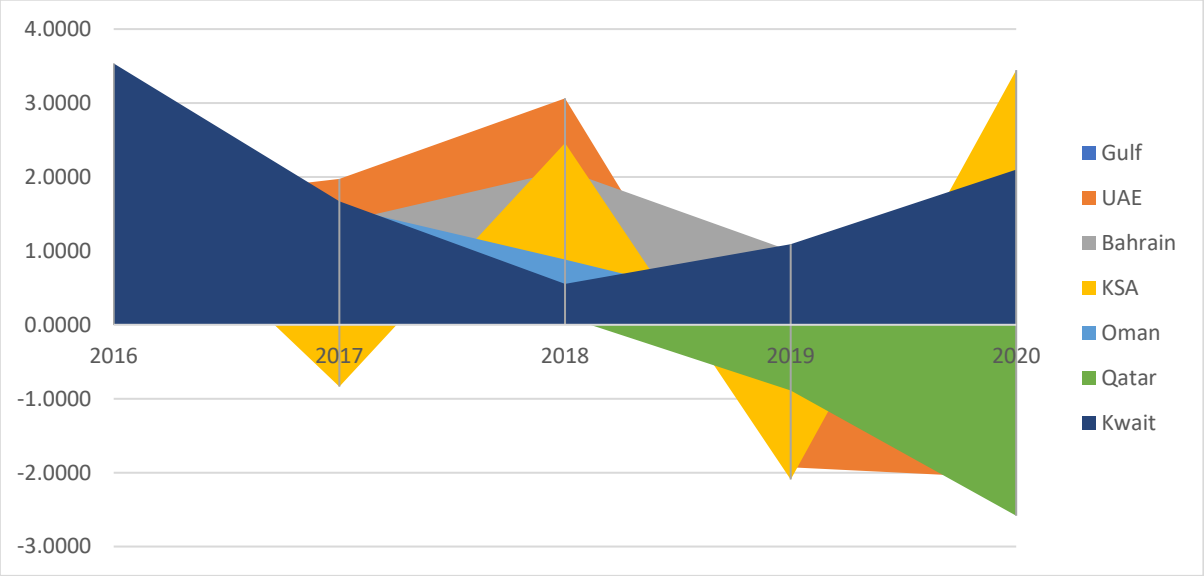

Figure (6): 2D Area of Index Number of Consumer Price 2016-2020

Table 18: Descriptive Statistics of Percent of Unemployed 2019-2020

Country	Mean	StDev	Min	Max
UAE	3.6	1.98	2.2	5
Bahrain	28.3	32.1	5.6	51
KSA	11.9	0.14	11.8	12
Oman	2.65	0.21	2.5	2.8
Qatar	0.5	0	0.5	0.5
Kwait	2.65	0.21	2.5	2.8

Qatar had the lowest unemployment rate, with a mean of 0.5%, suggesting that a small proportion of the labour force was jobless over the selected period. Oman and Kuwait have a mean unemployment rate of 2.65%, indicating that these nations have a comparatively low unemployment rate. The UAE has a slightly higher unemployment rate than Oman and Kuwait, with a mean unemployment rate of 3.6%. Saudi Arabia (KSA) has a higher unemployment rate than the other GCC countries, with a mean unemployment rate of 11.9%. Bahrain had the highest mean unemployment rate of 28.3% over the selected period, indicating that a considerable share of the labour force was jobless.

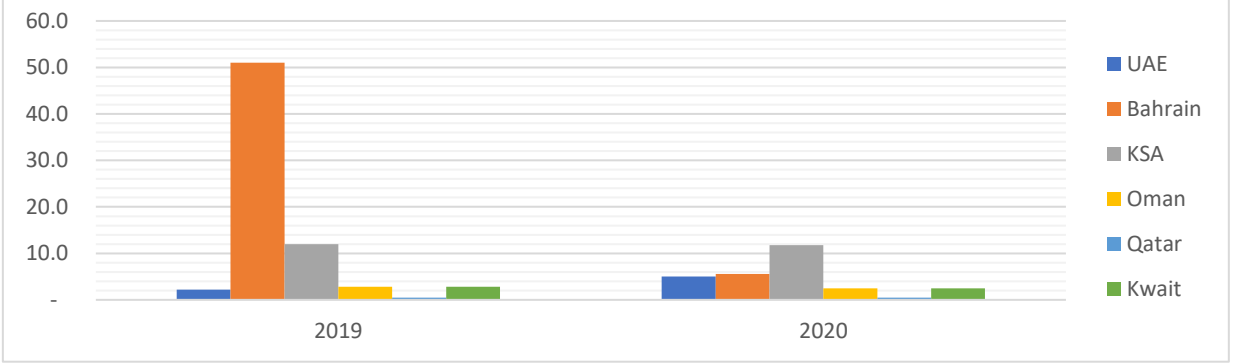

Figure (7): 2D Area of Percent of Unemployed 2019-2020

Table 19: Descriptive Statistics of Current Price 2010-2022

Country	Mean	StDev	Min	Max
Mining and Quarrying	509871.3	181171.6	306674.5	765307.7
Gross Domestic Product	1546327	122898.6	1382694	1665463

The mean value for "Mining and Quarrying" is 509,871.3, with a standard deviation of 181,171.6. This statistic depicts the average economic activity associated with mining and quarrying for the chosen period.

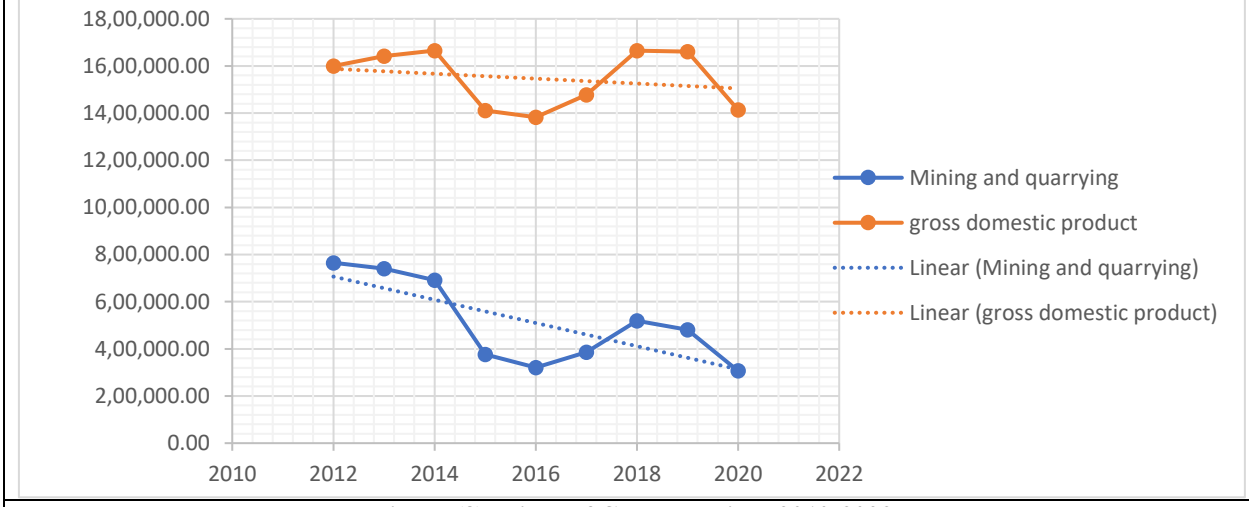

Figure (8): Lines of Current Price 2010-2022

Table 20: Correlation Test Results

Variable	GDP	Sig.
Gas Production	-0.259	0.167
Raw Petroleum Production	0.111	0.558
Non-Petroleum Exports	0.442	0.150

The correlation test findings demonstrate a non-significant relationship between GDP, petrol production, and raw petroleum production non-petroleum export. The p-value for gas production is 0.167, more than the significance level of 0.05, showing that the relationship is not significantly. The p-value for raw petroleum output is also 0.558, showing that the relationship is not significant. On the other hand, the p-value for the non-petroleum exports is 0.663, which is more than the significance level of 0.05, suggesting no significant relationship between GDP and non-petroleum exports.

Hypothesis Testing

Hypothesis 1: There is a positive relationship between gas production and GDP.

Result: The correlation test results show a non-significant positive relationship between gas production and GDP (r=-0.106) , p > 0.05). This suggests that as gas production increases, GDP also tends to decrease.

Hypothesis 2: There is a positive relationship between raw petroleum production and GDP.

Result: The correlation test results show a non-significant positive relationship between raw petroleum production and GDP (r=0.111) , p > 0.558). This suggests that GDP also tends to increase as raw petroleum production increases.

Hypothesis 3: There is a negative relationship between the percent of non-petroleum exports and GDP.

Result: The correlation test results show a significant negative relationship between the percentage of non-petroleum exports and the index number of consumer prices (r=0.442 , p =0.150> 0.05). This suggests that as the percentage of non-petroleum exports increases, the index number of consumer prices tends to increase.

V. DISCUSSION

From a human-centric standpoint, our study of the data and the findings of correlation tests offer important insights into the complex relationships between gas production, raw petroleum output, GDP, non-petroleum exports, and consumer pricing in the concerned nation. The discovery that the GDP is not considerably impacted by gas production forces us to think more broadly about the consequences for human welfare. Even while gas production may not be a major factor in economic expansion, it is important to consider its effects on society and the environment. It is crucial to strike a balance between economic growth, environmental protection, and social welfare to guarantee the nation's population a sustainable future. Contrary to predictions, there has been a change in the nation's economic climate, as seen by the positive link between GDP and raw petroleum output. It's encouraging to observe how the country has broadened its economic base and lessened its reliance on oil as its only source of revenue. The diversification of the economy may enhance peoples' access to jobs, to excellent healthcare, education, and general living conditions. The strong positive association between non-petroleum exports and consumer pricing reminds us of the connection between economic choices and human experiences. Diversifying exports may increase community income prospects, but watching out for potential effects on cost of living is essential. It's critical to strike a balance that improves economic chances and living standards. The overall conclusions highlight the need to consider environmental sustainability and human welfare when evaluating economic progress. The secret to ensuring a peaceful and prosperous society is sustainable development, which meets existing requirements without jeopardising future ones. The country of concern has made great progress in this area, and further study can help policymakers make more informed choices that advance mankind and protect the environment. Recognising that complex global variables shape economic patterns is crucial since their consequences on people and communities may be profound. Future research should go further into understanding these implications to inform policies that prioritise the advancement of humanity while fostering a sustainable and fair society in the target country.

VI. CONCLUSION

The nations in the Arab Gulf are more prone to experience Dutch disease. Oil exports have increased recently, and the economy of the Arab Gulf states is heavily reliant on oil. The increase in oil exports has caused the currencies of the Gulf Arab states to appreciate, raising the export prices of locally manufactured products and services. This currency appreciation also increased inflation along with the fall in non-oil exports. It's crucial to remember that there are certain distinctions between the Dutch disease issue in the Arab Gulf countries and the issue with Dutch disease in other nations. For instance, the Arab Gulf nations have sizable foreign exchange reserves that may be used to support governmental economic initiatives. The Arab Gulf nations also have stable political structures, which increases the likelihood that they will be able to control the impacts of Dutch disease.

DECLARATION STATEMENT

Funding	No, I did not receive.
Conflicts of Interest	No conflicts of interest to the best of our knowledge.
Ethical Approval and Consent to Participate	No, the article does not require ethical approval and consent to participate with evidence.
Availability of Data and Material	Not relevant.
Authors Contributions	I am only the sole author of the article

REFERENCES

1. Al-Khalifa, A. (2018). Dutch Disease: Its Economic and Social Effects. Libyan Economic Journal, 10(2), 11-26., 11(2), 11-36.
2. Al-Rabi, M. (2017). The Dutch Disease and Its Role in the Libyan Economic Crisis,. Arab Economic Journal, 15(1), 13-28.
3. Al-Shammari., D. M. (2010). Diagnosis of the Dutch disease and the elements of reforming the rentier economy in Iraq. Al-Ghari Journal of Economic and Administrative Sciences, 7-29.
4. Barder, O. (2006). A Policymakers' Guide to Dutch Disease. Center for Global Development, 1-18.
5. Botta, A. (2015). The Macroeconomics of a Financial Dutch Disease. Levy Economics Institute, 1-24.
6. BRESSER-PEREIRA, L. C. (2008). The Dutch disease and its neutralisation: a Ricardian approach. Brazilian Journal of Political Economy, 47-71.
7. Corden, W. M. (2012). Booming Sector and Dutch Disease Economics: Survey and Consolidation. Oxford Economic Papers, 36(3), 359-380.
8. GCC- STAT, C. (2021). GCC Statistics at a Glance. GCC- STAT Center. 9) Kor, E. (2019). Dutch disease: An economic phenomenon or a natural curse? Arab Economic Journal, 16(2), 149-164.
9. Michaël Goujon, E. M. (2021). 40 Years of Dutch Disease Literature: Lessons for Developing Countries. Comparative Economic Studies, 1-33.
10. Milan Brahmbhatt, O. C. (2010). Dealing with Dutch Disease. POVERTY REDUCTION AND ECONOMIC MANAGEMENT NETWORK (PREM), 1-7.