

Impact of International Crude Oil Price on Select Global Economic Factors

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ABSTRACT:

In the global economy international crude oil price playing the vital role comparing with the other economic factors, in the world 70% of the countries are highly depending on imported crude oil which is playing a crucial role in the global exports and imports the present data has been considered for the study from the period 2013-2020. In the recent past international crude oil price has experienced drastic fall which in turn reduce the burden for the major countries on the importing cost in spite of downfall of crude oil price and global imports have increased enormously. The linear regression beta coefficient indicates that global exports got negatively influenced by the international crude oil price. The multi regression model results reveals that fluctuation of dollar index failed to influence the volatility of international crude oil price. The regression weight estimation trend line indicated that the dollar index and Baltic dry index are expected to go down in the near future.

Keywords: Oil Price Shocks; Stock Markets; Economic Growth.

I. INTRODUCTION

Crude oil is a naturally occurring, unrefined petroleum product composed of hydrocarbons deposits and other organic materials. Crude oil can be refined to produce usable products such as gasoline, diesel and various forms of petrochemicals. The modern history of petroleum began in the 19th century with the refining of paraffin from crude oil. In 1846, Baku (settlement Bibi-Hey bat) the first ever well drilled with percussion tools to a depth of 21 meters for oil exploration. In 1848, Young set up a small business refining the crude oil.

TYPES CRUDE OIL:

West Texas Intermediate

This type of oil contains low amounts of sulfur and density. Its sulfur content is only 0.24%

and its gravity is 39.6 degrees. The West Texas Intermediate is considered to be both sweet and light crude oil. The refining of this oil is usually done in Gulf regions as well as the United states because it is conveniently situated to oil reserves.

Brent Blend

The term Brent Blend is obtained from the geographical location where this type of oil is extracted from. Brent Blend is termed as sweet oil having 0.37% sulfur and 38.06 degrees in gravity. Brent Blend oil is typically used for making petroleum and gasoline for vehicles.

Dubai Crude

As the name puts it, the Dubai Crude Oil comes from Dubai- a massive oil producing country in the world. The Dubai crude has a light density, having 31 degrees gravity and a sulfur content of only 2%.

Russian Export Blend

This type of oil has been the standard for Russian crude oil. This is also a perfect example of sour oil because of its high amount of sulfur. Russian expert blend oil is heavily exported to Italy and Netherlands.

Byproducts of crude oil:

Petroleum products are usually grouped into four categories: light distillates (LPG, gasoline, naphtha), middle distillates (kerosene, jet fuel, diesel), heavy distillates and residuum (heavy fuel oil, lubricating oils, wax, asphalt). This classification is based on the way crude oil is distilled and separated into fractions (called distillates and residuum).

- Liquefied petroleum gas (LPG)
- Gasoline (also known as petrol)
- Naphtha
- Kerosene and related jet aircraft fuels
- Diesel fuel
- Fuel oils
- Lubricating oils
- Paraffin wax
- Asphalt and tar

- Petroleum coke
- Further products (see also below) include**
- Sulfur
 - Olefins
 - Heat and electricity energy.

CRUDE OIL IN U.S

For nearly a century the U.S. was both an exporter and importer of crude oil. Exporting domestically produced crude made the U.S. an important participant in the global crude oil market, which sets crude prices. This ended in the 1970s when, in response to the 1973 oil embargo, Congress imposed a ban on domestic oil exports- a ban lifted in late 2015.

The fact is the U.S. is both an importer and exporter of a number of commodities. From an economics standpoint, the U.S. would be in stronger position if domestically produced crude could reach the world marketplace as other goods do every day- to the benefit of U.S. producers and customers. The alternative is a kind of energy isolationism, the shutting-in of domestic production from global markets, depressing prices for that output and eventually discouraging new production. This works against U.S. competitiveness and American consumers.

The process of crude oil refining

Once crude oil is extracted from the ground, it must be transported and refined into petroleum products that have any value. Those products must then be transported to end-use consumers or retailers. The overall well-to-consumer supply chain for petroleum products is often described as being segmented into three components.

Upstream activities

Involve exploring for crude oil deposits and the production of crude oil.

Midstream activities

Involve the distribution of crude oil to refiners; the refining of crude oil into saleable products; and the distribution of products to wholesalers and retailers.

Downstream activities

Involve the retail sale of petroleum products. Gasoline stations are perhaps the most visible downstream companies, but companies that deliver heating oil or propane would also fall into this category.

How does crude oil convert to Gasoline?

Crude oil is converted to gasoline through a relatively simple refining process. The transformation begins with the extraction of oil from the ground, after which it is usually loaded

into large container ships that deliver it to refineries all over the world. As any viewer of news footage has seen, crude oil emerges as a thick black substance, which does not resemble the clear and free-flowing gas used in motor vehicles. This is because crude oil is actually a mixture of hydrocarbons.

USES OF CRUDE OIL

Plastic

This is probably the most widespread use of oil that I can think of. Plastic is used in just about everything that you can find in a store. If an item doesn't contain plastic, then it is probably stored or packaged in the oil-based polymer!

Clothing

Petroleum is used to help make clothing non-flammable and colorful. It is used in the production of rayon, nylon, polyester, and even artificial furs.

Furniture

According to Conoco Phillips, couch cushions are often filled with durable, lightweight polyurethane foam. Also, if you have carpet or linoleum flooring, you probably have a petroleum-based product in your home.

Insulation

The insulation that you find in your home - which keeps unwanted heat from escaping or entering - is a petroleum-based product! This means that we depend on crude oil to regulate the temperature in our homes in more ways than we realize of rayon, nylon, polyester, and even artificial furs.

Cars

I already mentioned above that many car bumpers are made with plastics. However, that's not the only place where crude oil is used in the manufacturing of your car.

Kitchen Items

There are a number of items in your kitchen that rely on petroleum as a part of their production. For your refrigerator, the molded interior panels, door liners, and even the foam insulation are all manufactured using crude oil. Many stoves function by using natural gas.

Relationship between inflation & oil prices

The price of oil and inflation are often seen as being connected in a cause-and-effect relationship. As oil prices move up or down, inflation follows in the same direction. The reason why this happens is that oil is a major input in the economy - it is used in critical activities such as

fueling transportation and heating homes – and if input costs rise, so should the cost of end products. For example, if the price of oil rises, then it will cost more to make plastic, and a plastics company will then pass on some or all of this cost to the consumer, which raises prices and thus inflation.

However, this relationship between oil and inflation started to deteriorate after the 1980s. During the 1990's Gulf War oil crisis, crude oil prices doubled in six months to around \$40 from \$20, but CPI remained relatively stable, growing to 137.9 in December 1991 from 134.6 in January 1991. This detachment in the relationship was even more apparent during the oil price run-up from 1999 to 2005, when the annual average nominal price of oil rose to \$50.04 from \$16.56. During this same period, the CPI rose to 196.80 in December 2005 from 164.30 in January 1999. Using this data, it appears that the strong correlation between oil prices and inflation that was seen in the 1970s has weakened significantly.

Organisation of Petroleum Exporting Countries (OPEC)

The Organisation of the Petroleum Exporting Countries (OPEC) is a permanent, intergovernmental organisation, created at the Baghdad Conference on September 10 – 14, 1960, by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. The five Founding Members were later joined by other member countries such as Nigeria 1971 and Libya in 1962 and as of 2015 has 13 member countries. OPEC's objective is to coordinate and unify petroleum policies among member countries, in order to secure fair and stable prices for petroleum producers; an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on capital to those investing in the industry. OPEC accounts for an estimated 42 % of global oil production and 73 % of the world's "proven" oil reserves, giving OPEC a major influence on global oil prices. OPEC decisions have come to play a prominent role in the oil market and international regulations. The effect can be particularly strong when conflicts or civic disorders lead to unreliable and extended interruptions in supply. In the 1970s, OPEC's restrictions in oil production led to significant price spikes along with OPEC's revenue and wealth, with long-lasting and far-reaching consequences on the global economy. OPEC started setting production targets for its member nations in 1980, and generally a reduction of these production targets lead to an increase in oil prices.

Futures Market

The price of oil as we know it is actually set in the oil futures market. An oil futures contract is a binding agreement that gives one the right to purchase oil by the barrel at a predefined price and date in the future and clients purchase futures to hedge against crude price fluctuations that adversely affects profitability. Futures prices above spot prices that lead to expectations of higher prices in the future can influence oil producers withhold their oil in order to sell it at latter date for higher profits. This can reduce current supply of oil and substantially affect prices.

Speculators and Brokers

Brokers and market speculators have an influence on oil prices. An example of a speculator would be someone who is just guessing the price direction and has no intention of actually buying the product. According to the Chicago Mercantile Exchange (CME), the majority of futures trading is done by speculators as less than 3 % of transactions actually result in the purchaser of the futures contract taking possession of the commodity being traded. In 2008, it was thought that speculators were bidding up oil prices and creating an unsustainable price level (up to \$ 140 per barrel). By late 2009, prices fell to \$ 30 per barrel because the demand was not present to support the inflated price level. Also market sentiment is a key factor in determining oil prices. For example, the mere belief that oil demand will increase dramatically at some point in the future can result in a dramatic increase in oil prices in the present as speculators and hedges also snap up oil futures contracts.

Exchange Value of the Dollar

Crude oil is traded globally in, US Dollars while consumers use local currencies to buy petroleum products. When the US dollar depreciates against other currencies, countries with non-dollar appreciating currencies enjoy cheap oil, while consumers in US Dollar-pegged countries pay a higher price for the same barrel of oil. Changes in the US Dollar will therefore affect world oil demand. Depreciation of the US Dollar versus the appreciation of other currencies will decrease the cost of buying a dollar. This will increase the demand for crude oil, in other currencies than the US Dollar which consequently leads to increases in prices. A negative relationship between the US Dollar exchange rate and the crude oil price changes is thus expected.

Government in Consumer and Producer Countries

About 94% of the world's proved reserves are controlled by governments, thus political

decisions to a large extent control the availability, supply and consumption of oil. Firstly, political imperatives have a major influence on the investments in exploration and production that will consequently affect future prices. Oil investments in producing countries must compete with a number of other priorities, including social and health programmes and other investments to diversify the economy away from dependence on oil production. These other priorities reduce revenue.

International Journal of Petroleum and Petrochemical Engineering available for investment in oil production capacity subsequently affecting prices. For example, as oil prices rose in 2007, ExxonMobil, one of the largest oil companies, was investing \$20 billion annually in capital and exploration projects, while according to OPEC statistics, only three member nations were investing more than \$20 billion in cumulative capital expenditures on upstream projects to come on-line in 2004 through 2012. Governments also provide subsidies on petroleum products for transport, agriculture, industrial and other economic activities to control inflation. These subsidies shield certain sectors from oil price increases. Thus, in countries with subsidies, crude oil demand is largely unresponsive to price changes. BP estimates that these countries that currently or recently subsidized gasoline and other oil products such as China, India, Ghana and Bahrain accounted for 96 % of the world's increase in oil consumption in 2007. On the other hand, in countries without subsidies, demand for oil generally becomes stagnant or falls as global crude oil prices. Energy policy and taxes in oil-rich countries also affect the price of oil. If a government bans oil exploration in a place with proven reserves, such as the Gulf of Mexico, it could lead to a reduction in oil supply. Petroleum agreement regulations and requirements imposed by countries on multi-national oil companies can increase the cost of production and eventually oil prices

Political Tensions

The world supply of oil is reduced by war, terrorism, and guerrilla activities that are as a result of political instability or conflict. Political instability in countries especially oil producing zones such as the Middle East, has had a significant impact on oil production and price. These tensions may arise due to the eruption of long-standing historic rivalry among countries and tribes, religious differences and the control of power and valuable resources like petroleum. Tensions

involving Iran have been associated with some of the highest oil prices in history, and the easing of these tensions have led to price reductions from their record high levels. The largest nominal increase in oil prices prior to the peak in 2008, (\$ 10.75 per barrel), occurred on June 6, 2008 following the remark by an Israeli cabinet minister that Israel might attack Iran. Other events involving Iran, ranging from a missile test to the easing of political tensions, were associated with both increases and decreases in oil prices in July 2008. Iraq's production has been reduced over the past several decades as a result of extended war periods. The intervening years of relative peace were associated with recovery in the levels of production. Iraq's 2008 production of 2 423 thousand barrels per day, following years of recovery from its low production levels in 2003, is still only approximately 69 % of Iraq's peak production of 3489 thousand barrels per day in 1979 prior to the Iran-Iraq war. Violence and insurgent activities in the Niger Delta negatively affect Nigerian oil production. The recurring abduction of foreign workers, attacks on pipelines and sabotage of oil infrastructure have reduced Nigeria's production output. News of unrest in oil producing zones and those associated with oil activities all over the world results in high oil prices.

Economic Factors

Like many other commodities, oil prices are linked to the economic activities of most countries. Demand and consumption of oil by all sectors increases with economic, industrial and population growth and decreases when there is economic recession. Oil importing countries, such as the US and China, will increase their oil demand as a result of economic growth eventually leading to higher oil prices. Oil exporting countries, gain maximum oil profit and economic wealth as a result of higher prices from these increasing demands. If oil prices remain at high levels, economic growth in importing nations might decline, causing a decline in oil demand and prices. High prices will also lead to increases in petroleum investments, exploration and development budgets leading to new oil discoveries and increased supply which over time will causes prices to decline.

Transitory Shock to the world Output Gap

A one-year, one standard-deviation positive shock to the world output gap results in world output rising by around 0.9 percent after one year. Higher world output requires more oil as a factor of production, and as a result, oil prices and

oil production are both higher. As the output gap gradually closes, oil prices and oil production both decline. The dynamics of the real price of oil mirror that of the world business cycle.

Transitory Shock to the Level of World

Trend output a one-year one-standard-deviation shock to the level of world trend output results in a small increase in world GDP, again because actual output converges gradually to the higher level of trend GDP. The limited reaction of actual output means that the resulting increases in oil production and the oil price are both small.

Permanent Disruption in Oil Supply

A permanent one-standard-deviation negative shock to oil supply results in a decline in oil production and an overshoot in oil price of where it eventually settles. The overshoot occurs because oil demand takes to fall in response to higher oil prices. Permanently lower oil production leads higher oil prices and permanently lower world output.

Transitory Disruption in Oil Supply

A one-standard-deviation shock to oil supply produces an immediate reduction in oil production of about 0.3 percent. The oil price jumps by more than 10 percent as a result of such a supply disruption and world output drops by about 0.1 percent for two years. As the shock to oil supply is temporary, the oil price declines back to baseline in the second year.

Oil supply scenarios

The scenarios illustrate the effect of an exogenous marginal change in the supply of oil. The pessimistic scenario assumes an exogenous shock that gradually reduces oil supply by 1 million barrels per day by 2025. That scenario relates, for example, to event such as an increase in environmental restrictions on oil extraction that could stem from the nationally determined contributions to reduce greenhouse gas emissions-to limit global warming below 2degrees Celsius – agreed upon at the COP21 in Paris in 2015. In contrast, the optimistic supply scenario assumes a positive shock to extraction technology or the discovery of new oil fields that contributes an extra 0.4 million barrels of oil per day to oil supply 2025. The asymmetry in the size of shocks to supply reflects the stylized fact that it is more difficult to increase oil supply over time than reduce it.

Oil Demand

$\log(-1) = +1(-1) - 2 \log(-1) - 3 \log(1) - 1 - 10$

The oil demand equation captures three determinants of demand. First, the demand for oil

grows with world GDP growth. The parameter 1 represents the elasticity of oil demand growth with respect to world GDP growth. The parameter 2 represents the short-run price elasticity of demand, while the sum of 2 and 3 is the long-run elasticity of demand. The latter includes a ten-year lag, reflecting the time it takes to improve the fleet efficiency of the stock of automobiles in response to a sustained increase of oil prices.

II. RESEARCH METHODOLOGY

SCOPE OF THE STUDY:

The present study as been focused on the role of international crude oil price in the global economy growth. The study is considering historical data from the period 2010-2017. The following global economic variables are considered in the study.

- Crude oil index
- Global Gross Domestic Product
- Global inflation
- Global exports
- Global imports
- Dollar index
- Baltic Dry Index

OBJECTIVES OF THE STUDY

- To study the relationship of international crude oil price with the select global economic factors.
- To study the international crude oil price influence on global economy.
- To measure the future growth of global economy with international crude oil price.

HYPOTHESIS:

Ho: There is no relationship of crude oil prices with global economic factors.

H1: There is a relationship of crude oil prices with global economic factors.

Ho: There is no impact of international crude oil prices on global economy.

H1: There is a impact of international crude oil prices on global economy.

METHODOLOGY OF THE STUDY

The present study has been emphasized on secondary data by using descriptive statistical tools. The following variables have been considered for the study and applied various statistical tools according to the objectives.

1. To satisfy to study the relationship of international crude oil price with the select global economic factors bi-variate tool is used.

Bi-variate correlation: Bi-variate correlation is a measure of the relationship between the two variables; it measures the strength of their relationship, which can range from absolute value 1 to 0. The stronger the relationship, the closer the value is to 1. The relationship can be positive or negative; in positive relationship, as one value increases, another value increases with it. In the negative relationship, as one value increases, the other one decreases.

2. To satisfy to study the international crude oil price influence on global economy ordinary least square is used.

Ordinary least square (OLS):

In statistics, ordinary least square (OLS) is a type of linear least squares method for estimating the unknown parameters in a linear regression model. OLS chooses the parameters of a linear function of a set of explanatory variables by the principle of least squares: minimizing the sum of the squares of the differences between the observed dependent variable (values of the variable being predicted) in the given dataset and those predicted by the linear function. The least squares method is a form of mathematical regression analysis that finds the line of best fit for a dataset, providing a visual demonstration of the relationship between the data points. Each point of data is representative of the relationship between a known independent variable and an unknown dependent variable.

3. To satisfy the objective to measure the future growth of global economy with international crude oil price vector auto regression tool is used.

Vector auto regression – EViews software: An econometric model used for the linear interdependencies among the time series. VAR model generalizes the univariate autoregressive model (AR model) which allows for more than one variable.

$$y_1 = c(1) + c(11)*y_1(-1) + c(12)*y_1(-2) + \dots + c(21)*x_1(-1) + c(22)*x_1(-2) + \dots + \dots$$

III. REVIEW OF LITERATURE:

Rabah Arezki, Hou Wang "oil prices and the global economy"(January 2017): This is a sample macroeconomic model of the oil market. The model incorporates features of oil supply such as depletion, endogenous oil exploration and extraction, as well as features of oil demand such as the secular increase in demand from emerging-market economies, usage efficiency, and endogenous demand responses. The model provides, inter alia, a useful analytical framework to explore the effects of a change in world GDP

growth, a change in the efficiency of oil usage and a change in the supply of oil. Notwithstanding that sale oil production today is more responsive to prices than conventional oil, our analysis suggests that an era of prolonged low oil prices is likely to be followed by a period where oil prices overshoot their long-term upward trend.

Kamiar Mohaddes and M. Hashem Pesaran (July 2016): The recent plunge in oil prices has brought into question the generally accepted view that lower oil prices are good for the US and the global economy. In this paper, using a quarterly multi-country econometric model, we first show that a fall in oil prices tends relatively quickly to lower interest rates and inflation in most countries. Oil prices tend relatively quickly to lower interest rates and inflation in most countries. And increases global real equity prices. Taking demand and supply adjustments to oil price changes as a whole, we conclude that oil markets equilibrate but rather slowly, with large episodic swings between low and high oil prices.

Yanan he, shouyang wang "Global economic activity and crude oil prices" (2010): The empirically in vestiges cointegrating relationship between crude oil prices and global economic activity. The kilian economic index this used as an indicator of global economic activity. Based on a supply-demand framework and the cointegration theory, we find that real futures prices of crude oil are cointegrated with the kilian economic index and a trade weighted US dollar index, and crude oil price are influenced significantly by fluctuations in the kilian economic index through both long run equilibrium conditions.

Noureddine Krichene "World crude oil and natural gas: a demand and supply mode" (29 August 2002).

The world markets for crude oil and natural gas over the period 1918–1999; it analyses the time-series properties of output and prices and estimates demand and supply elasticities during 1918–1973 and 1973–1999. Oil and gas prices were stable during the first period; they became volatile afterwards, reflecting deep changes in the market structure following the oil shock in 1973. Demand price elasticities were too low; however, demand income elasticities were high. Supply price elasticities were also too low. The elasticity estimates help to explain the market power of the oil producers and price volatility in response to shocks, and corroborate elasticity estimates in energy studies.

Linghui Tang, Shawkat Hammoudeh "An empirical exploration of the world oil price

under the target zone model”(11 September 2002).

These investigates the behavior of the world oil price based on the first-generation target zone model. Using anecdotal data during the period of 1988–1999, we found that OPEC has tried to maintain a weak target zone regime for the oil price. Our econometric tests suggest that the movement of the oil price is not only manipulated by actual and substantial interventions by OPEC but also tempered by market participants’ expectations of interventions. As a consequence, the non-linear model based on the target zone theory has very good forecasting ability when the

oil price approaches the upper or lower limit of the band.

IV. DATA ANALYSIS & INTERPRETATION

Objective 1. To study the relationship of international crude oil price with the select global economic factors

H0: There is no relationship of crude oil prices with global economic factors.

H1: There is a relationship of crude oil prices with global economic factors.

Correlations								
		Crude oil index	GDP	imports	exports	inflation	BDI	dollar index
Crude oil index	Pearson Correlation	1	-.791*	-0.461	-0.53	-.873**	0.353	.967**
	Sig. (2-tailed)		0.034	0.25	0.177	0.005	0.391	0
	N	8	7	8	8	8	8	8
GDP	Pearson Correlation	-.791*	1	.826*	.894**	.790*	-0.54	.848*
	Sig. (2-tailed)	0.034		0.022	0.007	0.035	0.211	0.016
	N	7	7	7	7	7	7	7
Imports	Pearson Correlation	-0.461	.826*	1	.869**	0.251	-0.621	0.641
	Sig. (2-tailed)	0.05	0.022		0.005	0.548	0.1	0.087
	N	8	7	8	8	8	8	8
Exports	Pearson Correlation	-0.53	.894**	.869**	1	0.424	-0.619	0.701
	Sig. (2-tailed)	0.007	0.007	0.005		0.295	0.102	0.053
	N	8	7	8	8	8	8	8
Inflation	Pearson Correlation	-.873**	.790*	0.251	0.424	1	-0.054	.780*
	Sig. (2-tailed)	0.005	0.035	0.548	0.295		0.9	0.022
	N	8	7	8	8	8	8	8
BDI	Pearson Correlation	0.353	-0.54	-0.621	-0.619	-0.054	1	-0.513
	Sig. (2-tailed)	0.001	0.211	0.1	0.102	0.9		0.194
	N	8	7	8	8	8	8	8
dollar index	Pearson Correlation	-.967**	.848*	0.641	0.701	.780*	-0.513	1
	Sig. (2-tailed)	0	0.016	0.087	0.053	0.022	0.194	
	N	8	7	8	8	8	8	8

*. Correlation is significant at the 0.05 level (2-tailed).

INTERPRETATION

It indicates that all global economic factors are having negative relationship with crude oil except BDI. In which GDP (-0.791), imports (-

0.461), exports (-0.530), inflation (-0.873), dollar index (-0.967) is having negative relationship respectively and probability value of those variable are seemed to be statistically non-significant at 5%

level. Hence concluded that there is negative relationship of GDP, imports, exports, inflation, dollar index with crude oil and observed that BDI is having positive relationship with crude oil. Hence it is concluded that alternative hypothesis has been accepted and null hypothesis has been rejected.

Objective 2. To study the international crude oil price influence on global economy

H0: There is no impact of crude oil on GDP

H1: There is impact of crude oil on global GDP

Dependent Variable: GDP				
Method: Least Squares				
Sample (adjusted): 2 35				
Included observations: 34 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.904225	1.0271	0.8804	0.3852
DCRUDE	0.150668	0.051	2.95253	0.0059
R-squared	0.214095	Mean dependent var		0.70098
Adjusted R-squared	0.189536	S.D. dependent var		6.63729
S.E. of regression	5.975271	Akaike info criterion		6.47016
Sum squared resid	1142.524	Schwarz criterion		6.55994
Log likelihood	-107.993	Hannan-Quinn criter.		6.50078
F-statistic	8.717408	Durbin-Watson stat		3.28773
Prob(F-statistic)	0.005862			

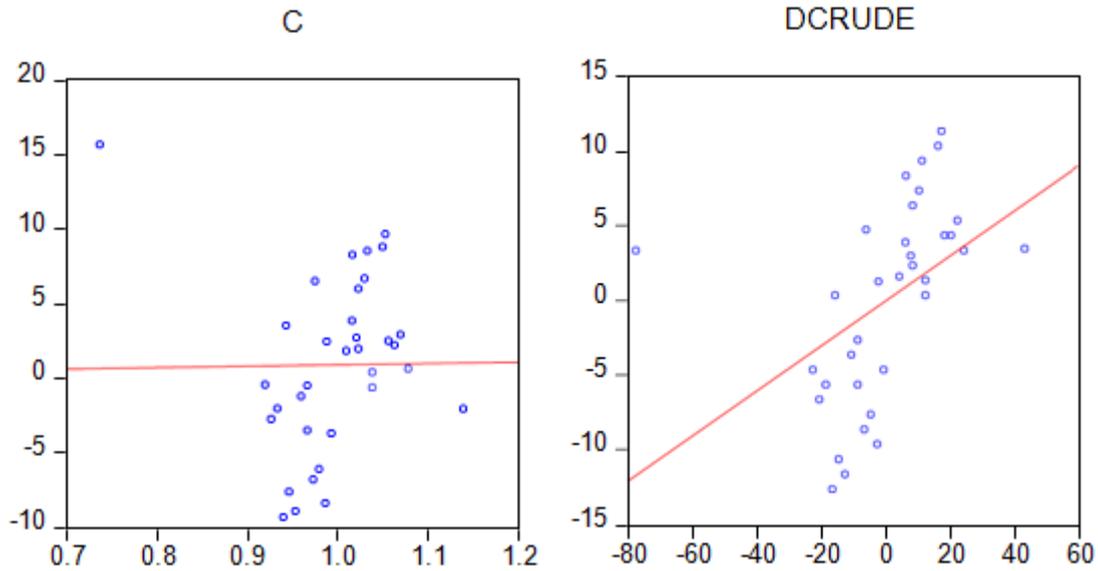
INTERPRETATION:

Independent variable crude oil dependent variable GDP

The above table reflects the ordinary least square results to examine the impact of crude oil on GDP. The probability value for all the GDP found to be significant i.e, lesser than

0.05. The coefficient value (0.150668) it has positive influence on GDP. Hence the study concluded that crude oil influence is observed on the movement of GDP. Therefore Alternate hypothesis has been accepted & rejected Null hypothesis.

GDP vs. Variables (Partialled on Regressors)

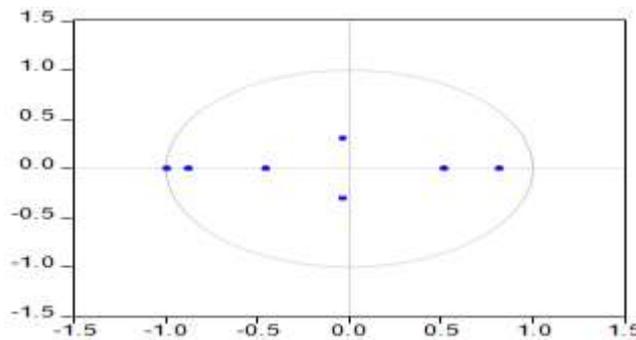


INTERPRETATION:

The above leverage graph indicates that GDP having a positive direction on crude oil prices as the trending line is moving from bottom to upward direction

Objective 3. To measure the future growth of global economy with international crude oil price

Inverse Roots of AR Characteristic Polynomial



INTERPRETATION:

The above graph of polynomial indicates the distribution of data for selected variables of the

VAR roots are fallen inside the circle which indicates the data is normally distributed. Hence the vector auto regression can be applied.

Included observations: 33 after	
Adjustments	
Standard errors in () & t-statistics in []	
	CRUDE
CRUDE (-1)	0.265733
	-0.13357
	[1.98940]
C	-0.082504
	-2.34396
	[-0.03520]

GDP	-0.649978
	-0.77863
	[-0.83477]
BDI1	0.011695
	-0.00818
	[1.42999]
IMPORTS	0.665162
	-0.7286
	[0.91294]
EXPORTS	-0.933406
	-0.71791
	[-1.30018]
DOLLAR	0.624786
	-0.28064
	[2.22627]
INFLATION	-0.453055
	-0.61915
	[-0.73174]
R-squared	0.911677
Adj. R- squared	
	0.886947
Sum sq. resids	3442.133
S.E. equation	11.73394
F-statistic	36.86475
Log likelihood	
	-123.5061
Akaike AIC	7.970064
Schwarz SC	8.332854
Mean dependent	
	16.77725
S.D.	
dependent	34.89819

INTERPRETATION:

The above analysis of vector auto regression indicates of CRUDE OIL, GDP, IMPORTS, EXPORTS, BDI, INFLATON, DOLLAR INDEX with the CRUDE INDEX. The coefficients value of GDP, EXPORTS, INFLATION is having negative direction in future it may expected to fall down based on CRUDE OIL prices.

V. FINDINGS

- Correlation test examined that, Crude oil with BDI had shown significant positive and moderate relationship, while remaining Global Economic factors is negatively correlated with crude oil.
- The study examined that, global economic factors such as GDP, Inflation and Dollar index shows significant strong and negative relationship with crude oil prices.
- Least Square method reflect that, International crude oil prices has significant positive

influence on select global economic factors, except export shows significant negative influence.

- The study found that Global GDP and BDI had significant strong influence on International crude oil prices, while Imports and Inflation shows significant low influence.
- The study predicts, Economic factors such as GDP, BDI and Inflation has significant strong influence on International crude oil price in near futures.
- It also predicts, select global economic factor growth has significant impact on Crude oil prices.

VI. CONCLUSION

The study concludes titled crude oil price role in global exports and imports for the period of 2009-2018. The present study has been emphasized by considering few macroeconomic- variable of the world. The study observed that dollar index is failed to influence the international crude oil price fluctuation. The Baltic dry index is expected to go down in near future based on international crude oil price fluctuation. The global exports found to be negatively influenced by international crude oil price. Hence, there is a further scope to do research by considering various other macro-economic variables along with the crude oil production which may have influence on international crude oil price in the near future.

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