

OIL PRICE & INDIAN RUPEES

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Abstract:

It a study about fluctuations in oil prices over foreign exchange rate in the context of Indian rupee. This research is carried out with basis on the case studies which are taken based on the references from different authors who have done their research regarding the fluctuations in oil price and USD/INR rate. The emphasis is mainly on the relationship between and USD/INR rate and oil prize. No other economic studies or variables are included. Data analysis is done only to find out the relationship between and growth significance of both the variables. No hypothesis has been checked to find out the possible measures to overcome the situation.

Keywords: *Oil prices, Foreign Exchange, Indian Rupee, USD*

INTRODUCTION:

In finance, an **exchange rate** is the rate at which one currency will be exchanged for another. It is also regarded as the value of one country's currency in relation to another currency(wikipedia, 2018)And here the study is about why does the Indian currency rate changes day by day , what influences the currency rate , how does it influence and what are the possible measurements to be taken to improve the volatility.

India is the 7th largest country with the land mass of 3.29 million square Kilo meter and second largest in population of over 1.2 billion. It accounts for 17.2 percent of the world population. The country has to produce about one trillion worth of GDP to fulfil the needs of its huge population. In order to produce this one trillion dollar worth of output, India needs 2.5 million barrels of oil per day. This is 4.4 percent of total world demand for oil. The growth rate of demand for oil is around 6.8 percent(FCCI, 2018). This ever growing demand exerts profound influence on the growth and inflation levels in India (A. Hidhayathulla & B, 2014). Indian economy has been confronting the twin issues of mounting exchange unevenness and persevering expansion. Oil comprises 33% of the nation's aggregate imports and is considered to have colossal effect on its economy. This paper exactly looks at how oil value vacillations affect Indian economy through various channels, viz. genuine segment, fiscal arrangement, outer exchange, exchange rate and speculation. The consequences of repetitive relationship investigation propose that oil is genius patterned to yield, value level, securities exchange, gold, loan cost and remote exchange holds, while it is counter-repeating to cash supply, net fares and exchange rate. Likewise, it is discovered that oil Granger causes yield, general value level and net fares. The investigation utilizes vector auto-relapse (VAR) examination and inspects variance deterioration to catch the direct between conditions among the variables. The auxiliary security tests exhibit that there is no proof of basic break in the VAR model, affirming the unwavering quality of assessed connections under the VAR model.

OBJECTIVES:

1. To find out the correlation between the oil price and exchange rate.

2. To find out the impact of external factors on exchange rates on the Indian basis.
3. To examine the effects of oil price on exchange rate of Indian rupee against US dollar during the last decade
4. To find the possible measurements to reduce the volatility in the market.

The fluctuations in oil price are one of the factors by which foreign exchange rate gets affected.

It affects the foreign exchange market because the hike or fall in oil price creates inflation in India as it is one among the largest importer of crude oils. And there are a lot of issues which India has been facing during the last decade and among that there are a few recent developments which have mostly talked about. Oil has always been one of the most dynamic and influential commodities. Recently it has become increasingly important to study the oil – macroeconomic dynamics in the context of developing nations, especially India due to the following points. India is one of the countries that are being projected for fastest growth in fuel consumption corresponding to their growth in GDP given the drastic policy change in India with the deregulation of oil pricing, it is critical to understand the impact of oil price shocks on economic and investment activities in the country Oil constitutes more than one third of the total imports value in India, which is struggling with high current account deficit(CAD)A Value at risk analysis was reported to suggest that with every \$10 increase in oil prices, CAD would rise by 0.4 percentage points.

This research talked about how fluctuation in oil price can influence the relationship between the Indian currency and the international currency (USD)and the what trend the fluctuations has been going through in the past few decades .

REVIEW OF LITERATURE:

1) Foreign exchange rate.

In finance, an exchange rate is the rate at which one currency will be exchanged for another. It is also regarded as the value of one country's currency in relation to another currency (Wikipedia, 2018).

2) Factors that affect foreign exchange rate:

As said above foreign exchange rate is the rate at which the home currency will be exchanged for a foreign currency, especially international currency like USD. supply and demand inflation, government intervention, interest rates, and capital deficits are the few factors that affects the exchange rates “ (visual capitalist, 2017).In the words of (Obadi & Othmanov??, 2012)In addition to the fundamental market factors (supply and demand) there are many others, such as, speculation in the crude oil markets, the less predictable factors (political instability hurricanes, tsunami, etc.), the US Dollar exchange rate as a more discussed factor in the energy-economic literature at least in the last two decades and other factors like capacity of the so-called downstream sector.

3) Fluctuations in oil price:

Oil and natural gas volumes located in unconventional reservoirs, such as heavy oil, oil shale's, tight gas reservoirs, gas shale, and coal seams, are much larger than what has been produced thus far, primarily from conventional reservoirs. The key to the future will be the development of new technology that allows the industry to produce oil and gas from these unconventional reservoirs in an environmentally accept-able manner. Other factors will also affect both the supply and demand of oil and gas in the coming decades. One major factor is concern over the environment. As such, CO2 sequestration and environmentally friendly operations will be a large part of developing new resources. Other factors, such as technology breakthroughs in nuclear power, biofuels, or solar energy, can be expected to alter the

demand for energy from hydrocarbons. Throughout the process, the development of materials, especially those that can withstand high-pressure, high temperature, and high-stress conditions, will be important to the entire industry (Holditch & Chianelli, 2008)

4) Supply and demand :

It is clear that the world can use all of the energy the industry can produce from oil; natural gas; coal; nuclear energy; and renewable energy sources, such as wind, sun, biofuels, and hydroelectric power. It is also clear that, for the next few decades, oil, gas, and coal will continue to be the primary energy sources. The energy industry will have to continue increasing the supply of the hydrocarbon fuels to meet the global energy demand(Holditch & Chianelli, 2008)

5) Relationship between exchange rate and oil price :

In the words of (Ojebiyi & Wilson, 2011)exchange rate volatility through an analysis of the relationship between the Nigerian Naira, oil prices and US dollar. The model results show that there is a weak/negative relationship between exchange rate and oil price as there are other factors that bring about changes in oil price other than the exchange rate. The activities of cartel pricing policy and oil speculators too have come to greatly affect the price of crude oil. The results convey that there are other factors that affect the change in oil price apart from the exchange rate. Crude oil price change is usually very sensitive to events around the world and tensions in the oil producing nations. OPEC too affects the price of crude oil by increasing or decreasing the allocations to be sold by the countries.

6) Methodology

In the words of (Fratzcher, Schneider, & Robays, 2014)To assess the interlink ages between exchange rates and oil prices we rely on a structural six-variable VAR model that models the evolution of the endogenous variables as dependent on their own current and past values, current and past values of other endogenous variables, exogenous variables and an error term.

In the words of(Mulwa, 2013) Regression analysis was used to find out whether exchange rate fluctuations as an independent variable has an influence on the changes in retail oil prices. And in the words of (Breitenfellner & Cuaresma, 2008)The exchange rate/oil price link has been defined as a kind of natural relationship by Mundell, 2002, p. 1: “[t]here is a definite link between monetary policies, exchange rates and commodity prices (...)”.Theoretical Models of the Oil Price – Exchange Rate Link and Empirical Evidence.

7) Relationship between:

Oil price as external factor certainly affects the Indian economy, especially the Indian currency where US dollar is the acceptable currency in International market, thus it became the problem of research investigation. The impact has been assumed regarding exchange rate of rupee to dollar alone. So the impact assessment would be partial, because oil prices can penetrate into other macro-economic variables and all the sectors of the economy(A. Hidhayathulla & B, 2014)

8) Influences:

The vast majority of these materials use the dollar as a pricing mechanism for global trade because the U.S. is the strongest and most stable economy in the world. When the dollar strengthens, it means that commodities become more expensive in other, nondollar currencies. This tends to have a negative influence on demand. Conversely, when the dollar weakens, commodity prices in other currencies move lower, which increases demand (D. A. Hidhayathulla & Rafee.B, 2014)

RESEARCH METHODOLOGY:

Going further towards the nature of the paper, it is descriptive in nature. This means that the paper describes the relationship between oil price fluctuations and foreign exchange rate n Indian currency basis and measurements to control the volatility in the exchange rates. The data analysis here is done based on data collected from the last decade, i.e. 2007 to 2017. Data collected are secondary in nature and they are collected mainly from the annual reports of OPEC (website), oil price.com (website) and investing.com (website).

Limitations of the study:

1. As the study is completely based on secondary data , the accuracy of the analysis is subject to the accuracy of the data.
2. The topic is related to two different markets, i.e. oil market and foreign exchange market its has become a very broad area of research.
3. There are existing papers which are similar to the study and therefore the focus of the papers should be clear and unique.

WHAT ARE THE FACTORS AFFECTING FOREIGN EXCHANGE RATES ?

Exchange rate (Forex rate) is one of the most important means through which a country's relative level of economic health is determined. A country's foreign exchange rate provides a window to its economic stability, which is why it is constantly watched and analyzed

Exchange rates are very volatile in nature and the factors that become the reason behind this volatility are for example government debts, inflation rates, nations current account/ balance of payment, political stability, recession etc.

1. Inflation rates

The differentials in the inflation rates affect the growth and fall of the currency of a country, in this case a country with a consistently lower inflation rates will exhibit a rising currency value because here its purchasing will increase relative to the other countries. When we look at the late 20th century, countries like Japan, Germany and Switzerland had lower inflation rates with U.S and Canada achieving it later with them. These countries had gained an appreciation in their currency value in the early 21st century, while the countries with higher inflation rates had a depreciation in their currency value in comparison to their trading partners.

2. Government debts

Countries will engage in large-scale deficit financing to pay for public sector projects and governmental funding. While such activity stimulates the domestic economy, nations with large public deficits and debts are less attractive to foreign investors. The reason? A large debt encourages inflation, and if inflation is high, the debt will be serviced and ultimately paid off with cheaper real dollars in the future.

In the worst case scenario, a government may print money to pay part of a large debt, but increasing the money supply inevitably causes inflation. Moreover, if a government is not able to service its deficit through domestic means (selling domestic bonds, increasing the money supply), then it must increase the supply of securities for sale to foreigners, thereby lowering their prices. Finally, a large debt may prove worrisome to foreigners if they believe the country risks [defaulting](#) on its obligations. Foreigners will be less willing to own securities denominated in that currency if the risk of default is great. For this reason, the country's debt rating (as determined by [Moody's](#) or [Standard & Poor's](#), for example) is a crucial determinant of its exchange rate

Loan costs

Changes in financing cost influence currency esteem and dollar exchange rate. Forex rates, loan costs, and expansion are altogether connected. Increments in loan fees cause a nation's currency to acknowledge in light of the fact that higher financing costs give higher rates to banks, in this way pulling in more foreign capital, which causes an ascent in exchange rates

Nation's Current Account/Balance of Payments

A nation's present record reflects parity of exchange and profit on foreign venture. It comprises of aggregate number of exchanges including its fares, imports, obligation, and so on. Parity of instalments vacillates exchange rate of its residential currency.

Government Debt

Government obligation is open obligation or national obligation claimed by the focal government. A nation with government obligation is less inclined to gain foreign capital, prompting expansion. Foreign financial specialists will offer their securities in the open market if the market predicts government obligation inside a specific nation. Thus, a reduction in the estimation of its exchange rate will take after.

Political stability and performance

A nation's political state and monetary performance can influence its currency quality. A nation with less hazard for political unrest is more alluring to foreign financial specialists, therefore, drawing speculation far from different nations with more political and monetary stability. Increment in foreign capital, thusly, prompts a thankfulness in the estimation of its residential currency. A nation with sound budgetary and exchange strategy does not give any space for vulnerability in estimation of its currency. In any case, a nation inclined to political perplexities may see a deterioration in exchange rates.

Recession

At the point when a nation encounters a recession, its financing costs are probably going to fall, diminishing its odds to gain foreign capital. Accordingly, its currency debilitates in contrast with that of different nations, in this way bringing down the exchange rate.

Speculation

In the event that a nation's currency esteem is required to rise, speculators will demand a greater amount of that currency with a specific end goal to make a benefit sooner rather than later. Accordingly, the estimation of the currency will ascend because of the expansion in demand. With this expansion in currency esteem comes an ascent in the exchange rate also.

Inflation Rates

Changes in showcase expansion cause changes in currency exchange rates. A nation with a lower expansion rate than another's will see a gratefulness in the estimation of its currency. The costs of merchandise and ventures increment at a slower rate where the expansion is low. A nation with a reliably bring down swelling rate displays a rising currency esteem while a nation with higher expansion regularly observes deterioration in its currency and is typically joined by higher loan fees

Terms of Trade

Identified with current records and parity of instalments, the terms of exchange is the proportion of fare costs to import costs. A nation's terms of exchange enhances if its fares costs ascend at a more prominent rate than its imports costs. This outcomes in higher income, which causes a higher demand for the nation's currency and an expansion in its currency's esteem. This outcomes in a valuation for exchange rate.

As it is a very well known fact the crude Oil's value affect everywhere throughout the world. It changes the worldwide monetary circumstance.

Presently, fluctuation of currency relies upon which part of the world one lives in. Assuming that one lives in India and Rupee is the prime concern. At that point first thing to watch is that India is one of the biggest oil user, fourth after US, China and Japan bringing in a huge share of it from Middle East nations (individuals from OPEC). Presently if oil cost by one means or another goes down, which is going at the moment, at that point India, for a similar measure of crude oil, should pay less measure of USD consequently as it is realized that all global business exchanges happen in USD. India will purchase USD against Indian Rupee from the world market and with this diminished interest of USD made by India, obviously estimation of USD against INR goes

down and will get more USD for same measure of INR now. Primary concern is that USD is debilitated against INR.

Fascinating piece of this entire fit of rage is the vicious circle. Because if Oil creating nation is getting less instalment, its economy begins contracting. The majority of its future undertakings begin shaking since they all very relied upon the back leaving oil offering. So there is a tendency to back off the oil conveyance and sit tight for the correct minute until the point when the oil cost again shoots up. Some solid nations, in any case, keep proceeding with the oil conveyance despite the fact that at bring down cost. Just like Saudi Arabia is doing well currently notwithstanding gigantic pressure from all other countries. On the off chance that ones take a gander at the current USD/INR conversion scale graph versus Oil value diagram, you will find that USD has just reinforced despite the fact that Oil cost is getting abridged each day.

It is going on because conversion standard relies upon different factors as well. On the off chance that China, for instance, begins purchasing extensive measure of oil unexpectedly on the other hand USD esteem may go up which will progressively affect USD-INR conversion standard too. Likewise there are couple of different factors as following -

- Trade balance between USA and India
- Rate of Inflation
- Rate of Interest rates
- FII
- FDI

US Dollar is cash of universal exchange, so for all down to earth reason all purchase and deals on global level is characterized as far as USD. Presently, say Dubai Fateh 32 API benchmark oil in neighbourhood money is at 200 UAE Dirham for every barrel and 50 USD/barrel in global market. Presently, if USD reinforces, it will mean one dollar ought to have the capacity to purchase more than what it prior purchased - which implies that what is privately evaluated at 200 Dirham should now be accessible at say 45 USD. Thus the cost of crude goes down. This is the connection Dollar esteem and crude oil share - fortifies different debilitates. Every one of the numbers I have used are speculative, just to clarify the idea here. Likewise, US is the greatest merchant of crude oil. So say when crude cost go up, it implies US will spend more dollars to get it, which implies more dollars are leaving the nation and thus the dollar will debilitate. Same would be genuine other path round. However, this is the point at which we take a gander at it in disengagement. US is likewise one of the greatest oil maker - so when oil cost will go up, its own oil income will likewise go up - this effect may counter the fall in dollar a little however not fundamentally because it is a net merchant. In any case, at that point there is another factor which comes in play. In the event that oil cost goes up, it is up for rest of the world moreover. They exchange oil in dollars, so now they should spend more dollars to purchase oil - thus request of dollars go up in worldwide market. This will again counter the fall of dollar because of expanding oil cost.

What causes the international oil prices to fluctuate?

There are several factors, both economic and political, that can cause fluctuations in oil prices. OPEC is widely seen as the most influential player in oil price fluctuations, but basic supply and demand factors, production costs, political turmoil and even interest rates.

OPEC's Influence on Oil Prices

OPEC, or the Organization of Petroleum Exporting Countries, is the main controller of variations in oil prices. OPEC controls 40% of the world's oil supply. The organization sets production levels to meet international demand and can influence the price oil by varying the production.

Supply and Demand Impacts on Oil Prices

When supply is more than demand, prices decline and the inverse is also true when demand exceeds supply. The 2014 decline in oil prices can be reasoned to a lower demand for oil in Europe and China, coupled with a regular supply of oil from OPEC.

Impact of Natural Disasters and Political Situations on the Price of Oil

Natural disasters also affect in the fluctuation of oil prices. For example, when Hurricane Katrina struck the southern U.S. in 2005, affecting 19% of the U.S. oil supply, it caused the price per barrel of oil to rise significantly. Political instability in the Middle East causes oil prices to fluctuate, as the region accounts for most of the worldwide oil supply. For example, in July 2008 the price for a barrel of oil reached \$136 due to the unrest and consumers' fears about the wars in both Afghanistan and Iraq.

Production Costs, Storage Impact on Oil Prices

Production costs can greatly influence the oil prices to rise or fall as well. While oil in the Middle East is relatively cheap to extract, oil in Canada is more costly. Once the supply of cheap oil gets exhausted, the price could rise rapidly if the only remaining oil is in the tar sands.

Interest Rate Impact on Oil Prices

While there are mixed reviews, the reality is that oil prices and [interest rates](#) have some correlation between them, but are not correlated exclusively. Increasing interest rates affects consumers' and manufacturers' costs, which reduces the amount of time and money people spend driving. In this way, when interest rates reduce, consumers and businesses are able to borrow and spend money more easily, which drives up demand for oil.

The relationship between USD, Rupees, and Oil Price?

Investment selections of oil investors directly have an effect on the futures costs of oil. They speculate value changes and take vital selections. The money market selections drive the market costs. The import of fossil fuel continues to stand up once the fossil fuel future value will increase. The oil imports so became a considerable supply of demand for dollar in India's interchange market. This robust +demand contributes to strengthen the dollar against rupee, among the opposite factors.

Oil value and imports are rising unceasingly. This pushes up the demand for dollar that strengthens the dollar against rupee and rupee is greatly deprecatory. This erodes getting power of Indian currency within the international market. The domestic oil offer augmentation and management over oil demand appears to be viable policy choice to overcome charge per unit depreciation and its consequences. Rebounding oil costs have pushed up oil import prices and can widen India's existing currency account deficit.(FCCI, 2018)

BACKGROUND

Rupee has been facing many headwinds recently. The Rupee USD rate of exchange depreciated to associate degree the lowest of sixty eight.⁹⁴ on June twenty eight, 2018 that is such as the sharp drop witnessed in August 2013. Economists were asked to share their prognosis regarding the movement of Rupee over close to term and also the probability of Rupee USD rate of exchange breaching the seventy mark. Economists were also additionally asked to share their thoughts on the truthful price of Indian monetary unit.

Participating economists unanimously felt that the Rupee can still depreciate in 2018-19. it had been felt that movement in oil costs and domestic furthermore as world economic developments can stay the 2 key swing factors for the Rupee price. Widening current account deficit and higher inflationary pressures arising out of increasing crude oil prices are already pulling the currency down. Therefore, any rise in oil prices can poses significant risks to the fair value of currency.

Global uncertainties around trade and monetary markets additionally carry serious risks to the Rupee. Trade tensions between major economies square measure distressing the worldwide economic recovery and may place the worldwide economic order in peril. in addition, a tighter financial policy stance of Federal Reserve, volatile world monetary markets and increasing geo-political uncertainties square measure conducive to higher foreign capital outflows, thereby golf shot a downward pressure on the Rupee rate of exchange.

On the domestic front, it had been recommended that as Bharat approaches state elections in late 2018 and general elections in early 2019, markets can worth in larger degree of political risk premium for the Indian monetary unit. Even though economists universally believe that the Rupee can stay below strain, they were divided on the argument on whether or not the Rupee/US greenback rate of exchange may breach the seventy mark. around, 1/2 the respondents felt that it had been a extremely probable state of affairs. However, they additionally united that the slip would be temporary in nature as historical proof suggests that the Rupee tends to recover and move to its baseline trend. most economists believe that any sharp weakening of the Rupee (with or while not breaching the seventy mark) is unlikely to sustain for long. Economists square measure optimistic regarding the general sentiment concerning the Indian economy and feel that favourable capitalist confidence and a promising long-run growth story can add favour of transferral stability to the Rupee, going forward.

On being asked regarding the truthful price of the currency, majority of the economists believed that the truthful price of Indian monetary unit vis-à-vis the US greenback would be within the vary of sixty five to sixty six. Rupee has been facing many headwinds recently. Economists were asked to share their prognosis regarding the movement of Rupee over close to term and also the probability of Rupee greenback rate of exchange breaching the seventy mark. Economists were additionally asked to share their thoughts on the truthful price of Indian monetary unit. Participating economists felt that the Rupee can still depreciate in 2018-19. it had been felt that movement in oil costs and domestic furthermore as world economic developments can stay the 2 key swing factors for the Rupee price. Widening accounting deficit and better inflationary pressures arising out of skyrocketing international fossil oil costs square measure already actuation the currency down. Therefore, any more rise in oil costs poses important risks to the truthful price of currency.

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capitalist confidence and a promising long-run growth story can add favour of transferral stability to the Rupee, going forward

DATA ANALYSIS

T-TEST

[DataSet1]

Warnings

The Paired Samples Correlations table is not produced.
The Paired Samples Test table is not produced.

Paired sample statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Oil Price	57.657252a	119	8.67567270	.795297613
	USD/INRPrice	57.657252a	119	8.67567270	.795297613

a. The correlation and t cannot be computed because the standard error of the difference is 0.

Descriptive Statistics

	Mean	Std. Deviation	N
Oil Price	57.657252100840300	8.675672701137504	119
USD/INR Price	57.657252100840300	8.675672701137504	119

PROXIMITIES Oi Price USD INR Price

/VIEW=CASE

/MEASURE=EUCLID

/STANDARDIZE= NONE.

Correlations

		Oil price	USD/INRPrice
Oil price	Pearson Correlation	1	1.000**
	Sig.(2-tailed)		.000
	Sum of Squares and Cross-products	8881.541	8881.541
	Covariance	75.267	75.267
	N	119	119
USD/INR Price	Pearson Correlation	1.000**	1
	Sig.(2-tailed)	.000	
	Sum of squares and Cross-products	8881.541	8881.541
	Covariance	75.267	75.267
	N	119	119

** . Correlation is significant at the 0.01 level(2-tailed).

NONPAR CORR

/VARIABLES=OilPrice USD/INRPrice

/PRINT=SPEARMAN TWOTAIL NOSIG

/MISSING=PAIRWISE

Nonparametric correlations

Correlations

Spearman's rho

Oil price USD/INRPrice

Oil Price	Correlation coefficient	1.000	1.000**
	Sig.(2-tailed)	.	.
	N	119	119
USD/INR Price	Correlation coefficient	1.000**	1.000
	Sig.(2-tailed)	.	.
	N	119	119

**. Correlation is significant at the 0.01 level (2-tailed)

Regression

Warnings

For the final model with dependent variable USD/INRPrice, influence statistics cannot be computed because the fit is perfect.

	Mean	Std. deviation	N
Oil price	57.6572521	8.67567270	119
USD/INRPrice	57.6572521	8.67567270	119

Correlations

USD/INRPrice Oil price

Pearson correlation	USD/INR Price	1.000	1.000
	Oil price	1.000	1.000
Sig.(1-tailed)	USD/INR Price	.	.000
	Oil price	.000	.
N	USD/INR Price	119	119
	Oil price	119	119

Variables entered/removed

Model	Variables entered	Variables removed	Method
1	Oil price	.	Enter

- Dependent variable: USD/INR Price
- All requested variables entered

Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate
1	1.000	1.000	1.000	.000000000

- Predictors: (constant) , oil price
- Dependent variable : USD/INR price

ANOVA

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	8881.541	1	8881.541	.	.
	Residual	.000	117	.000		

Total	8881.541	118			
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- a. Dependent variable: USD/INR price
b. Predictors: (constant) , oil price

Coefficients

model		Unstandardized B	Coefficients std error	Std coefficients beta	t	Sig.	95.0% confidence interval for B LOWER BOUND	95.0% confidence interval for B UPPER BOUND
1	Constant	.000	.000		.	.	.000	.000
	Oil price	1.000	.000	1.000	.	.	1.000	1.000

- a. Dependent variable: USD/INR price

Residual statistics

	Minimum	Maximum	Mean	Std. deviation	N
Predicted value	44.2099991	74.0849991	57.6572521	8.67567270	119
Residual value	.000000000	.000000000	.000000000	.000000000	119
Std. predicted value	-1.550	1.894	.000	1.000	119
Std. residual value	0

- a. Dependent variable: USD/INR price

Chi-square test

	Value	df	Asymptotic sig.(2-sided)
Pearson chi-square	13685.000	13225	.003
Likelihood ratio	1129.114	13225	1.000
Linear-by-linear association	118.000	1	.000
N of valid cases	119		

- a. 13456 cells(100.0% have expected count less than 5. Then the minimum expected count is .01)

Symmetric measures

		Value	Approximate sig.
Nominal by nominal	Phi	10.724	.003
	Cramer's v	1.000	.003
N. of valid cases		119	

Findings and recommendations:

Paired sample T test is the first tool which has been used for this study. This is a statistical test used to determine whether the mean difference between two sets of observations is zero. And here each subject

or the entity is measured twice. In the data analysis it was concluded that the correlation and t cannot be computed because the standard error of the difference is 0.

There are two other tools, i.e. correlation and regression that are used for finding the relationship and influence of the changing oil prices on the exchange rates.

Under correlation bivariate Pearson correlation produces a sample correlation coefficient means the strength of linear relationships between pairs of continuous variables. By extensions the Pearson correlation evaluates whether there is statistical evidence for a linear relationship among the same pairs of variables in the population. The Pearson correlation is a parametric measure.

In this case the data must have certain specifications. They are:

1. Data should have two or more variables
2. Cases that have values on both variables
3. Linear relation between the variables
4. Independent cases, which means:

There is no relationship between the values of variables between the cases, i.e. the values of all the cases across the variables are unrelated, no case can influence another case on any variable, the value of any variable cannot influence value of any variable for other cases

According to the output the oil prices and USD/INR price have a statistically linear relationship ($p < .005$) and the direction of the relationship between the two variables are positive, meaning that the variables tend to increase together and vice versa. And the magnitude is approximately moderate.

Regression

The table above provides R and R square values. The R value represents the simple correlation and is 1.000 (the R column) indicates how much of the total variation in the dependent variable, can be explained by the independent variable. In this case 100% can be explained.

The next one is the ANOVA table, which reports how well the regression equation fits the data. the output indicates that the regression model predicts the dependent variable significantly. The statistically significance of the regression model, i.e. $p < 0.05$ here the value is .0000, which is less than .05, and indicates that, overall, the regression model statistically significantly predicts the outcome variable (i.e., it is a good fit for the data)

The coefficients output provides the necessary information to predict price from income, as well as determine whether income contributes statistically to the regression model.

Conclusion:

According to the study, it proves that there is a positive relationship between the variables, i.e., USD/IND price and oil prices. This means that the fluctuations in the oil prices will affect the exchange rates of Indian rupee according to the changes in the growth and fall of the oil prices. Now that we have concluded that there is an impact of the fluctuations in oil prices on the foreign exchange rate of Indian rupee, there should be further development of the paper on what are the possible measurements to be taken to avoid such fluctuations in the exchange rates. For this it is necessary to conduct a hypothesis test, i.e., dickey fuller's hypothesis test and apply the measurements. Measurements here means that having control over the external factors that influences the oil prices, like OPEC'S influence on the oil price, future contracts on oil prices, impact of natural disaster and politics, production cost and storage impacts and the interest rates.

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