VOLATILITY OF SELECT GLOBAL CURRENCIES BEFORE AND AFTER FED RATE HIKE DECISION

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ABSTRACT

From past one decade, the US Federal Reserve (FED) has maintained the interest rates at zero; the decision that was taken by FED in order to protect the country from debt crisis which has threatened the Government with political and economic instability. Therefore to boost the U.S. economy, the Federal Reserve has maintained interest rates near zero. In the current scenario of increasing productivity, decreasing unemployment rate and decreased inflation forced the Fed to make an inevitable decision, which is none other than increasing the rates of interest rates from 25 – 50 Bps in order to attract investors to invest in bonds of their own country. The analysts believed higher US rates could pose a challenge to a number of emerging market economies - particularly across Asia, a top exporter to the US - by pushing up bond yields, augmenting capital outflows and depreciating currencies. The present paper focuses on the Volatility of Select Global Currencies Before and After FED Rate Hike Decision for a period of 7 to 8 months by dividing them to Before and After FED decision. The analysis is done by using Paired Comparison Statistics, Paired Samples Correlations and Paired Samples Test.

Keywords: *US Federal Reserve, FED, Rate hike, Global Currencies*

I. INTRODUCTION

U.S. debt has exploded to its new heights by destabilising the economy and inturn threatening the Government. Therefore to boost the U.S. economy, the Federal Reserve has maintained interest rates near zero. Because of the reasons like strong labour market conditions and prevailing low inflation raised the concerns of FED to increase the interest rates. The rise of interest rates in a country often increases inflation that tends to decrease the value of a currency. If a country can manage to achieve a successful balance of increased interest rates without an accompanying increase in inflation, then the value and exchange rate for its currency is more likely to rise. All other factors being equal, higher interest rates in a country increase the value of that country's currency relative to nations offering lower interest rates. Although interest rates can be a major factor influencing currency value and exchange rates, the final determination of a currency's exchange rate with other currencies is the result of a number of interrelated elements that reflect and impact the overall financial condition of a country in respect to that of other nations. The present paper focuses on the volatility of Select Global Currencies before and after FED rate hike decision.

II. OBJECTIVE OF THE STUDY

The fundamental objective of the study is to know the volatility of select Global currencies against dollar and their movement before and after the FED rate hike decision.

III. SCOPE OF THE STUDY

This research covers about 17 randomly selected currencies from across the globe and their value against US Dollar

Table 1: List of Sample Currencies from across the Globe

Currency Quote	Currency Name	Currency Quote	Currency Name
CAD	Canadian Dollar	MMK	Myanmar Kyat
JPY	Japanese Yen	THB	Thai Bhat
SGD	Singapore Dollar	HKD	Hong Kong Dollar
INR	Indian Rupee	CNY	Chinese Yuan
MYR	Malaysian Ringgit	GBP	British Pound
CHF	Swiss Franc	EUR	Euro
SEK	Swedish Krona	RUB	Russian Ruble
MXN	Mexican Peso	ARS	Argentine Peso
BRL	Brazilian Real		

The above table shows the sample currency names along the quotes with which they are made available in the market for currency transactions. The sample was randomly selected to cover almost the Globe.

Table 2. Showing the Paired comparison statistics

The dependent t-test (called the paired-samples t-test in SPSS Statistics) compares the means between two related groups on the same continuous, dependent variable.

Paired Comparison Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CAD Price Before	1.321307	73	.0128029	.0014985
	CAD Price After	1.378170	73	.0395412	.0046280
Pair 2	MMK Price Before	1285.8733	73	7.72735	.90442
	MMK Price After	1264.7000	73	38.08296	4.45727
Pair 3	JPY Price Before	121.0511	73	1.35799	.15894
	JPY Price After	116.3086	73	3.29276	.38539
Pair 4	THB Price Before	35.82630	73	.282125	.033020
	THB Price After	35.73093	73	.425729	.049828
Pair 5	SGD Price Before	1.409386	73	.0126033	.0014751
	SGD Price After	1.405658	73	.0234823	.0027484
Pair 6	HKD Price Before	7.750388	73	.0006209	.0000727
	HKD Price After	7.772011	73	.0189328	.0022159
Pair 7	INR Price Before	65.84152	73	.619853	.072548
	INR Price After	67.32364	73	.789590	.092414
Pair 8	CNY Price Before	6.366845	73	.0192755	.0022560
	CNY Price After	6.533758	73	.0393720	.0046081
Pair 9	MYR Price Before	4.284747	73	.0764917	.0089527
	MYR Price After	4.222497	73	.1121204	.0131227
Pair 10	GBP Price Before	.654436	73	.0059555	.0006970
	GBP Price After	.694200	73	.0133388	.0015612
Pair 11	CHF Price Before	.983645	73	.0218671	.0025593
	CHF Price After	.994023	73	.0128875	.0015084
Pair 12	EUR Price Before	.904664	73	.0219343	.0025672

	EUR Price After	.908708	73	.0124136	.0014529
Pair 13	SEK Price Before	8.466134	73	.1787176	.0209173
	SEK Price After	8.461063	73	.1044785	.0122283
Pair 14	RUB Price Before	65.15063	73	2.033567	.238011
	RUB Price After	74.349025	73	3.7641592	.4405615
Pair 15	MXN Price Before	16.689425	73	.1750374	.0204866
	MXN Price After	17.931751	73	.5401860	.0632240
Pair 16	ARS Price Before	9.482962	73	.1222796	.0143117
	ARS Price After	14.159152	73	.9907551	.1159591
Pair 17	BRL Price Before	3.835464	73	.1119169	.0130989
	BRL Price After	3.918533	73	.1464659	.0171425

Interpretation**:** By above "paired comparison statistics" output, it is clearly observed that mean of CAD, HKD, INR, CNY, GBP, CHF, EUR, RUB, MXN, ARS, and BRZ is increased after FED rate hike by giving an indication of depreciation in their currencies; Whereas the mean of MMK, JPY, THB, SGD, MYR and SEK is decreased marginally by FED rate hike by giving an indication of appreciation in their currencies respectively. The S.D (Standard Deviation) of almost all the currencies is increased after FED rate hike except for CHF, EUR and SEK; this inturn is indicating that high volatility prevailed in the currencies market after FED rate hike.

Table 3. Showing the Paired Samples Correlations

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	CAD Price Before & CAD Price After	73	-.271	.020
Pair 2	MMK Price Before & MMK Price After	73	-.224	.057
Pair 3	JPY Price Before & JPY Price After	73	-.684	.000
Pair 4	THB Price Before & THB Price After	73	.425	.000
Pair 5	SGD Price Before & SGD Price After	73	.135	.255
Pair 6	HKD Price Before & HKD Price After	73	-.198	.094
Pair 7	INR Price Before & INR Price After	73	-.683	.000
Pair 8	CNY Price Before & CNY Price After	73	-.463	.000
Pair 9	MYR Price Before & MYR Price After	73	.280	.017
Pair 10	GBP Price Before & GBP Price After	73	.519	.000
Pair 11	CHF Price Before & CHF Price After	73	-.460	.000
Pair 12	EUR Price Before & EUR Price After	73	-.422	.000
Pair 13	SEK Price Before & SEK Price After	73	-.381	.001
Pair 14	RUB Price Before & RUB Price After	73	-.543	.000
Pair 15	MXN Price Before & MXN Price After	73	-.321	.006

Pair 16	ARS Price Before & ARS Price After	73	.766	.000
Pair 17	BRL Price Before & BRL Price After	73	.412	.000

Interpretation: By "Paired Samples Correlation" output it is observed that; ARS is showing high positive correlation of 76.6% followed by GBP 51.9%, THB 42.5%, and BRL 41.2% with moderate positive correlation and MYR along with SGD are showing low positive correlation. Whereas JPY is showing high negative correlation of (68.4%) followed by INR (68.3%), RUB (54.3%), CNY (46.3%), CHF (46%), EUR (42.2%), SEK (38.1%), MXN (32.1%) of moderate negative correlation and CAD (27.1%) along with MMK are showing low negative correlation.

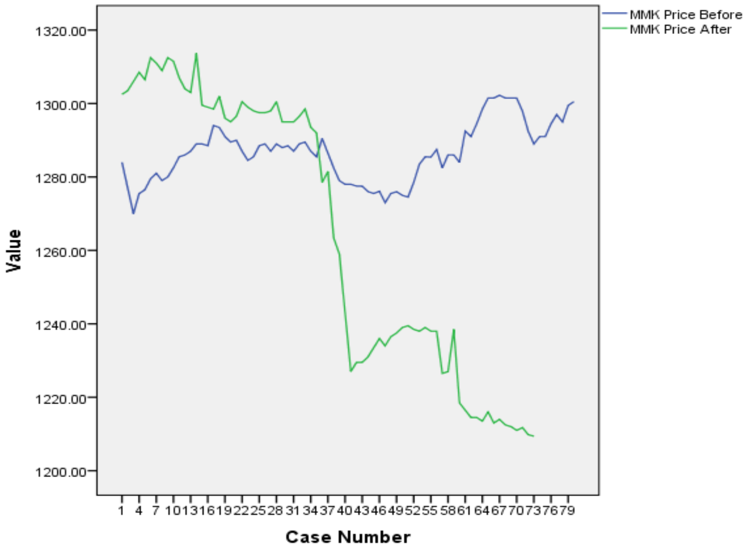
Table 4. Showing the Paired Samples Test

Paired Samples Test										
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	CAD Price Before - CAD Price After	-0.056863	0.0447434	0.0052368	-0.0673024	-0.0464236	-10.858	72	0
Pair 2	MMK Price Before - MMK Price After	21.17329	40.51756	4.74222	11.71984	30.62673	4.465	72	0
Pair 3	JPY Price Before - JPY Price After	4.74247	4.3359	0.50748	3.73083	5.7541	9.345	72	0
Pair 4	THB Price Before - THB Price After	0.09537	0.398425	0.046632	0.00241	0.188329	2.045	72	0.044
Pair 5	SGD Price Before - SGD Price After	0.0037288	0.0251079	0.0029387	-0.0021293	0.0095869	1.269	72	0.209
Pair 6	HKD Price Before - HKD Price After	-0.0216233	0.0190653	0.0022314	-0.0260715	-0.017175	-9.69	72	0
Pair 7	INR Price Before - INR Price After	-1.482123	1.294801	0.151545	-1.784223	-1.180024	-9.78	72	0
Pair 8	CNY Price Before - CNY Price After	-0.1669123	0.0512368	0.0059968	-0.1788668	-0.1549579	-27.834	72	0
Pair 9	MYR Price Before - MYR Price After	0.0622493	0.1167172	0.0136607	0.0350172	0.0894815	4.557	72	0
Pair 10	GBP Price Before - GBP Price After	-0.0397644	0.0114459	0.0013396	-0.0424349	-0.0370939	-29.683	72	0
Pair 11	CHF Price Before - CHF Price After	-0.0103781	0.0300605	0.0035183	-0.0173917	-0.0033644	-2.95	72	0.004
Pair 12	EUR Price Before - EUR Price After	-0.0040438	0.0294068	0.0034418	-0.0109049	0.0028173	-1.175	72	0.244
Pair 13	SEK Price Before - SEK Price After	0.0050712	0.2389257	0.0279641	-0.0506743	0.0608167	0.181	72	0.857
Pair 14	RUB Price Before - RUB Price After	-9.1983945	5.15969	0.603896	-10.402239	-7.9945498	-15.232	72	0
Pair 15	MXN Price Before - MXN Price After	-1.242326	0.6190589	0.0724554	-1.3867632	-1.0978889	-17.146	72	0
Pair 16	ARS Price Before - ARS Price After	-4.6761904	0.9004723	0.1053923	-4.8862861	-4.4660947	-44.369	72	0
Pair 17	BRL Price Before - BRL Price After	-0.0830685	0.1430933	0.0167478	-0.1164546	-0.0496824	-4.96	72	0

Interpretation: By "paired samples test" it is found that except SGD, EUR, and SEK all the currencies are showing significant difference during the study period of before and after the FED rate hike decision; whereas MMK is showing highest positive significant difference before and after the FED rate hike decision followed by JPY, THB, and MYR. Whereas RUB is showing the highest negative significant difference before and after FED rate hike decision followed by ARS, INR, MXN, CNY, BRL, CAD, GBP, HKD, and CHF respectively.

Highest positive Significant difference between Before and After FED rate hike decision: MMK Price

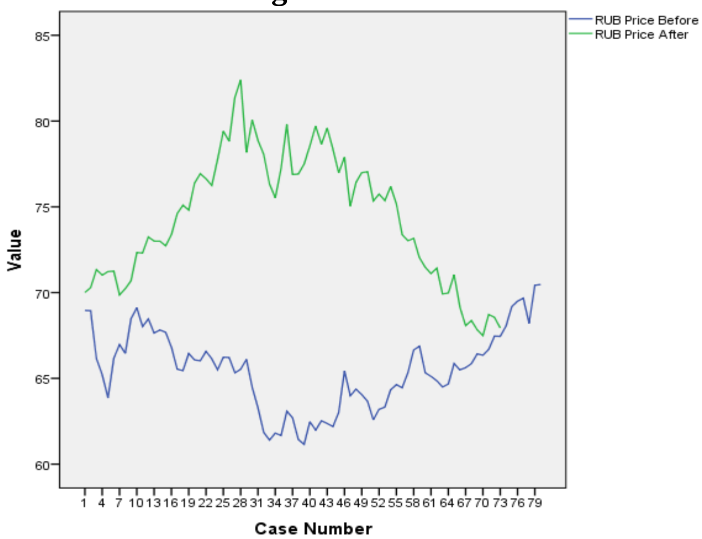
Figure: 1



From the above figure 1 it is clearly observed that the highest positive significant difference between before and after FED rate hike decision is shown by MMK.

Highest negative significant difference between before and After FED rate hike decision: RUB Price

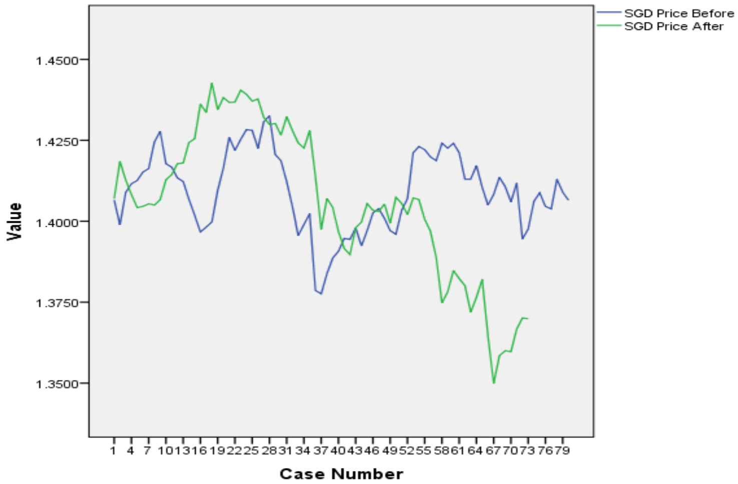
Figure: 2



From the above figure 2, it is clearly observed that the highest negative significant difference between before and after FED rate hike decision is shown by RUB.

No Significant difference between before and After FED rate hike decision: SGD Price

Figure: 3

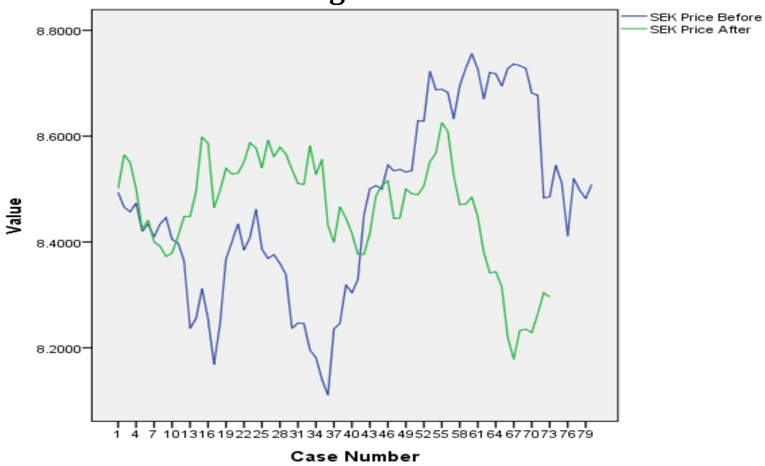


EUR Price:

Figure: 4

SEK Price:

Figure: 5



From the above figures 3, 4 and 5 it is clearly observed that there is no significant difference between before and after FED rate hike decision is shown by SGD, EUR and SEK.

IV. FINDINGS:

It is found from the study that increase in interest rates by FED has tumbled the Global currencies value and strengthened USD which would be threatening for any emerging economy, only few countries currencies which are either purely dependent on tourism or the countries that are having majority trade with their allies rather than dollar were not showing change or significant difference before and after the rate hike decision. But a nominal 25Bps has not shown its impact adversely and immediately this news was assimilated too; but further increase in interest rates is always active in buffer provoking the sentiments of investors whenever the FED holds meeting.

The velocity of the outflows would depend on the trajectory of FED interest rate hike decision; as of now the FED could not make any such decision but it is firm in increasing the rates twice in this year i.e., 2016. Despite the fact that capital inflows boosted lending and consumption in many emerging markets across the globe, with a reversal of these flows due to FED rate hike would affect the countries depended on these inflows adversely by way of hampering the economic growth.

With continuous increase in the rate hike the global economies would tumble as it would affect Forex, Bullion and Commodities market alike; this inturn boost up another recession in the coming years as the global economy is growing at a pace of 2%. Further rate hikes by the Fed would edge the range of major economies in Asia (like South Korea, China, India etc.) that are struggling with low inflation/deflation and tumbling growth.

The currencies of commodity exporting countries have slumped significantly against the USD in the recent past because of devaluation of Yuan, slump in European countries, Britain exit from European Union followed by declining commodity prices. The move of FED rate hike would likely to raise the burden of debt service costs, in turn affecting the growth of countries that are enjoying low cost debt. When global markets tumble it is neither good for emerging economies and nor for US as majority of the trade would take place in US dollars, if all are well then only US will be well.

Fed rate hikes would boost the attention of Forex dealers towards the USD rather than other currencies, as increased FED rate would increase the demand for Dollar against other currencies. If this happens then most of the currencies would try to rely on other basket currencies which would pose the two way threat to emerging countries in such a way that one way the basket currencies are more volatile than dollar and other way the decrease in dollar demand would not only affect the US but also the countries maintaining high Forex reserves in dollars would be affected worse. That could result in the basket currencies falling further against the USD during 2016, which would create competitive pressures for other East Asian economies, especially for exports into the US market.

The industry sectors in Asia and other emerging markets would be adversely affected by US FED rate hike that tighten the monetary policy by way of curtailing third party nations in utilizing cheap USD credit to fund investments. With this the exporters borrowing rates would increase marginally, but more prominently it would be tough to get new loans by potentially triggering debt defaults. Apart from this the foreign institutional investors who are dumping their investment into third party nations by cashing the high interest rate differentials now would pump their investment into their own nations; as the emerging countries would decrease the interest rates in order to sustain the other competitors by making them lack lustre destinations for investment.

The dollar value would mostly be expected to appreciate when US interest rates start rising by FED. This fear of a stronger dollar value would be the real concern, creating panic among emerging economies and at International Monetary Fund as most of the business houses and governments have taken on large dollar-denominated debts and currency devaluation threatens to spin out of control. Moreover, monetary policy is not the only determinant of exchange rates. Trade deficits and surpluses also matter, as do stock-market and property valuations, the cyclical outlook for corporate profits, and positive or negative surprises for economic growth and inflation. On most of these grounds, the dollar has been the world's most attractive currency since 2009; but as economic recovery spreads from the US to Japan and Europe, the tables are starting to turn.

V. CONCLUSION:

Generally, higher interest rates increase the value of a given country's currency. The higher interest rates that can be earned tend to attract foreign investment, increasing the demand for and value of the home country's currency. Conversely, lower interest rates tend to be unattractive for foreign investment and decrease the currency's relative value. Interest rates alone do not determine the value of a currency. Two other factors that are often of greater importance are political and economic stability and the demand for a country's goods and services. Factors such as a country's balance of trade between imports and exports can be a much more crucial determining factor for currency value. Greater demand for a country's products means greater demand for the country's currency as well. Favourable gross domestic product (GDP) and balance of trade numbers are key figures that analysts and investors consider in assessing the desirability of owning a given currency.

Finally, the widely assumed correlation between monetary policy and currency values does not stand up to empirical examination. In some cases, currencies move in the same direction as monetary policy – for example, when the yen dropped in response to the Bank of Japan's 2013 quantitative easing. But in other cases the opposite happens, for example when the euro and the pound both strengthened after their central banks began quantitative easing.

REFERENCES:

1. http://www.exchange-rates.org/history/ZAR/USD/T
2. http://fxtop.com/en/forex-
3. http://www.fedprimerate.com/libor/libor_rates_history.htm
4. http://www.macrotrends.net/1433/historical-libor-rates-chart
5. http://www.ecofin-surge.co.in/financial-market.html
6. http://in.investing.com/currencies/usd-inr-historical-data