IMPACT OF COVID -19 ON INDIAN CURRENCY EXCHANGE VOLATILITY

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ABSTRACT:

Entire economies of the world are meeting hit and risk as the market going downstream duo to the spread of world pandemic coronavirus. Due to this, all economic factors like GDP, Stock market, Price inflation, employment and currency exchange value have been affected seriously. This study tries to find out the daily exchange rate volatility of Indian currency during the period of pre and post COVID 19 crisis in India. Indian Currency exchange value from 1st January 2020 to 28th February 2020 collected for pre COVID 19 crisis and from 1st March 2020 to 30th April 2020 collected for Post COVID 19 crisis currency exchange rate: It was found that the daily exchange rate of Indian currency with US Dollar, Euro and Japanese Yen are highly volatile during the period of Post COVID-19 compare to post COVID-19 period. But, Indian Rupee value against Pound Sterling is not affected seriously by the Coronavirus disease (COVID-19), it was highly volatile only on the day of announcing lockdown by the Government.

Key Words: Covid-19, Currency exchange, Indian Rupee, US Dollar, Pound

INTRODUCTION

The coronavirus spread to all over the world within a short period of time. India has been followed lockdown from the month middle of March 2020 due to the corona virus. Entire economies of the world are meeting hit and risk as the market going downstream duo to the spread of world pandemic coronavirus. Many developing countries also have helpless to control their economies in this period. Developing countries like India have been trying to control their economies, but due to vast area and highest population, it also failed to control its economy within their hands. Due to this, all economic factors like GDP, Stock market, Price inflation, employment and currency exchange value have been affected seriously.

The decelerating of Indian economy may lead to weakening of the currency value. The currency value means how much amount should pay for each unit of another country. It will be decided based on the foreign exchange rate. If the amount of payment is going to decrease trend, it shows one country strengthening their currency value. One the other hand, if it goes increasing trend, the country, weakening their currency value. Whenever the economic crisis arises the currency value of the country will go weak.

REVIEW OF LITERATURE

The US dollar exchange rate volatility with Euro, Yuan and liver sterling has positive impact with the COVID-19 cases and deaths in US (Benzid, 2020). Coronavirus diseases created a significant effect on currency exchange rate and it also created unbalance financial situation in worldwide (Abu Bakar, 2020).Gross domestic product, openness and exchange rate to have a positive relationship with foreign direct investment, but, world crude oil prices and volatility of exchange rate have a negative relationship with foreign direct investment (Sharifi-Renani and Mirfatah, 2012). Policy actions, reducing unexpected fluctuation of the exchange rate, for one of our sample countries, will increase the exported amount (Serenis

and Tsounis, 2013).There was a close relationship between the exchange rate and the COVID-19 variables (Villarreal-Samaniego, 2020). During the latest 2008 crisis, safe haven effects went against the typical pattern of crisis-related flows and the interest rate differentials explain more about the crisis-related exchange rate movements in 2008–09 than in the past (Kohler, 2010) and There has been a strong causal influence from stock market return to forex market return (Samanta, 2003). Indian economy which already suffered from large fiscal and current account deficit adversely affected by relatively exchange rate pressure (Grewal, 2013). Whilethe exchange rate volatility has a small effect on the level of exports in European Union countries (Serenis and Tsounis, 2012).

NEED OF THE STUDY

In past period the economic crisis came to few or some particular regions in the world, but this economic crisis arose due to coronavirus disease (COVID 19) has been affecting all the countries in the world. The impact of COVID 19 on foreign exchange market affects greatly on some currencies. India has been faced many economic problems due to this COVID 19 including currency value. It has taken may plans to strengthen the currency value in this period of COVID 19 crisis. This study tries to find out the daily exchange rate volatility of Indian rupee during the period of pre and post COVID 19 crisis in India.

OBJECTIVES OF THE STUDY

1. To inspect the volatility on daily exchange rate of Indian currency during pre and post COVID-19 crisis.
2. To find out the relationship between the COVID-19 cases and daily exchange rate of Indian rupee after COVID-19 crisis.

HYPOTHESIS

H0: There is no significant difference on daily exchange rate of Indian rupee during pre and post COVID-19 crisis

H0: There is no correlation between the COVID-19 cases and the daily exchange rate of Indian rupee.

METHODOLOGY

To inspect the foreign exchange volatility during the pre and post COVID 19 crisis in India, the secondary data of daily exchange rate volatility of the Indian rupee collected form Reserve bank of India Website for the period of January, 2020 to April 2020. From 1st January 2020 to 28th February 2020 assumed as the period of the pre COVID 19 crisis and from 1st March 2020 to 30th April 2020 assumed as the period of Post COVID 19 crisis. For analysis the data for comparing means T-test used to find out whether there is a significant difference in the foreign exchange rate during the pre and post COVID 19 crisis.

To find out the relationship between COVID 19 cases and the exchange rate of the Indian rupee, the secondary data of COVID cases affected in India from the period of March 2020

to April 2020 collected from the WHO website. Correlation analysis has been used to find the relationship between COVID 19 cases and daily exchange rate of Indian rupee.

DATA ANALYSIS AND RESULTS

Figure - 1 :Daily exchange rate volatility of Indian Rupee during Pre COVID-19 Crisis
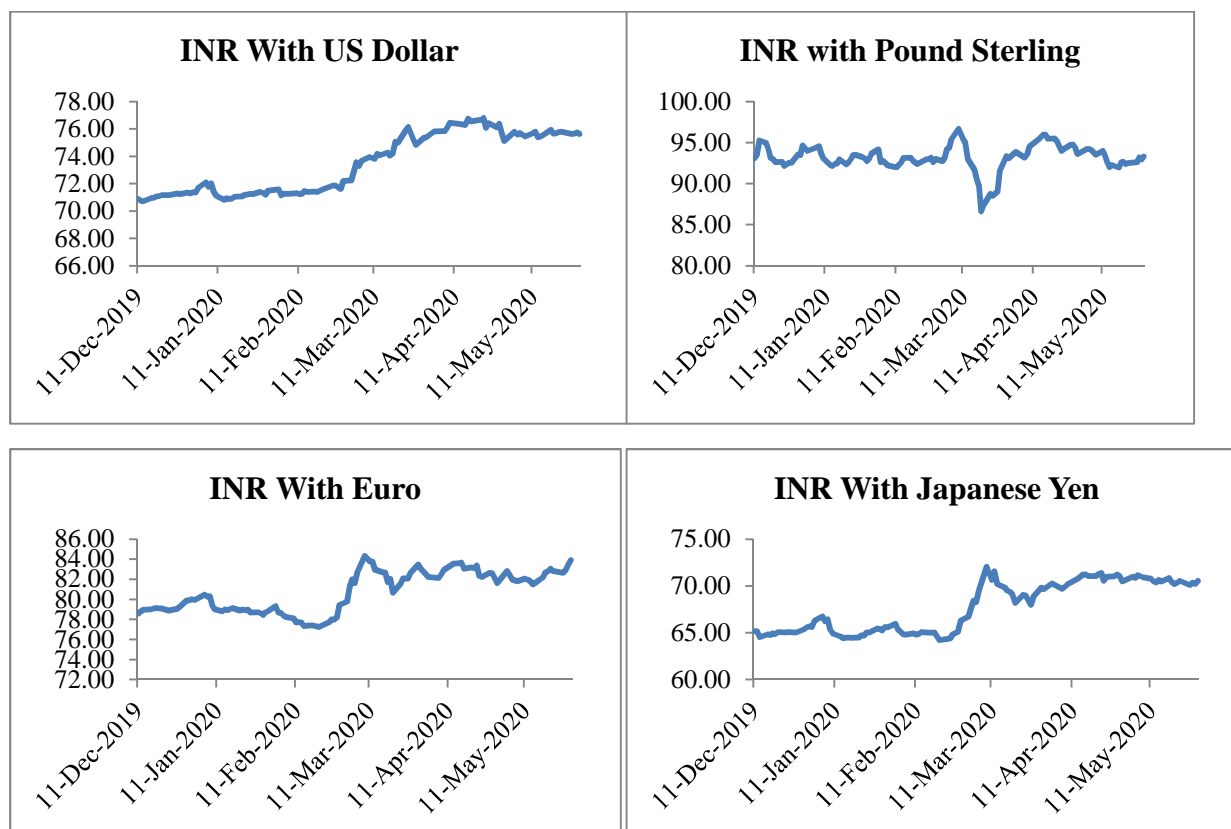
Hypothesis Results

H0: There is no significant difference on daily exchange rate of Indian rupee during pre and post COVID-19 crisis

Table -1: Daily exchange rate volatility of Indian rupee during pre and post COVID-19 crisis

Daily Exchange Rate of Indian Rupee		Mean	Std. Deviation	Std. Error Mean	t	Sig. (2-tailed)
US Dollar	PreCOVID-19	71.3096	.32576	.04392	-29.990	.000
	Post COVID-19	75.3618	1.03291	.13928		
Pound Sterling	Pre COVID-19	93.1263	.78243	.10550	-.089	.930
	Post COVID-19	93.1550	2.12731	.28685		
Euro	Pre COVID-19	78.8171	.77065	.10391	-24.978	.000
	Post COVID-19	82.5098	.84080	.11337		
Japanese Yen	Pre COVID-19	65.1302	.54649	.07369	-28.047	.000
	Post COVID-19	70.1669	1.07298	.14468		

Daily exchange rate volatility of Indian Rupee with US Dollar

The daily exchange of Indian rupee was Rs. 70.87 to the US dollar on 11th December 2020 and it was increased to Rs. 75.64 on 26th May 2020, it means that the Indian Rupee value was sharply decreased during the period. It clearly indicates that nearly 7% of Indian rupee value was decreased in this period. Among the 7% decreases only 2% decreased in the period of Pre COVID-19 and the remaining 5% decreased during the Post COVID-19 period. During the Pre COVID-19 period the average daily exchange rate of Indian rupee with US Dollar was Rs. 71.31 but it is Rs. 75.36 during the post COVID-19 period. The standard deviation also high during the Post COVID-19 period. It shows that during the post COVID period, the Indian rupee value was highly devalued than the period of Pre COVID-19. The T-test result also clearly confirms that there is a significant difference between Pre and Post COVID-19 period with regards to exchange rate of the Indian Rupee with US Dollar.

Daily exchange rate Volatility of Indian Rupee with Pound Sterling

One Pound Sterling is equal to Rs. 93.10 of Indian Rupee on 11th December 2020 but it was Rs. 93.31 on 26th March 2010. Is depicts that the Rupee value is lightly decreased against the Pound Sterling during the study period. The average of daily exchange rate of the Indian Rupee with Pound Sterling was Rs. 93.13 during the period of Pre COVID-19 and it was Rs. 93.15 during the Post COVID-19 period. The standard deviation during the Pre COVID-19 is 0.78 and it was 2.12 during the Post COVID-19 period, I mean that during the Post COVID-19 period the volatility of daily exchange rate of Indian Rupee is higher than the Pre COVID-19 period. As per the T test, it is found that the exchange rate volatility of Indian rupee with Pound Sterling between Pre and Post COVID-19 period is not significant difference.

Daily exchange rate Volatility of Indian Rupee with Euro

The Indian Rupee exchange rate was Rs. 78.58 with one Euro on 11the December 2020 and it was Rs. 82.91 on 26 May 2020. It displays that overall 6% of Indian rupee value was decreased during this period. During the Pre COVID -19 periods only 1% decreased in the value of rupee but 5% were decreased during the period of Post COVID-19. The average of daily exchange rate of the Indian Rupee during the pre COVID period is Rs. 78.82 but it was Rs 82.51 in the period of Post COVID-19. The standard deviation during the pre COVID-19 is 0.77 and it was 0.84 during the post COVID -19, it means that during Post COVID-19 period the slightly higher volatility than the Pre COVID-19 period. From the T- test, it concludes that there is a significant difference in the daily exchange rate of the Indian Rupee with Euro during Pre and post COVID-19 period.

Daily exchange rate Volatility of Indian Rupee with Japanese Yen

On 11th December 2020, the daily exchange rate of Indian rupee with Japanese Yen Rs. 65.17 and Rs. 70.56 on 26th May 2020. During this period, 8% of Indian rupee value was decreased with Japanese Yen. Only 2% of Rupee value was decreased during the period of Pre COVID-19 but during the Post COVID -19 6% of Rupee value was decreased against the Japanese Yen. The average daily exchange rate of the Indian Rupee during Pre COVID-19 is Rs. 65.12 and it was Rs. 70.17 during the post COVID period with Japanese Yen. I also found that there is a significant difference in daily exchange rate of the Indian Rupee with Japanese Yen during Pre and Post COVID-19 period.

Relationship between COVID-19 cases with daily Exchange rate volatility of Indian Rupee

H0: There is no correlation between the COVID-19 cases and the daily exchange rate of Indian rupee.

	G.C	G.NC	I.C	I.NC	I.D	I.ND	G.D	G.ND
US	.404**	.744**	.171	.234	.179	.251	.406**	.719**
Pound	.211	.314	.025	.078	.032	.122	.225	.462**
Euro	-.034	-.024	.046	.022	.016	-.030	-.060	-.028
Yen	.372**	.322*	.181	.246	.201	.303*	.399**	.372**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

It is found that the daily exchange rate of Indian rupee with US Dollar have highly negative correlation with Globally COVID-19 confirmed new cases and new death cases. It also correlated with total cases and total deaths globally. It is not having a correlation with Indian COVID- 19 cases and deaths.

The daily exchange rate of Indian rupee with Pound is not having correlation with COVID -19 cases and death, both India as well as globally except Global new deaths caused by COVID-19.

The Indian Rupee exchange rate with the Euro is not correlated with the number of cases and deaths both India as well as globally.

The Indian rupee value against Japanese Yen is having relation with Global COVID-19 cases and deaths. It also not is having correlation with the Indian COVID-19 cases and deaths.

CONCLUSION

The world economy has been affected seriously by the outbreak of Coronavirus disease 2019(COVID-19). The Indian economy affected due to closure of production activities and it also leads to decrease the rupee value highly during this period. In this study reveals that the rupee value has been decreased by nearly 5 % the post COVID-19 Period (March – May,2020) instead of 2 % decreased Pre COVID-19 Period (December-February 2020) except the Pound Sterling. It is clearly indicated that   during COVID-19 period, nearly Indian rupee value were decreased 2.5 times more than the normal period. The standard deviation between during the Post COVID- 19 period is higher than the pre COVID-19 period. The daily exchange rate of Indian Rupee with US Dollar, Euro and Japanese Yen are highly volatile during the period of Post COVID-19 compare to post COVID-19 period. But, Indian Rupee value against Pound Sterling isnot affected seriously by the Coronavirus disease (COVID-19), it was highly volatile only on the day of announcing lockdown by the Government. Rupee value is a correlation with the world COVID-19 case and deaths and it is not correlated with the Indian cases and deaths. From this the researcher concludes that the daily exchange rate of the India rupee with US Dollar, Euro and Japanese Yen highly impacted by the COVID-19 cases worldwide. So that if the controlling of world COVID-19 cases and deaths leads to improve the Indian rupee value against US Dollar, Euro and Japanese Yen.

LIMITATIONS OF THE STUDY

1. This research carried out only daily exchange rate of Indian rupee with US dollar, Pound, Euro and Japanese Yen, the output may not be generalize to all country.
2. The data collected three month before and after the COVID-19 crisis outbreak in India, So that the result may not be generalize to all period of time.
3. In this study only the factor COVID-19 have been selected for analyses the volatility in daily exchange rate, some another factors also may influence the daily exchange rate of Indian rupee.

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