

AN ANALYSIS OF INDIAN RUPEE EXCHANGE RATE VOLATILITY DURING FINANCIAL CRISIS 2008 AND PANDEMIC SITUATION OF COVID-19

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Abstract: Rupee value against foreign countries' currency is one of the important factors influencing the foreign currency inflow of India. It also decides the currency power in the globalized market. During the last decades, Indian rupee value has fallen continuously, and the exporters are getting less foreign currency for their export. The exchange rate of Indian rupee value against US dollar has doubled from the year 2008 to the year 2020; it shows that the rupee value deflated nearly half of the value during from the year 2008 to the year 2020. The rupee value also has highly depreciated during the period of global financial crisis, 2008 and novel coronavirus disease, 2019 crisis. The attempts made to analyze the Indian rupee value volatility during the period of two crises. The secondary data of the monthly average value of Indian Rupee against US dollar from July 2008 to November 2008, for analysis of Indian rupee exchange rate volatility during global financial crisis 2008, and from January 2020 to May 2020 for analysis of Indian rupee exchange rate volatility during a pandemic situation of Covid-19 is taken in this study. The trend line, Kolmogorov-Smirnov test and t-test were used in this study. The result shows that the rupee value depreciated in the same direction, but it has depreciated more during the period of the global financial crisis in 2008.

Keywords: Economic Crisis, Financial Crisis-2008, Covid-19, Rupee Exchange Rate

INTRODUCTION

Rupee value is one of the most important controlling factors of the Indian Economy in the world. More fluctuations within a temporary period will affect the revenue and expenses of Indian Exporter and importer. The Government should minimize the volatility of Indian Rupee value with other countries. If a country's currency value is flowing at a top rate, it is a signal that the county is walking in the wrong path to reach the designation in the global trade market. The weakening of Indian rupee value against US Doller is one of most concerning factors for the last decades, particularly from the Global Financial Crisis in the year 2008. It leads to lowering the power of India in the global market. The Indian Government still cannot control the weakening of rupee value against other countries. Because of the falling rupee, the Indian Exporter has been affected by getting a moderate amount for their export volume. If the rupee value has not fallen down, definitely they will get more units of foreign currency for their export. The Indian rupee value against the developed countries currency like US Doller, Pound, Euro and Japanese Yen have affected at a very high level during the period of economic crisis in the world like Global Financial Crisis (GFC) 2008 and pandemic situation

of Coronavirus Disease 2019 (COVID-19). The Reserve Bank of India (RBI) has taken important steps to control the rupee value during the period of this economic crisis.

Global Financial Crisis (GFC-08) 2008

The Global Financial Crisis (GFC), 2008 was one of the biggest shocks to the entire global financial market in nearly a century. This GFC- 08 collapsed all countries banking sector in the world. This financial crisis first crashed the banking and all financial sectors of the United States, and spread to Europe and other remaining countries in the world. This financial crisis made Lehman Brothers, one of the biggest financial institutions in the world, bankrupt in September 2008. This financial crisis raised all energy prices in the Global market and increased global inflation rate. This global financial crisis also affected Indian rupee value. It started weakening from July 2008 onwards due to financial crisis, 2008.

The pandemic situation of Covid-19

The Novel Coronavirus Disease, 2019 (COVID-19) is one of the infectious diseases, first identified in December 2019 in Wuhan city of China. This virus first spread to all European Countries, later it spread to all the countries in the world. Because this virus primarily spreads between people during close contact, most countries announced national wide lockdown to prevent community spread. The unemployment rate increased, and the production also decreased because of this lockdown by the Governments. Indian Government also followed full lockdown from the mid of March 2020 to May 2020 and is unlocking step by step from June 2020. During this period, all the countries fell into economic crisis, including India.

The need for the study

The entire Indian Economy has been drastically affected by Covid-19. Indian Rupee daily exchange rate is one of the important factors to determine the Economic power in the world. After the 2008 global financial crisis, the value of the rupee has fallen to a very high level. The Indian Exporter would get low foreign currency for their export by thus reducing the rupee value. It also contributes to low foreign currency inflows into India. The Government is also attempting to control the rupee value decreasing further, but it could not do to so. The exchange rate prediction also fails at the time of any economic crisis by the experts in the world. This attempt made to access the volatility of Indian rupee value with the US dollar during the period of global financial crisis 2008 and the Pandemic situation of Covid-19.

Review of Literature

The whole Economy had a worst experience due to the new, unexpected Coronavirus disease in 2019, and it affected all the investors and their business. The exchange rate and the stock price have a strong co-movement during the economic crisis, and the Government may stimulate their Economy and stock market for more capital inflow during this period (Lin, 2020). Indian Economy always suffers due to large fiscal and current account deficit and relative exchange rate pressure (Singh and Mishra, 2016). The exchange rate volatility has a significant impact on exports of all commodities and allied products, but the gross domestic product has a positive impact on all commodities (Personal and Archive, 2018). The domestic and world conditions indicate the downward movement of Indian Rupee value during the crisis period (Gupta, Vivek, 2014). The bad appreciation result drove the REER variation, but it is not as depreciation effect in REER variation (Cheung, 2012). Depreciation of Indian Rupee value against USD is a common phenomenon for the poor Economy in last few months (Garage, 2018). Due to being globalized economy, it is natural that financial and economic disorder affects the entire world (Kshatrapati Shivaj, 2020). The portfolio

diversification across asset classes is one of the inevitable solutions for reconstructing the Economy from the crisis (Pami Dua, 2020). From the last four years, the exchange rate risk factor is one of the prominent factors of stock returns during the critical situation of the Economy (Bhadur, 2020).

Research Gap

Most of the research study has been conducted in the view of analyzing the impact of a particular economic crisis on an exchange rate in one or more countries. Only a few studies carried out because of the impact of various economic crises on the exchange rate of Indian rupee with other countries. No one study carried out a given analysis of the relationship of the two types of the economic crisis on an exchange rate of Indian rupee value with the US dollar. This research attempts to fulfil the research gap of the earlier studies in this area.

Objectives

1. To access the trend line of Indian rupee value against the US dollar during the period of global financial crisis 2008 and pandemic situation of Covid-19.
2. To find out the volatility of rupee value with the US Dollar during the global financial crisis of 2008 and the pandemic situation of Covid-19.

Hypothesis

Ho: There is no volatility on Indian rupee value against the US dollar during the period of global financial crisis 2008 and pandemic situation of Covid-19

Methodology

This study focused on accessing the trend line and the volatility of Indian rupee value against the US dollar during the period global financial crisis, 2008 and novel coronavirus disease, 2019. The secondary data of the monthly average value of Indian Rupee against US dollar from July 2008 to November 2008 in the period of global financial crisis, 2008, and the average value of Indian Rupee against US dollar from January 2020 to May 2020 in the period of coronavirus disease, 2019 have been used to find out the result of the study by using a statistical package for social sciences (SPSS). Trend Line, Kolmogorov-Smirnov normality test and t-test for comparing the mean differences during the two economic crisis period used in this study.

Result of the study

Relationship of Indian Rupee value with the US dollar during GFC-2008 and COVID-19

Figure – 1 GFC 2008 period

Figure -2 COVID-19 period

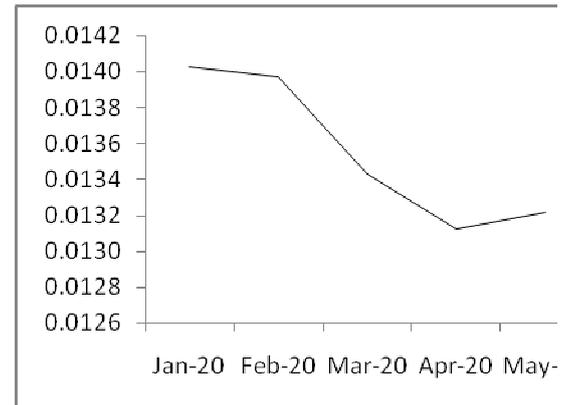
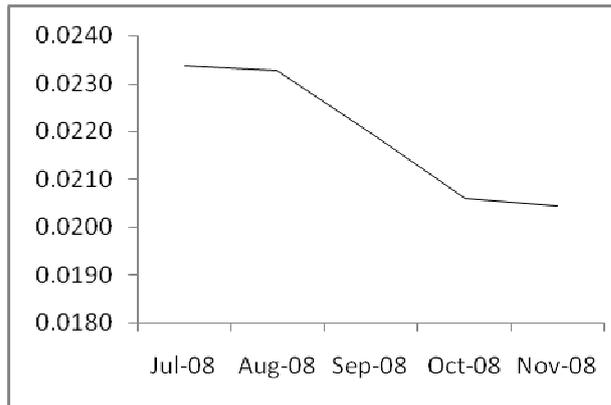


Figure -1 shows that at the time of global financial crisis breaks the Indian Economy in July 2008, the rupee value was ` 0.0234 (₹42.758/ \$1) and it was ` 0.0204 (₹48.937/ \$1) in November 2008.

From the Figure -2, it shows that the rupee value against the dollar was Rs. 0.0140 (₹71.294/ \$1) during the outbreak of January 2020 in India and it was Rs.0.0132 (₹75.674/ \$1) in May 2020.

It is shown that the trend line of Indian rupee value against a dollar of both periods like parallel line, it means that the rupee value slightly decreased for one month, and there was a substantial decrease for next two months and then it has changed slightly in the following month in both the global financial crisis, 2008 and the coronavirus diseases, 2019 crisis. But, during the global financial crisis, the percentage of decreased in rupee value against the dollar is higher than the period of coronavirus diseases outbreak period.

Table 1 Indian rupee value volatility with the US Dollar during the global financial crisis 2008 and Pandemic situation of Covid-19

Period	Kolmogorov-Smirnov		t-Test Results			
	Statistic	Sig.	Mean	Std. Deviation	t	Sig. (2-tailed)
GFC-2008	.230	.200*	.02194000	.001427585	18.552	.000
COVID-19	.256	.200*	.01354000	.000433590		

From table 1, we find it normally distributed the data because of the P-Value is greater than the 0.05 level of significance in the Kolmogorov- Smirnov test. The t-test for mean differences shows that the average rupee value during the global financial crisis 2008 is 0.02194 against the US dollar, and it is Rs.0.1354 during the Pandemic situation of Covid-19. The volatility of Indian rupee during the global financial crisis of 2008 is higher than during the pandemic situation of Covid-19.

Hypothesis result

Since the P-value is lesser than the 0.05 level of significance, the null hypothesis is rejected, and we accept the alternative hypothesis. It means that there is a significant difference in the rupee value volatility against the US dollar during the period of the global

financial crisis in 2008 and the pandemic situation of Covid-19.

Conclusion

The research findings show that during global financial crisis 2008 and coronavirus diseases 2019, the exchange rate of Indian rupee with US dollar has more or less the same trend line. It means that both economic crises (GFC-08 and COVID-19) lead the exchange rate of rupee value with a dollar into the same direction. But it slightly improves the rupee value against the US dollar in the fifth month (May 2020) after the novel COVID-19 outbreak. This concludes that the rupee value volatility during the period of the global financial crisis 2008 is higher than during the Pandemic situation of Covid-19 period.

Limitations

1. The study covered only rupee value volatility against the dollar during two recent economic crises.

It has taken the monthly average rupee value against the dollar for first five months of these periods in two crises.

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