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Abstract

The main aim of this paper is to validate the Sticky Price Monetary Model in India and China. This aim will be achieved by the investigation of the major determinants of exchange rate in these two economies. One of the main reasons of conducting this research is because the last 25 years were crucial years in developing Asia (especially India and China) after Globalisation. Another reason is because exchange rate is an element of attracting Foreign Direct Investment which has started in India in 1991 and in China mainly after 1980. In this study, we take exchange rate as the dependant variable and money supply, interest rate, Consumer price index and GDP as independent variables based on the sticky price monetary model. A Quantitative Method with the help of regression is implemented for data analysis and to obtain the results. The data from year 1995 to year 2020 for India and China has been collected from the World Bank database. This study will help to understand and identify the major determinants of exchange rate behaviour in the two countries. The empirical results indicate that for the case of China, money supply, GDP, and CPI are found to be significant in the model. The coefficient of money supply and CPI are positive while GDP found to be negative. For the case of India, interest rate, money supply and GDP found to be significant. The coefficient of interest rate and money supply are positive, and GDP is negative. The GDP impact in both economies is negative, an increase in GDP results in a decrease in the exchange rate. More specifically, when GDP increases, the value of the local currency will increase as locals will pay less to get the same amount of foreign currency ($US). These findings will have important information for the policy makers.

Keywords: Exchange rate, money supply, Interest rate, GDP, CPI

1 Introduction

Exchange rate is a term use for measuring evaluation of international competitiveness. This is known as index of competitiveness of any country. This relation is inverse to the competitiveness. As the value of index of any country increases then lower the competitiveness of that country exist. Exchange rate is defined as one country's price currency introduced in other country's price currency. In international market, one country's currency trades to other country's currency. This Forum is known as the foreign exchange (Forex) market. This trading is done only if there is determine Exchange rate of country's currency. Exchange rate is one of the important factors in a country's economy. Fluctuation of Exchange rate is the study of exchange rate. There are Many factors which affects the exchange rate, and exchange rate also affects these factors. In this study, we will study various variables which determines exchange rate in India and China and will make comparison between these economies.

2 Literature Review

Ahmad, Binti, & Fizari, (2011) Many Countries had chosen Fixed Exchange rate regime against one another from World War II to until 1973. Fixed Rate regime are currency unions, dollarized regimes, currency boards and conventional fixed pegs.

2.1 Exchange rate determinants:

Exchange rate is one of the important factors in a country's economy. Fluctuation of Exchange rate is the study of exchange rate. There are Many factors which affects the exchange rate, and exchange rate also affects these factors.

Dash & Bhole, (2007) examined for period of January 1991 to December 2005 about the interest rate affect over the exchange rate in phased manner. They evaluated that between interest rate and foreign exchange rate during "High" Interest Rate period (January 1991 to March 1997) have positive relationship and not in other case, the "Low" or "Soft" Interest Rate period (April 1997 to December 2005).

Agrawal , Srivastav, & Srivastav, (2010) dissected during period of during October 2007 to March 2009, the relationship between Nifty returns and Indian Rupee-US Dollar exchange rates. According to him, there is negative unidirectional relationship running from the former towards the latter.

Goyal, (2010), reviewed the varying INR trends over the restructuring period regarding exchange rate determinants. He analysed that capital inflows were the major influencing factor for the exchange rate during times of Crisis.

Dua & Rajiv, (2010), explained predicting performance of the monetary model. On this, there are several studies of extension were developed by Authors in the past. Using this, they included several monetary factors on which they developed a model for forecasting exchange rate in India and more real factors which may play role for affecting exchange rate. The model involved monthly data on US and Indian differential of Treasury bill rate, trade balance, three-month forward premia, inflation rate, industrial production index, volatility of capital inflows, money supply, order flow and government intervention. The data include for a period from July 1996 to December 2006. The authors noticed forecasting results and model performance much precise.

Sharma , (2011), In 2008 currency derivative was introduce, due to this currency spot market become more volatile. Sharma, 2011 attempted to relate or discover relation between trading activity in the currency futures and the volatility in exchange rate in the spot market. Using Granger causality test, ARCH and GARCH model conducted in analysis on volatility of spot exchange rate prior to the introduction of currency futures. According to him, volatility of spot exchange rate before the introduction of currency futures is lower than volatility of spot exchange rate after the introduction of currency futures. As future market was accepted in India in year 2008, the global crisis effect did not consider by him, which might give different findings.

Tripathy, (2013), identified the market forces i.e., Demand and supply are the major determinants which play big role in exchange rate in India, after the global crisis effect took place in all over world. He examined that Government intervenes in exchange rate market, and RBI intervenes occasionally to manage exchange rate in India but besides that the market forces are most important influencing factor for it.

Khan & Qayyum, (2011), According to them, they explored that to determining the Exchange rate of Pakistan what is the role of monetary fundamentals. To prevent volatility, the authority of Pakistan may use the monetary variables to forecast exchange rate.

Liew, Baharumshah, & Puah, (2009), Moreover they have explored long-run relationship between determinants affecting exchange rate and Exchange rate. As Japan is most important trading partner of Thailand, he chooses Japanese Yen as base currency. He concludes that money supplies, income, and interest rates of both the countries (Thailand & Japan) would be conductive in forecasting and supervising the exchange rates of both countries.

2.1.1 Exchange rate and Money Supply

Suthar, (2008), The liquidity is an integral part of economy. It increases in economy with growth of broad money and foreign exchange reserves in theoretical way, if liquidity increases then it affect domestic currency result in followed by depreciation in domestic currency. To understand it in easy way, increase liquidity causes inflationary pressure when the output is not rising at balanced rate, this inflationary pressure will obstruct the competitiveness of export and result into depreciation of domestic currency (Ramifications of this will be like as discussed for high inflation differential). Although, it is also true that if we increase in foreign exchange reserves also implies to increase in supply of foreign currency which results in appreciation in domestic currency. For studies this, the growth rate of foreign exchange reserves and the growth rate of broad money as exclamatory variables in the model taken into consideration.

Umeora, (2010), Money Supply is the life wire of all economic activities and so has powerful effects on the economic life of any nation. An increase in Money Supply puts more money in the hands of producers and consumers and thereby stimulating increased investment and consumption. Consumers increase purchases and business firms respond to increased sales by ordering for more raw materials and other resources to achieve more production, the spread of business and capital goods. As the economy goes buoyant, Stock Market prices rise, and firms issue more equity and debt instruments. As the Money Supply expands, prices begin to rise, especially if output growth reaches full capacity. Lenders insist on higher interest rates to offset expected decline in purchasing power over the life span of their loans. Opposite effects occur when the Money Supply falls or when there is decline in its growth rate, economic activities decline and disinflation (reduced inflation) or deflation (falling price) results. (Gharleghi, Shafighi, 2020)

2.1.2 Exchange rate and Interest Rate

Interest rate is major factor for determining Exchange rate. Interest differential is the main factor for movement of exchange rate. In simple word, difference in interest rate between major countries. Country having higher currency with high interest rate attracts a greater number of investors who are looking for a better opportunity for their investment. Due to this Currency demand increases as in the terms of investment. And result in opposite relationship exists for declining interest rate which means low down interest rate tends to drop-in exchange rate. As interest rate increase for any country, then correspondingly currency deposit for respective country will also increases. So, in this, appreciation of respective country take place.

In 1986 Federal Reserve Bank of Kansas City made a report to analyze the correlation between interest rates and exchange rates in USA from 1974 to 1986. Due to inflation shock the period, it is found that there was negative relation between exchange rate and interest rate. On the other side, it is analyzed positive relation between interest rate and dollar price during 1980s.

Tayfur, UĞUR, & Kayhan, (2013), According to them, to study casual relation between interest rate and exchange rate in perspective of BRIC-t countries. It means Brazil, Russia, India, China, and Turkey. They took the employing monthly data from flexible exchange rate to July 2011. As to study the aim, they use non-linear causality test and approaches are used. Only in China, interest rate affects exchange rate which effect last for long run by using frequency domain causality test. On the other hand, exchange rate surprises prompt changes in interest rate in the shorter period. For this objective, the non-linear causality assessment is delivered to decide the asymmetric causal relationship. We also employ frequency domain causality approach to differentiate short and long-run impact of interest rate and real exchange rate on each other to get more appropriate results. The non-linear Granger causality test results show that there is bi-directional causality between the real exchange rate and real interest rate in Turkey. However, this result conflicts with the result of frequency domain causality test results which imply that in Turkey there is no causality in any period and in both directions. Moreover, according to the non-linear Granger causality test results there is only uni-directional causality between the variables in China and India. But, for India, the Granger causality test results conflict with the frequency domain causality test results that denote a causal relationship from real exchange rate to real interest rate. However, for China, the frequency test results show bi-directional causality.

2.2 Exchange rate Determination: India

Several macroeconomic variables have impact on determining Exchange Rate such as inflation rate, stock price, interest rate etc.

Figure 2-1 Official exchange rate (LCU per US$, period average) - India *(World Bank Open Data, n.d.)*

Official exchange rate (LCU per US$, period average) - India
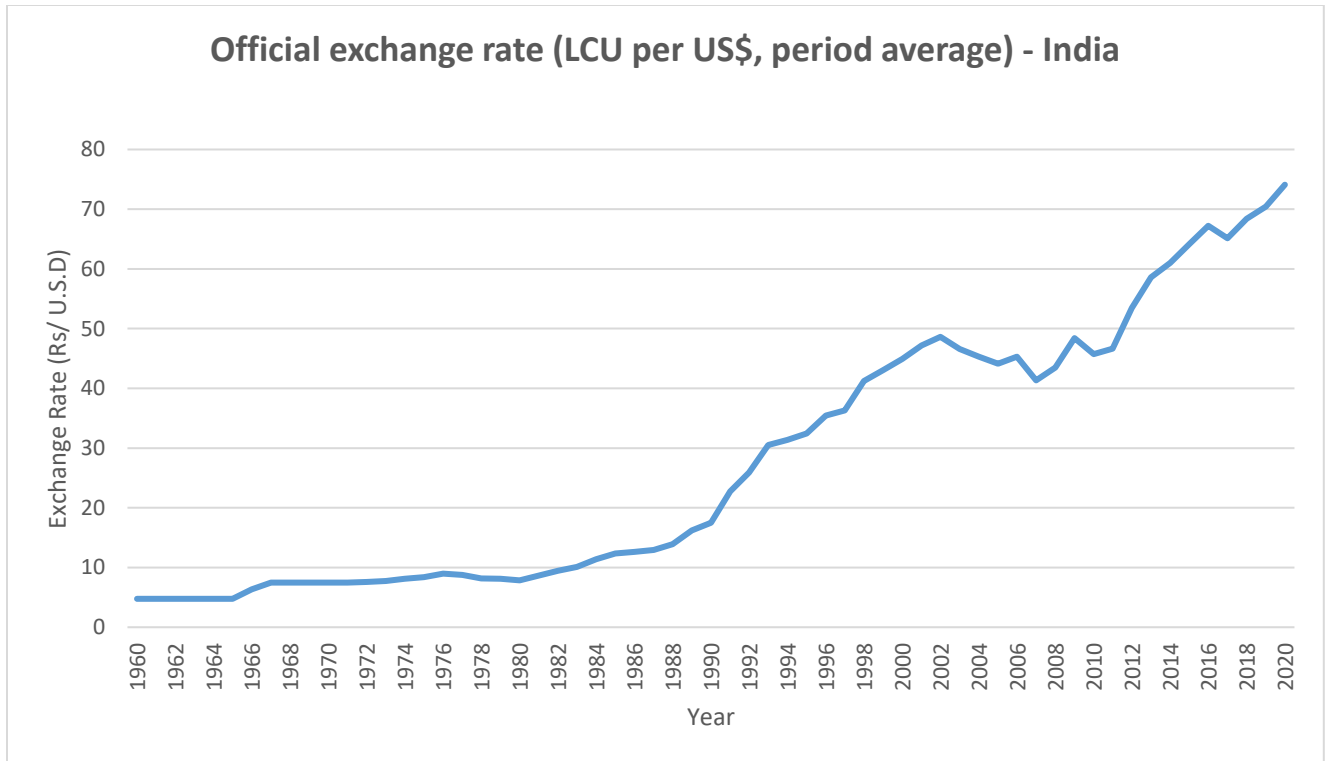
As per (World Bank Open Data, n.d.), Above figure shows Exchange rate growth over the period from year 1960 to year 2020 for India.

Pankaj Sinha and Deepti Kohli, 2013 identified that Indian rupees has denigrated pointedly against the U.S.D. Problems of persistent inflation, high fiscal deficit, lack of reforms, global uncertainties etc. are the main reason for depreciation of rupees, which unbalance Indian economy will put more pressure on overall domestic inflation. Crude oil is much important factor play in Indian economy. Import of Crude Oil is fluctuating the Indian economy. Import of essentials with depreciating rupees will become more expensive which will add more value on domestic due to use of transportation (Shafighi, et.al, 2016)

(Jain, 2012) is explained Purchasing power parity. According to him, domestic exchange rate and inflation differential has direct connection. In fact, depreciation of domestic currency is result of a higher domestic inflation relative to that of other nations. Increase in domestic inflation when compared to world inflation will also increase domestic demand for foreign goods and lower the foreign demand and for domestic goods, as more domestic consumer will shift towards foreign goods. When consumer sell domestic currency for foreign currency then supply of domestic currency in foreign exchange market will increase. For this require depreciation of domestic currency to maintain rate as per require purchasing power theory. Therefore, the higher the

depreciation of domestic currency, the higher will be the inflation differential between domestic and foreign countries, and vice versa.

(Jayachandran , 2013) studied the relationship between the impact of exchange rate volatility on the exports and import in India. He selects data from year1970 to 2011.The conclusion of his studied explained as real import and export are fluctuated by exchange rate volatility, GDP, real exchange rate, foreign economic activity. According to him Exchange rate have negative impact on export and import, indicating that reduce real export India due to higher exchange rate fluctuating whereas GDP has positive significant impact on real export.

2.3 Exchange rate Determination: China

As per (World Bank Open Data, n.d.), below figure shows Exchange rate growth over the period from year 1960 to year 2020 for China.

Figure 2-2 Official exchange rate (LCU per US$, period average) – China *(World Bank Open Data, n.d.)*
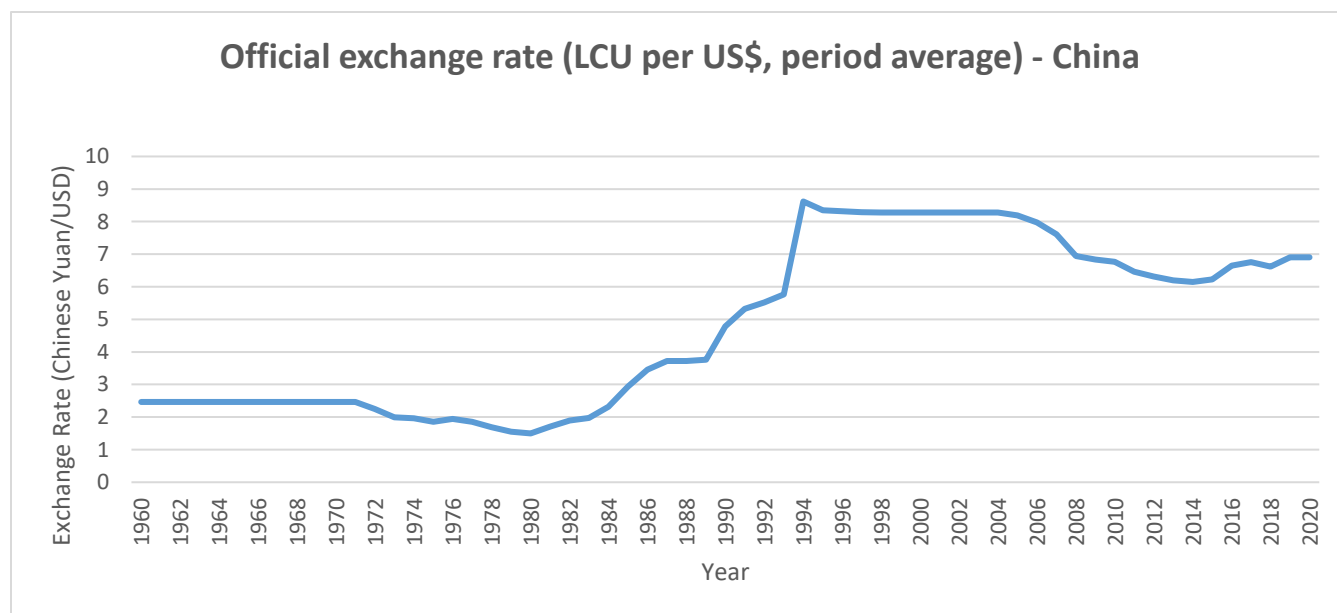
As per above, China's change of Exchange rate shows over the period from 1960 till 2020.China is one of the most likely developing countries in Asia. In China Evolution is takes place from strict exchange rate control to flexible exchange rate system. These faces are very crucial in determining Exchange rate.

Form year 1953 to 1978, China's experienced Fixed Exchange Control system. During this period, China's economy is very centered and planned. China implemented rigid foreign exchange control because shortage of foreign exchange resources.

From year 1979 to 1993, this period is transitional period for China's Liberalization. China's start establishing market economy from 1978 and starts reforming foreign exchange system which will me most suitable for China's economic development.

From year 1994 until 2005, China used a de facto fixed exchange rate regime with renminbi (RMB) pegged to the US dollar within narrow trading band. As official foreign assets loaded up, the questionably low RMB came under the spotlight in political discussions over China's current account imbalance with the USA. In scholarly circles, many supported this view.

(Bergsten, 2010) argued that on trade-weighted basis RMB was undervalued by 25 percent and by 40 percent US dollar on his testimony to the US House of Representatives.

(Cline, 2005) explained and claimed that Imbalance of concern to the USA would not address by a RMB appreciation. To appreciate China's exchange rate government started to increase pressure on him.

(Kessler & Subramanian, 2014) explained Since 2005 one third against the US dollar due to appreciation of RMB since the release by the World Bank of the latest PPP estimates of gross domestic product (GDP) in April 2014 which suggest overvaluation of the RMB.

2.4 Sticky Price Monetary Model

In middle of last century, the theory of exchange rate determination was introducing. From this period, so many monetary models were developed like the equilibrium and liquidity model, monetary model, balanced and payment approach, the portfolio model, the purchasing power purity (PPP) approach, etc. Sticky price Monetary model suits this report.

(Dornbusch, 1976) introduce and developed sticky price monetary model. According to him, In the Sticky Price Monetary Model, for short run the price of goods is sticky. As goods price adjust relatively to asset price, ppp holds price of goods only in long run not it short run (Hassan & Gharleghi, 2015; Zhuk & Gharleghi, 2015; Gharleghi, Shaari, Shafighi, 2014).

(Diamandis, Georgoutsos, & Kouretas, 1996) explain this model as "allows substantial overshooting for both the nominal and the real price-adjusted exchange rates beyond their long-run equilibrium (PPP) levels, since the exchange rates and the interest rates compensate for sluggishness in the goods prices".

The basic monetary model can be represented the following way:

$$s = α0 + α1 (m) + α2(y) + α3(i) α4 (π) + error$$

Here "s" is nominal exchange rate, m is money supply, "y" denotes real income (or industrial production, or real output), "i" is nominal interest rate, and π is the inflation.

(L.H., 1981) explained as α1 is expected to be negative in both models since growth in real income increases the demand for money, because at a given level of prices, there is a larger value of transactions to be financed. Thus, growth in real income causes exchange rate devaluation.

(Frenkel, 1980) states that in the sticky-price monetary model α2 is expected to be negative. This means, "an increase in the domestic interest rate, for a given expected inflation rate, attracts an incipient capital inflow that causes the currency to appreciate".

3 Methodology

This section deals with the research framework and data collection method used. The methodology approach and the analysis approach will be presented.

3.1 Data and Information Collection

Aaker, David , & George, (1986), There are several methods to use in a data and information collection process. In this report secondary data collected from world bank.

3.2 Secondary Data Collection

Kinnear & Taylor, (1991), Secondary data can be divided into two categories: internal and external data. Internal secondary data is available within the company studied, e.g., annual reports. External secondary data is provided by sources outside the organization, such as reports and books. However, internal data should always be valued above external data. The advantages of secondary data are that they save cost and time. Secondary data can also serve as comparative data, which primary data can be evaluated and interpreted against. Two major disadvantages of secondary data exist: this data may not fit the project since it was not acquired for this purpose, and the accuracy may not be as good as that of primary data.

In this study, in order to effect of independent variables on determining or fluctuating value of exchange rate, we selected secondary data, to compile from year 1995 to last year i.e. year 2020 were collected. The total Time period is 26 years. Sample size is of last 26 years of data. (without missing any value). Method use for examination is regression analysis.

As there was many variable who play vital role to determining Exchnage rate. The relationship between Exchange rate and other independant variables such as Money Supply, Interest Rate, Gross Domestic Product, Consumer Price Index are analzed. And this data will compare with other asian countrys data to examine. So we selected China as Other country, As China is one of the Asias big country. So comparing India's data with Chin will be give measure findings about determinants for Exchange Rate.

Figure 3-1 : Research Framework (Author)
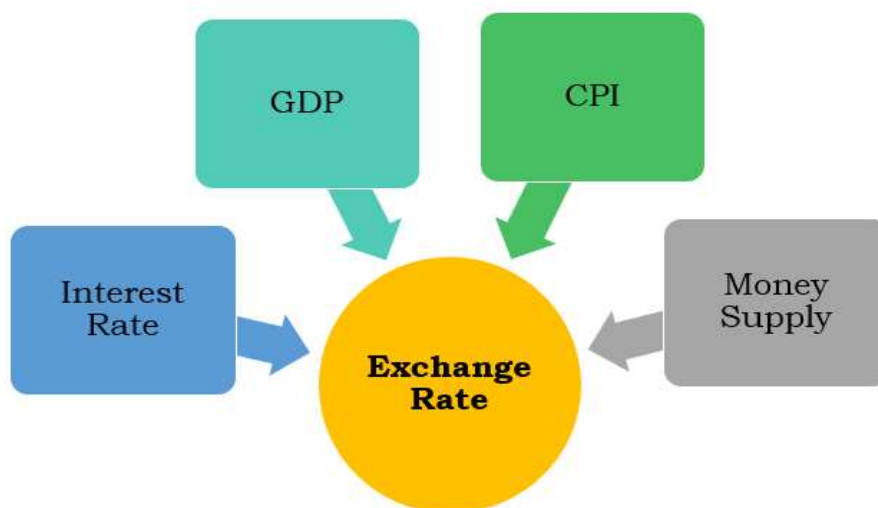
Y = f (X1, X2, X3, X4)

EXR = f (Interest Rate, Money Supply, GDP, CPI)

Following data shows data about India from year 1995 to 2020. (World Bank Open Data, n.d.)

Table 3-1 India Data from year 1995 to 2020 (World Bank Open Data, n.d.)

India					
Year	Exchange Rate	Interest Rate	Money Supply (Log)	GDP (Log)	CPI
1995	32.42708	5.864178113	12.72014	11.55664	10.22489
1996	35.43317	7.792994302	12.79472	11.59428	8.977152
1997	36.31329	6.909578992	12.86534	11.61896	7.164252
1998	41.25937	5.12127633	12.93786	11.62464	13.23084
1999	43.05543	9.191247325	13.0066	11.66164	4.66982
2000	44.94161	8.34261083	13.06794	11.67061	4.009436
2001	47.18641	8.591449296	13.12607	11.68614	3.779293
2002	48.61032	7.90717719	13.19336	11.71175	4.297152
2003	46.58328	7.30788116	13.24657	11.78369	3.805859
2004	45.31647	4.910128304	13.31376	11.85074	3.767252
2005	44.09998	4.855145172	13.37672	11.91402	4.246344
2006	45.30701	2.570606702	13.46177	11.97325	5.796523
2007	41.34853	5.681844063	13.5491	12.0852	6.372881
2008	43.50518	3.77175625	13.63007	12.07878	8.349267
2009	48.40527	4.808592108	13.70193	12.12772	10.88235
2010	45.72581	-1.983859222	13.77309	12.22417	11.98939
2011	46.67047	1.317979708	13.83806	12.2608	8.858361
2012	53.43723	2.473521656	13.88356	12.26189	9.312446
2013	58.59785	3.865992863	13.94362	12.26875	11.06367
2014	61.02951	6.69517609	13.98733	12.30944	6.6495
2015	64.15194	7.556488414	14.03115	12.32296	4.906973
2016	67.19531	6.232711415	14.05973	12.36074	4.948216
2017	65.12157	5.327608862	14.10282	12.42349	3.328173

Year					
2018	68.38947	5.510956675	14.14626	12.43154	3.945069
2019	70.42034	5.697090258	14.18966	12.45796	3.723276
2020	74.09957	4.37952476	14.24073	12.4188	6.623437

Following data shows data about China from year 1995 to 2020. (World Bank Open Data, n.d.)

Table 3-2 China Data from year 1995 to 2020 (World Bank Open Data, n.d.)

China					
Year	Exchange Rate	Interest Rate	Money Supply (Log)	GDP (Log)	CPI
1995	8.351417	-1.41265	12.7835	11.86602	16.79123
1996	8.314175	3.35497	12.88136	11.93639	8.31316
1997	8.289817	6.911699	12.96316	11.983	2.786465
1998	8.278958	7.356478	13.0235	12.01243	-0.77319
1999	8.27825	7.20405	13.08294	12.03902	-1.40147
2000	8.278504	3.710664	13.13341	12.08327	0.347811
2001	8.277068	3.726664	13.19427	12.12691	0.719126
2002	8.276958	4.679724	13.24789	12.16748	-0.73197
2003	8.277037	2.638147	13.32431	12.22018	1.127603
2004	8.276801	-1.28281	13.38458	12.29122	3.824637
2005	8.194317	1.613278	13.45181	12.35907	1.776414
2006	7.973438	2.110578	13.53858	12.43967	1.649431
2007	7.607533	-0.25957	13.60578	12.55027	4.816768
2008	6.948655	-2.30562	13.67685	12.66222	5.925251
2009	6.831416	5.531123	13.78549	12.70772	-0.72817
2010	6.770269	-1.0024	13.86085	12.78441	3.175325
2011	6.461461	-1.40243	13.93023	12.87803	5.553899
2012	6.312333	3.585204	13.98863	12.93106	2.619524
2013	6.195758	3.755387	14.04396	12.98093	2.62105
2014	6.143434	4.522308	14.08933	13.02018	1.921642

2015	6.227489	4.353072	14.14373	13.04382	1.437024
2016	6.644478	2.901815	14.19035	13.05051	2.000002
2017	6.758755	0.112554	14.22422	13.09027	1.593136
2018	6.615957	0.821502	14.25356	13.14285	2.07479
2019	6.908385	3.02362	14.29052	13.15473	2.899234
2020	6.900767	3.653521	14.33197	13.16799	2.419422

4   Results/Analysis

In this section, Result of Relationship, and reliability for determining Exchange rate with the help of Regression Analysis is explain for India and China. Then with the help of interpreting regression analysis determining variable or factor is compare between India and China.

4.1   Regression Analysis – India

To check how much of this data, explain for determining Exchange rate with the help of independent variables for India, we use regression analysis, which is presented below table 4-1 Regression Statistics – India (Author)

Table 4-1 Regression Statistics- India (Author)

Regression Statistics	
Multiple R	0.955444515
R Square	0.91287422
Adjusted R Square	0.896278834
Standard Error	3.734961685
Observations	26

Regression analysis is implemented here, to classify the implication effect of the independent variables toward dependent variable, in above table, R square value is 91.2874%, It means 91.2874% data is explain relationship between independent variable and dependant variable. It is also shows that above data set is good and give very good result to explain reliability to explain determining Exchange rate for India

The below table ANOVA analysis is done for explaining is this model is good or not. All variables taken can be included in the regression analysis, as The ANOVA result in table 4-2 indicates that there is a significant difference between the mean of the variables.

Table 4-2 ANOVA test– India (Author)

ANOVA					
	df	SS	MS	F	Significance F
Regression	4	3069.416775	767.3542	55.00771	7.87478E-11
Residual	21	292.9487145	13.94994		
Total	25	3362.365489			

Dependent Variable: Exchange rate

Predictors (constant): Interest Rate, Money Supply, GDP, CPI

From the table 4-2 ANOVA test-India (Author), significance value is smaller than alpha =0.05, so this model is good for analysis. Above table displays overall the significant of overall predicted regression model to study for India. As significance value i.e., P value is smaller than 0.05 ($P<0.05$), this calculation helps to increase confidence level for regression analysis projected for given data set is acceptable, satisfactory, and valid.

The table 4-3 Regression Analysis Result-India (Author) below shows result of the overall coefficient produced from multiple regression analyse through SPSS. Coefficient's result will be used and explained more for hypothesis testing.

Table 4-3: Regression Analysis Result-India (Author)

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-155.9537874	77.01444396	-2.02	0.055768	-316.1140913	4.20651651	-316.1140991	4.20651651
Interest Rate	1.462511387	0.445450579	3.283218	0.003546	0.536146196	2.388876578	0.536146196	2.388876578
Money Supply	50.90331696	13.87057797	3.669877	0.001427	22.05787099	79.74876294	22.05787099	79.74876294
GDP	-40.83130042	21.42679042	-1.90562	0.070482	-85.39075042	3.728149585	-85.3907504	3.728149585
CPI	0.041117367	0.336364171	0.122241	0.903871	-0.65839022	0.740624954	-0.65839022	0.740624954

Dependent Variable: Exchange rate

Predictors (constant): Interest Rate, Money Supply, GDP, CPI

From Above table, variables are affecting exchange rate of India. From the coefficient value from above table, it is easy to find relation between independent variable and Dependant variable. It is seen that coefficients of independent variables interest rate, money supply and CPI are positive whereas coefficient of independent variable GDP is negative. That means if Interest rate, Money supply and CPI increase then Exchange rate is also increase. So, from the result it can observe that independent variables interest rate, money supply and CPI are directly proportional to Exchange rate of India and indirectly proportional to GDP. As independent variable GDP decrease then dependant variable exchange rate of India will increase or vice-versa.

Hypothesis analysis done from regression analysis, it is found that p-values of independent variables interest rate and money supply are less than alpha ($\alpha = 0.05$) whereas p-values of independent variable GDP and CPI are more than alpha ($\alpha = 0.05$). It can conclude that

hypothesis of independent variables Interest rate and Money Supply are accepted whereas hypothesis of independent variables GDP and CPI are rejected.

So, it explains that there is correct corelation between independent variable interest rate and money supply as compared to other independent variable GDP and CPI for determining exchange rate of India.

Figure 4-1 Linear Graph (Exchange rate Vs independent variables) for India- (Author)
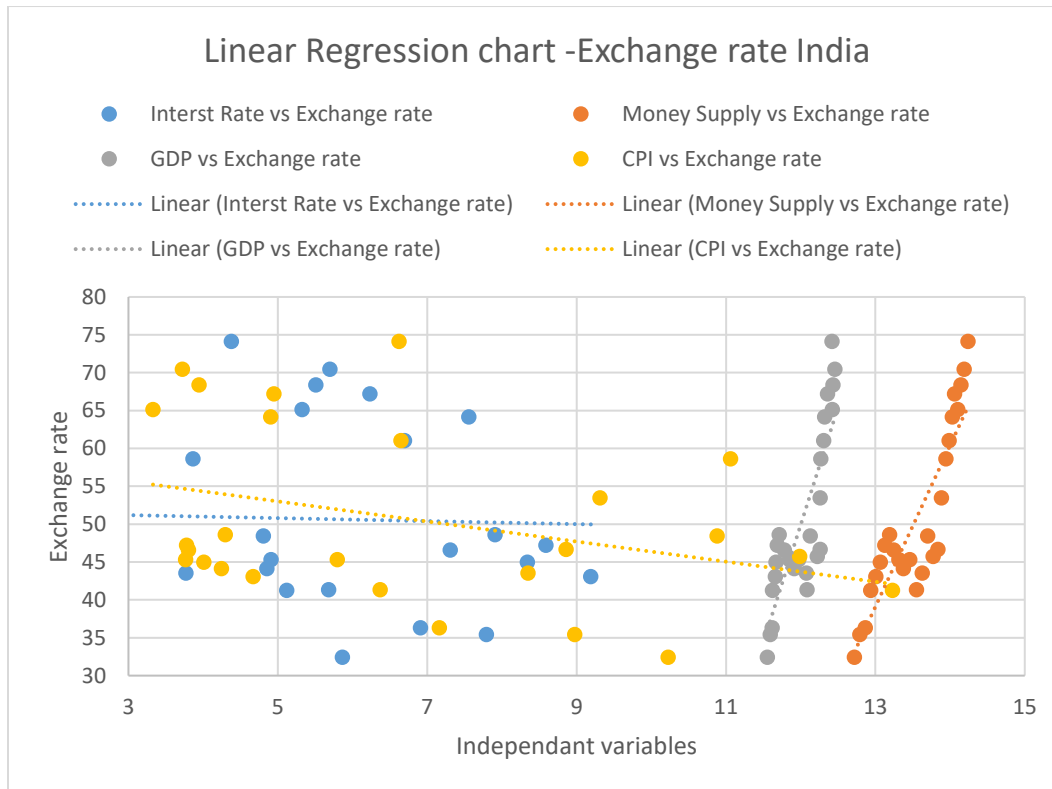
Above graph shows linear regression analysis between Exchange rate (dependant variable) vs independent variables for India.

From the regression analysis it can observe that independent variable Money Supply main variable which affect or fluctuate dependant variable exchange rate of India. So, Money supply play vital role for determining Exchange rate of India.

4.2   Regression Analysis- China

To check how much of this data, explain for determining Exchange rate with the help of independent variables for China, we use regression analysis, which is presented below table 4-4 Regression Statistics – China (Author)

Table 4-4Regression Statistics- China (Author)

Regression Statistics	
Multiple R	0.981144491
R Square	0.962644511
Adjusted R Square	0.95552918
Standard Error	0.180947663
Observations	26

Regression analysis is implemented here, in order to classify the implication effect of the independent variables toward dependent variable for China, in above table, R square value is 96.2644%, It means 96.2644% data is explain relationship between independent variable and dependant variable. It is also shows that above data set is good and give very good result to explain reliability to explain determining Exchange rate for China.

The below table ANOVA analysis is done for explaining is this model is good or not. All variables taken can be included in the regression analysis, as The ANOVA result in table 4-5 indicates that there is a significant difference between the mean of the variables.

Table 4-5 ANOVA test– China (Author)

ANOVA

	df	SS	MS	F	Significance F
Regression	4	17.71890044	4.429725109	135.291596	1.13592E-14
Residual	21	0.68758319	0.032742057		
Total	25	18.40648363			

Dependent Variable: Exchange rate

Predictors (constant): Interest Rate, Money Supply, GDP, CPI

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From the table 4-5 ANOVA test - China (Author), significance value is lesser than alpha =0.05, so this model is excellent for analysis. Above table displays overall the significant of overall anticipated regression model to study for China as significance value i.e., P value is tinier than 0.05 (P<0.05), this calculation supports to increase trust level for regression analysis projected for provided data set is acceptable, satisfactory and valid for China.

The table 4-6 Regression Analysis Result -China (Author) below reveals outcome of the overall coefficient released from multiple regression analyse through SPSS. Coefficient's result will be managed and clarified more for hypothesis testing.

Table 4-6 Regression Analysis Result-China (Author)

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	28.5343921	1.215112488	23.48292227	1.4796E-16	26.00742734	31.06135685	26.00742734	31.06135685
Interest Rate	0.009054793	0.019699061	0.459656088	0.65048626	-0.03191165	0.050021234	-0.031911647	0.050021234
Money Supply	8.895392574	1.295388161	6.86697072	8.6923E-07	6.201485419	11.58929973	6.201485419	11.58929973
GDP	-11.34639545	1.380691742	-8.217906357	5.3383E-08	-14.2177011	-8.475089784	-14.21770111	-8.475089784
CPI	0.053423893	0.019765321	2.702910511	0.01332361	0.012319658	0.094528128	0.012319658	0.094528128

Dependent Variable: Exchange rate

Predictors (constant): Interest Rate, Money Supply, GDP, CPI

From Above table, it can be detected that variables are affecting exchange rate of China. From the coefficient value from over table, it is simple to discover relation between independent variable and Dependant variable. It is noticed that coefficients of independent variables interest rate,

money supply and CPI are positive whereas coefficient of independent variable GDP is negative. That means if Interest rate, Money supply and CPI improve then Exchange rate is also improve. So, from the result it can examine that independent variable interest rate, money supply and CPI are directly proportional to Exchange rate of China and indirectly proportional to GDP. As independent variable GDP drop then dependant variable exchange rate of China will rise or vice-versa.

Hypothesis analysis performed from regression analysis, it is found that p-values of independent variable CPI are less than alpha (α = 0.05) whereas p-values of independent variables Interest rate, Money supply and GDP are more than alpha (α = 0.05). It can conclude that hypothesis of independent variable CPI is accepted whereas hypothesis of independent variables Interest rate, Money supply and GDP are rejected.

So, it describes that there is correct corelation between independent variable CPI as compared to other independent variables Interest rate, Money supply and GDP for determining exchange rate of China

From the regression analysis it can observe that independent variable CPI main variable which affect or fluctuate dependant variable exchange rate of CPI. So, CPI play vital role for determining Exchange rate of China.

Figure 4-2 Linear Graph (Exchange rate vs independent variables) for China- (Author)
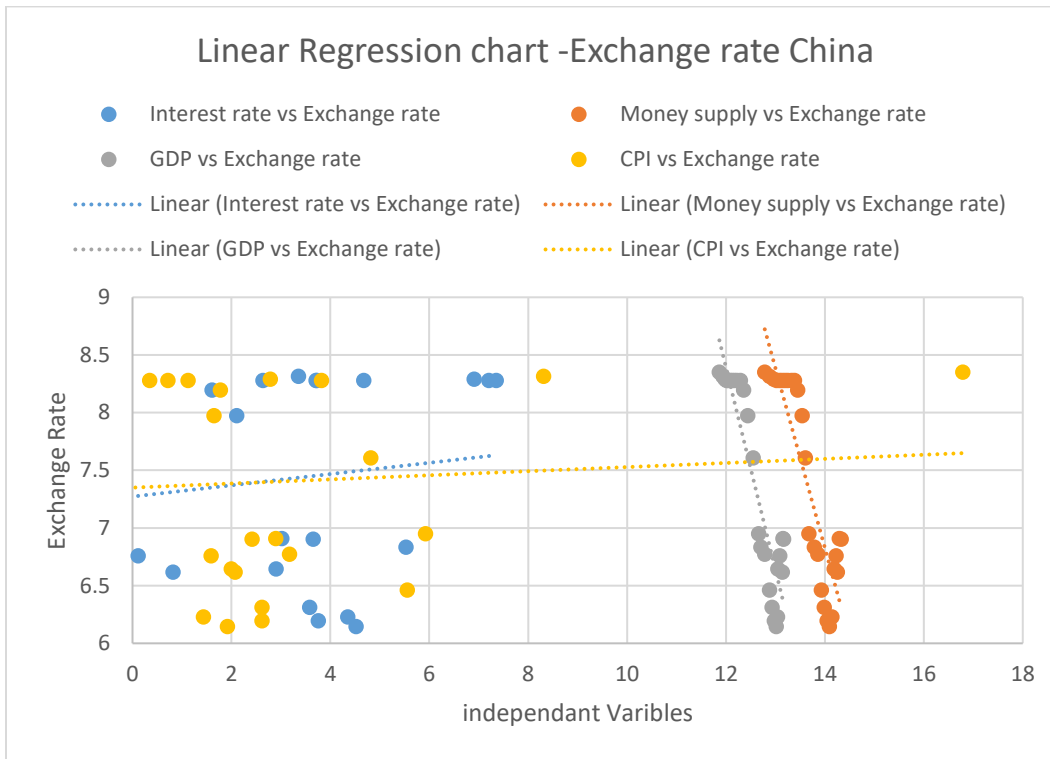
Above graph shows linear regression analysis between Exchange rate (dependant variable) vs independent variables for China.

5   Conclusion

The main aim of this paper was to analyse the exchange rate behaviour in India and China using regression analysis. The data was collected from the World Bank database. The empirical results revealed that in China, money supply, GDP, and CPI are found to be significant in determining the exchange rate behaviour. The coefficient of money supply and CPI were positive while GDP found to be negative. For the case of India, interest rate, money supply and GDP found to be significant. The coefficient of interest rate and money supply were positive, and GDP was negative. The GDP impact in both economies was negative, meaning that an increase in the GDP results in a decrease in the exchange rate. More specifically, when GDP increases, the value of the local currency will increase as locals will pay less to get the same amount of foreign currency ($US). These findings will have important information for the policy makers.

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