CHAPTER II
REVIEW OF LITERATURE

Studies on the relationship between exchange rates and stock prices can be traced way back to 1988. The available literature over the three decades established nothing conclusive and the debate still continues among researchers on the relationship between the two variables. The surveyed literature is classified into two broad categories viz.

2.1 Studies related to developed and other Asian countries

2.2 Studies related to India

This classification helps the researcher to find the studies which are giving conflicting results, and also to identify the gap with special reference to India.

2.1 STUDIES RELATED TO DEVELOPED AND OTHER ASIAN COUNTRIES

Mechri et al (2018) investigated the impact of exchange rate and relative price volatility on stock market fluctuations by considering two countries that belong to MENA zone (Tunisia and Turkey) during the period 2002-2017. GARCH model is used to analyse the volatility of both the market and multiple regression model is employed to determine the impact of exchange rate fluctuations and stock market. In case of Tunisia, the exchange rate volatility has a significant effect on stock market prices fluctuations and in case of Turkey, the volatility of exchange rate and interest rate has a positive impact on the Turkey's nominal market return. Further, the study suggest that both Tunisian and Turkish government should avoid political and debt problems or corruption to provide a favorable and secure environment for foreign investors.

Bala Sani and Hassan(2018) analysed the interaction between stock market and exchange rates in Nigeria using annual data from 1985-2015. Exchange rate, economic growth, money supply and share indices were considered in the study. ARDL model indicated that economic growth and exchange rate have positive and statistically significant impact on share indices in Nigeria, while money supply has negative and statistically significant influence on share indices during the study period. Also, the granger causality test revealed a unidirectional causality between both the market i.e.,

exchange rate to stock market. Further the study suggest that Central Bank of Nigeria to decrease the volume of money in circulation which in turn will help to decrease the price of goods and services in Nigeria.

Clement Mwaanga and Nsama Njebele (2017) studied the long-run and short-run relationship between the exchange rates and stock market prices in Zambia. To measure the stock market prices, the author used LuSE overall index (LuSE Index) and the exchange rate was measured by using the Zambia's REER (Real Effective Exchange Rate). The study resulted the existence of the long run between the variables. The Vector Error Correction Model (VECM) revealed that there is no short-run relationship between the stock market prices and exchange rates. The author suggested that investors should keep watching the movement of the exchange rate in order to mitigate investment risks.

Waqar Khalid (2017) empirically investigated the economic effects of interest rates and exchange rates on stock market capitalization by covering annual data for Pakistan from 1990-2017. From Johansen Jeselius approach, the study detected that the whole series of data are co-integrated revealing the long-term association among the examined variables. The long-term coefficient resulted that 1% increase in exchange rate and interest rate contributes 3.17% increase in market capitalization. And granger-causality test revealed the existence of a unidirectional causality from foreign exchange rate to interest rate. The study suggested that reduction of bank rate in the economy will stimulate or increase the investment level both nationally and internationally and develop the financial sector development.

Khalifa Hassanain (2017) examined the stock prices and real exchange rate movements in the Gulf cooperation council economies (Kuwait and Saudi Arabia). The main aim of this paper is to study the volatility in stock prices in some of these markets by the large swings in international currencies. ARDL model resulted that long run relationship exist between oil price and stock index and real exchange rate appeared to be not significant in this case. DCC Garch model revealed that real exchange rate appears to be not significant in the case of Kuwait but significant in the case of Saudi Arabia.

Sima Siami–Namini (2017) tried to explore the association between the exchange rates and stock prices of Iran on quarterly data for the period between 1994 and 2010 using Johansen and Juselius co-integration test and the short-run dynamic causal relationship employing Toda and Yamamoto procedure (1995). The study showed that the existence of co-integrating relationship between exchange rates and stock prices. Considering the results of Granger Causality using Toda and Yamamoto procedure, there was no significant relationship between the stock prices and exchange rates of Iran in short run.

Ryuta Sakemoto (2017) examined the dynamic relationship between equity prices and exchange rates in Asian countries such as Indonesia, Korea, Japan, Hong Kong, Malaysia, the Philippines, Singapore and Thailand, focusing two financial crises of 1997 and 2008 during the sample period of November 1995 to December 2013 by employing the non-parametric causality test on daily data. The study found that the existence of dynamic interconnection between exchange rates and stock prices and proved the linkage of volatility upshot to the non-linear causal relationships. The volatility effects performed a momentous role during the financial crises.

Yunlong Yu and Dong Liao (2017) attempted to inspect the linkage and volatility spillover effects of stock prices, exchange rate and money rate in China's financial markets based on the daily data for the period from June 2005 to December 2016 by employing three variable GARCH-BEKK models proposed by Engle and Kroner. The study found that there was unidirectional mean spillover effect from currency market to stock market and there was asymmetric bidirectional mean spillover effect between both stock market and money market and currency market and money market. The study also suggested the usage of the results in policy implications for more appropriate and effective management of financial asset prices.

Andre Yone Haughton and Emma.M Iglesias (2017) analyzed the stock prices and exchange rate movements and volatility in the two Caribbean countries i.e., Jamaica Trinidad and Tobago. The study used monthly data from 2002 to 2012. The results revealed that the stock prices significantly impacted the exchange rate in the tranquil sub-period and full period in Jamaica, over all three periods in Trinidad and Tobago and in the tranquile period for Mexico, Argentina and Chile. Thus, this indicated the importance

of incorporating volatility explicitly in the model. The author suggested government should try to prevent a currency crisis by stimulating economic growth and expansion of the stock market to attract capital inflow as in Lin.

Parham Parsva and Chor Foon Tang(2017) studied the interaction between stock prices and exchange rates in Middle-East economies. The main objective of this study is to examine the causal interaction between stock prices and exchange rates empirically in Kuwait, Iran,Saudi Arabia and Oman from 1st January 2004 to 31st December 2011. Among four Middle-East economies, the stock prices and exchange rates have bi-directional relationship in Oman, Iran and Saudi Arabia, but the variables do not interact in Kuwait. Also, the author found that these relationships are stable over the analysis period from a recursive causality tests.

Ngo Thai Hung (2017) studied the causal linkage between the stock prices and the exchange rates of Eastern European economies such as Hungary, Czech Republic, Poland and Romania on the monthly data for the period October 2008 to September 2017 applying Granger's Causality test and Vector Auto Regression Analysis. ADF test and PP test were employed to test the stationarity of the variables. The study found that there was no causality between the stock returns and exchange rates in the four countries. Considering VAR analysis, even if both the variables were interrelated to each other, there were no reliable linkage and Impulsive Response technique showed that stock return influenced exchange rate return in the short run but not in the long run periods. The study suggested the application of results for predicting the future movement of equity prices and exchange rates.

Oguzhan Ozcelebi and Nurtac Yildiri (2016) studied the interaction between exchange rates and stock prices in Eastern Europe (Czech Republic, Hungary, Poland and Turkey). The author used Structural Vector Error Correction (SVEC) models and found that the changes in stock prices may have macroeconomic moments by leading to changes in real exchange rates while fluctuations in exchange rates may have a considerable role in the change in stock markets. Also the relationship between stock prices and exchange rates in these countries may be because of the monetary policy decisions in domestic and foreign

factors. These results stress the significance of the derivation of the optimal economic policy framework to examine the interaction between stock prices and exchange rates.

La Saidi (2016) examined the effect of stock prices and exchange rates on economic growth in Indonesia during the period 2004 - 2015. Stationary test showed that all of the time series of exchange rates, share prices and economic growth are found to be stationary at integrated of order one, I(1). The results of co-integration test showed that there is an effect of the stock prices and exchange rates on Indonesia's economic growth. Furthermore, the amount of impact stock prices on economic growth is higher than the impact of exchange rates on economic growth.

Heejoon Han and Na Kyeong Lee (2016) attempted to explore the quantile reliance and directional certainty between the foreign exchange market and the equity market in Korea on the daily data for the period from January 1997 to October 2014 using cross-quantilogram proposed by Han et al. (2016). The study observed an intriguing asymmetric bi-directional spill over effect, showing the quantile based interdependence, between both the markets. The results of the study favours both traditional approach and portfolio approach, emphasizing the use of detailed quantile dependence for various reasons such as risk management, modelling univariate or multivariate volatility models, estimating value at risk and asset allocation.

Fernando Fernandez-Rodriguez and Simon Sosvilla-Rivero (2016) attempted to contemplate on the volatility linkage between the equity and foreign exchange markets of seven major world countries namely, US Dollar, Euro, Australian Dollar, Swiss franc, Canadian Dollar, British Pound and Japanese Yen, using Diebold and Yilmaz's approach of connectedness (2014) on the daily data for the time period July 1988 to January 2015. The study found that

- The static and dynamic analysis showed a system-wide value of 48.75% for the connectedness between both the markets of seven major economies for the entire study period.
- The dynamic nature of total net connectedness spotlighted the large variation over time and assisted the literature proving the spillovers.

- Analyzing the net pair wise directional spillovers, the results showed that the stock markets acted a significant role in the upheaval of volatility.

Khalil Jebran and Amjad Iqbal (2016) explored the volatility spillover effects between the stock markets of six Asian countries namely, Pakistan, India, Sri Lanka, China, Japan and Hong Kong on the daily data for the period from January 1999 to January 2014 employing GARCH model. The study revealed a bidirectional return spillover effect between China and Japan only. There was only unidirectional effect among other markets. The study showed that no selected stock markets have volatility spillover to stock markets in Pakistan. The study suggested the investors to use the results to make effective portfolio decisions to demote the risk and foster the returns.

Tran Quang Huy (2016) attempted to analyze the linkage between stock prices of Vietnam and exchange rates (USD/VND) in the long run, on the daily data for the time period January 2005 to December 2015, focusing financial crisis (2007-2008) by applying Johansen's multivariate co-integration test. The study also explored the momentum of adjustment in the causal relationship through variance decomposition. The study found that

- There was a unidirectional causality between exchange rates and stock prices.
- During the pre-crisis period, the study favoured the theory of portfolio approach and the traditional approach was supported during the post crisis period.

Fauziah, Moeljadi, Kusuma, Ratnawati (2015) examined the dynamic relationship between stock prices and exchange rates in Asia. The objects of this research are Singapore, Taiwan, Indonesia, Malaysia, China, Japan, Hong Kong, South Korea, Thailand and India from January 2009 to December 2013. The result revealed that there is a cointegration relationship (long- term balance) between the exchange rate and stock price in Asia. The second finding is that there is a causal relationship in both directions between the exchange rate and stock prices in Asia, both short term and long term. This indicates that the volatility that occurred in the exchange rate will cause volatility in stock prices and vice versa. The author suggested that if the

exchange rate of the local currency strengthened, the investor's interest to invest in Asian stock markets will be rising and the Asian stock indexes will be increasing.

Kalim Ullah Bhat and Syed Zulfiqar Ali Shah(2015) studied the relationship between exchange rate movements and stock market volatility in Pakistan. The study covers a period of about 15 years i.e., 1997-2013. Co-integration test shows that both variables are co-integrated to each other. Heterosekadescity ARCH test shows autocorrelation in the data series and volatility has been extracted by using ARCH, GARCH, TGARCH and EGARCH. Granger causality test also revealed bidirectional causal relationship between exchange rate and stock price. Thus, the paper concluded that there is free flow of information between these two markets i.e., investors can use information of the one market to predict the other market.

Apere and Karimo Tamarauntari(2015) studied the impact of exchange rate fluctuation on share price volatility in Nigeria by applying granger causality test and GARCH (1,1) model on monthly dataset from 1986 to 2013. The study found a negative impact of exchange rate fluctuation on share price volatility. Also, unidirectional causality exists from share prices to exchange rate.

Nurul Mozumder. *et al.* (2015) tried to scrutinize the association between the flux of equity and currency market three developed economies namely, Ireland, the Netherlands and Spain and emerging economies specifically, Brazil, South Africa and Turkey, before and after the contemporary financial crisis on the weekly data for the sample period January 2001 to December 2012, using E-GARCH model. The study found a uni-directional effect between exchange rate to equity prices in the developed economies and opposite direction with respect to the emerging economies except Brazil, which showed a bi-directional effect. The study observed an asymmetric volatility spillover effect between the exchange rate and equity prices in both developed and emerging economies at the moment of financial crisis. The study also implicated that the lagged information from one market can be employed to foresee variation in the other market.

Hung Xuan Do. *et al.* (2015) intended to investigate the relationship between the stock and currency markets in 18 countries across the world for the time period of January

2002 to May 2009 using Vector Autoregressive framework. The study found a positive bi-directional realized volatility spillover effect irrespective of properties and periods and also a negative bi-directional realized skewness spillover effect in the emerging countries. There was no trace of kurtosis spill-over effects in the selected countries.

Mongi Arfaoui and Aymen Ben Rejeb (2015) examined the linkage of return dynamics and conditional volatility between stock and currency markets in MENA(Middle East and North Africa) countries on the monthly data for the period February 1999 to June 2014 using three competing VAR-GARCH models namely, VAR-CCC-GARCH of Bollerslev, VAR-DCC-GARCH of Engle and VAR-BEKK-GARCH of Engle and Kroner. The study proved the existence of bidirectional association between stock and foreign exchange markets and also abetted both the stock oriented approach of Branson (1977) and flow oriented approach of Dornbusch and Fisher (1980) in all the three competing models.

Mohammad Nayeem Abdullah. *et al.* (2015) explored the short and long run causality association between stock prices and exchange rates among the four South Asian economies namely, Pakistan, India, Bangladesh and Sri Lanka employing co-integration test, Vector error correction modelling approach and Standard Granger causality test on the monthly data for the sample period January 2008 to December 2012. The study revealed that there was no short run causal relationship between exchange rates and stock prices in four economies and showed the existence of long run association between exchange rate and stock prices only for Bangladesh and Sri Lanka. The results did not support the portfolio balance model of exchange rate determination and other traditional models.

Seri Suriani (2015) examined the relationship between the impact of stock market and exchange market in Pakistan during the study period from January 2004 to December 2009. Dickey Fuller test was applied to find out the interaction and granger causality test was applied to determine whether both the variables are independent or affect each other. The results proved that there is no relationship between stock prices and exchange rates because demand and supply determine the price so exchange rates may not be able to impact the price strongly.

Munazza Jabeen and Andleeb Ismail(2015) examined the exchange rate volatility and market efficiency in Pakistan. The monthly data on Pak Rupee exchange rates in terms of major currencies(USD, British pound, Canadian dollar and Japanese Yen) were taken from April 1982 to June 2012. The GARCH model shows that PKR/INR shows high persistence and volatility clustering. It is found that there is no evidence of asymmetry and risk premium in PKR/INR except PKR/USD exchange rate.

Waseem Aslam(2014) investigated the relationship between stock market volatility and exchange rate in Pakistan. The study was conducted for the period of six years (2005-2012) excluding 2013 due to general election of Pakistan, which held in May 2013 after which stock market took a boom. The result revealed a negative correlation between KSE 100 and PKR-USD. After affirming correlation, the author tested for Granger Causality test which proved bidirectional causal relationship between both the variables.

Athanasios Tsagkanos and Costas Siriopoulos(2013) examined the long run and short run relationship between stock prices and exchange rates in EU and USA during the financial crisis (Jan 2, 2008 – April 30, 2012). This is performed between Euro-Dollar and FTSE Eurotop 300 and euro-dollar and Dow jones index. The results revealed that exchange rates drive stock returns in short run both for EU and USA but it is not stable in long run.

Courage Mlambo, Andrew Maredza and Kin Sibanda(2013) assessed the effects of exchange rate volatility in the stock market in South Africa. The GARCH (Generalised Autoregressive Conditional Heteroskedascity) model was applied in examining the relationship between stock market performance and exchange rate volatility. The study covered monthly data from January 2000 – December 2010. A weak positive relationship between currency volatility and the stock market was confirmed. The study suggested that JSE can be marketed as a safe market for foreign investors. However, bankers, investors and portfolio managers still need to be vigilant with regard to the spillovers from the stock market to foreign exchange.

Abdul Rasheed Zubair (2013) investigated causal relationship between stock market index and exchange rate in Nigeria. This paper used Granger-causality to estimate the causal relationship and Johansen's co-integration to test for the possibility of co-integration and between monetary indicators (exchange rate and Money supply) and stock market index before and during the global financial crisis for Nigeria during the period 2001–2011. Results revealed uni-directional causality running between money supply and All share Index (ASI) before the crisis, while during the period of the crisis there is absence of causality between the variables. This suggested that ASI show responsiveness to M2. Hence, absence of the relationship between ASI and exchange rate indicates that the market is inefficient and perhaps not guided or derived by the fundamentals.

Adarmola Anthony and Ado Ekiti (2012) examined the long-run and short-run effects of exchange rate fluctuations on stock market development in Nigeria over 1985 – 2009 using the Johansen co-integration tests. Empirical result revealed that a significant positive stock market performance to exchange rate in the short-run and in the long run a significant negative stock market performance to exchange rate were found.

Cristiana Tudor (2012) attempted to relatively explore the area of Granger causality between stock prices and exchange rates transformation for 13 developed and upgrading economies on the monthly data during the phase 1997-2012. The study found a bi-directional causality between the equity market and the exchange rate in Korean financial market and further the exchange rate has a great impact on the stock market in the forthcoming period in Brazil and Russia whereas in case of United Kingdom, the stock market has been influencing the exchange rate.

Qazi Zarrar Zia and Zahid Rahman(2011) studied causality between stock market foreign exchange market in Pakistan. The sample period for this study is Jan 1995 – Jan 2010. The result indicated that there is no long run relationship between the two variables of the study. These results mean that the KSE 100 Index and Exchange rate (Pak Rupee / US Dollar) does not move together in long run in Pakistan.

Gopalan Kutty (2010) studied the relationship between exchange rate and stock price in Mexico. The data include weekly closing prices of Bolsa (Mexico's equity index) and Peso/US Dollar from January 1989 to December 2006. The granger causality test revealed that stock price lead exchange rates in the short run and there is no long run relationship between these two financial variables. One of the practical implication of this study is that policy makers of the Mexican economy should be cautious in implementing or taking stock market regulation/ or policies since it has short term implication exchange rates.

Hua Zhao(2010) investigated the dynamic relationship between exchange rate (RMB) and stock market by using VAR and GARCH models employing monthly data from January 1991 to June 2009. The results indicate no stable long-term equilibrium relationship between RMB real effective exchange rate and stock price. Hence, this paper further studied the cross-volatility effects between foreign exchange market and stock market by employing likelihood ratio statistic and concluded that there exist a bi-direction volatility spillovers effects between both the markets, which indicate the past innovations in foreign exchange market have the great effect on future volatility in stock market, and vice versa.

Keray (2009) investigated the long run relationship between monetary variables (Exchange rate and Money supply) and stock prices in Jamaika. The study used Johansen Co-integration Test and VECM. The study found a long run relationship between the Stock prices and monetary variables (Exchange rate and Money supply).

Yaqiong Li and Lihong Huang(2009) examined the relationship between RMB exchange rate and stock returns(Shanghai stock market) in China. The study found that both the markets are integrated and Engle–Granger co integration test is performed to test long relationship and concluded that both the variables do not move in tandem . Also, there is a short-run unidirectional causality relationship running from the exchange rate to the stock returns.

Noel Dilrukshan Richards & John Simpson(2009) studied the Interaction between Exchange Rates and Stock Prices in Australia during 2 January 2003 to 30 June 2006.

The study evidenced a positive co-integrating relationship between these variables and the Granger causality test found short run relationship running from stock prices to the exchange rate during the sample period. The result of this study has given few implications for both market practitioners and policy makers as the author suggests that Australian stock prices and the exchange rate can interact with each other, whereby stock price movements greatly influence exchange rates through capital account transactions.

Tomoe(2007) analyzed the impact of the euro on stock markets for Poland, Hungary and the United Kingdom, and also the co-movement of the stock prices with the euro-zone by employing daily stock price indices. The result shown that in order to improve the emerging stock markets, exchange rates should appreciate for Hungary, but depreciate for Poland. The findings from co-integration relationship between the domestic stock prices to German stock prices and exchange rates suggested that an entry to the EMU(European Monetary Union) may, ceteris paribus, lead to stabilise the stock markets for Poland, Hungary and UK.

Kurihara (2006) studied the relationship between macroeconomic variables and daily stock prices in Japan from March 2001 to September 2005. The variables used in this study are Japanese stock prices, US stock prices, exchange rate (Yen/US dollar), the Japanese interest rate etc. The empirical results show that the domestic interest rate does not influence Japanese stock prices. However, the exchange rates and US stock prices affect Japanese stock prices.

Doong et al (2005) investigated the dynamic relationship that existed between exchange rates and stock for six Asian countries (South Korea, Phillippines, Indonesia, Taiwan and Thailand) over the period 1989-2003. The result of Granger Causality tests shows that bi-directional causality can be detected in Indonesia, Korea, Malaysia and Thailand. Also, the study found negative relation between the stock prices and exchange rate for all countries except Thailand.

Agus and Carl (2004) studied the statistical relationship between stock prices and exchange rate by employing Johansen co-integration test and granger causality in four SEAN countries (Thailand Philippines, Singapore and Indonesia). The study found the

significant relationship between stock prices and exchange rates. The co-integration test indicates that all the exchange rates and stock prices in all four countries are co-integrated and the causality runs from exchange rate to stock prices.

Daniel Stavarek (2004) examined the nature of the causal relationship between exchange rates and stock prices in four new EU-member countries (Hungary, Czech Republic, Slovakia and Poland), four old EU-member countries (France, Germany, Austria, and the UK) and in the United States. Both the short run and long run causalities between these variables are used using monthly data and standard Granger causality test, co-integration test, vector error correction modeling(VECM) were used to investigate whether exchange rates and stock prices are correlated to each other or not. The results revealed much stronger causality in old EU-member countries and the USA than in the new-comes. Both long-run and short-run causal relations were found much stronger in the period 1993-2003 than during 1970-1992. Relationship seems to be predominantly unidirectional with the direction running from stock prices to exchange rates.

Chen et a1 (2004) attempted to investigate the firm value sensitivity to exchange rate fluctuation by focusing mainly on individual firms and also looked at the differing rate of sensitivity between currencies. For the empirical analysis a sample of 161 New Zealand Stock Exchange (NZSE) listed firms and share return indexes were considered for the period from January 1993 - December 2000. The estimation results revealed strong evidence that exchange rate movements affect the value of the listed New Zealand firms. It is also noted that firms negatively related to the movement of the Australian dollar and positively related to the movement of the United States dollar and i.e. firms gain in value when the New Zealand dollar depreciates against the Australian dollar and appreciates against the United States dollar.

Victor Murinde et al, (2004) studied the price interactions between the two important components of European financial markets i.e, the foreign exchange market and the stock market before and after the adoption of Euro by most European Union (EU) economies. The study used daily observations on the nominal exchange rate and stock price index for Czech Republic, Hungary and Poland during the period 1.1.1999 to 31.12.2003 for the

Euro period and 2.1.1995 to 31.12.1998 for the pre-Euro period. The author found that for the pre-Euro period, mutually reinforcing linkage existed between stock prices and exchange rates in the Poland and Czech Republic but no interaction exist for Hungary. During the Euro period, for the three sample economies, stock prices uni-directionally granger cause exchange rates. Finally, higher positive correlation existed among the foreign exchange and stock markets in Czech, Poland and Hungary during the Euro period and pre-Euro period respectively.

Saadet Kasman(2003) analysed the relationship between exchange rates and stock prices in Turkey. The sample data consists of daily closing prices of four aggregate indices: National 100, financial sector index, production sector index and service sector index with exchange rate(Turkish Lira/USD). The co-intergration result indicated a long –run stable relationship between stock indices and exchange rate. The causality relationship exist bi-directional between national 100 and Turkish Lira/USD, production sector index and Turkish Lira/USD, service sector index and Turkish Lira/USD.

Hatemi, J.A. and Irandoust, M.(2002) examined a Granger non-casuality testing procedure developed by Toda and Yamamotto (1995) to contribute to the debate on stock prices and exchange rates in Sweden. The study examined the possible casual relation between these variables using Vector Auto Regression (VAR) model. The study found unidirectional relation between two variables i.e., stock prices granger caused movements in the exchange rates. The results also found that an increase in Swedish stock prices is also associated with an appreciation of the Swedish Krona.

Baharumshah et al (2002) examined an augmented monetary model that considers the effect of stock prices on the bilateral exchange rates. The model used RM/USD and RM/JY exchange rate. The quarterly data of exchange rates and macroeconomic variables were collected for a period from the first quarter of 1976 to the last quarter of 1996. The results revealed that the equity market is associated in affecting the exchange rate and the author concluded that models of equilibrium exchange rate should be prolonged to include equity markets and bond markets.

Fang and Miller (2002) studied the daily effects of currency depreciation on Korean stock market returns. By using the Granger causality test and unrestrictive bi- variate GARCH model over the period spanning from January 1997- Dec 2000 the study found that,

- there exist a bi- directional causality between Korean Stock market and Korean foreign exchange market.
- currency depreciation has statistically significant effect on stock market returns through three channels. Firstly, the level of exchange rate depreciation negatively affects stock market returns , secondly exchange rate depreciation volatility positively affects stock returns and third, stock market returns volatility responds to exchange rate depreciation volatility.

Yuanchen Chang (2002) examined industry - level currency risk of Taiwan's stock market during the Asian financial crisis. The data employed daily New Taiwan Dollar/ United States Dollar (NTD/USD), industry level stock indexes and trade weighted effective New Taiwan Dollar (NTD) rates for the period 1.1.1996 – 31.10.1998. The result revealed that over 50 percent of industries have statistically significant currency exposure over the whole sample period, when bilateral NTD/USD exchange rates were used as currency risk factors. The study concluded by finding out that exchange rate risk is more for smaller firms than for larger firms.

Bodart V. et al (2001) investigated the impact of foreign exchange markets on the conditional distribution of industry stock returns for asset of European countries by using the bi variate GARCH model over the period Jan 1990 to Nov 1998. The study confirmed that industries from traded sectors are usually more sensitive to exchange rates than industries from non- traded sectors both in mean and volatility. The influence of foreign exchange market on the mean and to a lesser extent on the volatility of industry stock returns is modified when innovations in exchange rate are abnormally large.

Nagayasu (2001) studied the Asian financial crisis in Thailand and Philippines by using high - frequency data of exchange rates and stock indices. Daily data on benchmark exchange rates and stock indices during the period from 11-15-1996 to 12-31-1998 were

obtained from the Bloombery dataset. The result from the threshold method provides a negative relationship between the stock indices and exchange rate i.e. a fall in stock prices is linked with currency depreciation. This paper also identified a contagion effect running from Thailand to Philippines.

Nieh and Lee (2001) explored the dynamic relationship between the stock prices and the exchange rates, for each G-7 countries. The daily closing stock market indices and foreign exchange rates data were collected from Dow Jones Inc, for the sample period from 1.09.1993 – 1.02.1996. The study rejects any long-run significant relation between stock prices and exchange rates for all the countries. But one day's significant short term relationship has been found in few G-7 countries(Germany, Canada and UK). Study revealed the difference in the results among G-7 countries might be because of the influence of many other countries certain factors in addition to the two financial assets.

Bala Ramasamy and Matthew Yeung(2001) studied the hit and run behaviour in the interaction between exchange rates and stock prices of nine countries (Indonesia, Japan, Hong Kong, South Korea, Malasyia, Thailand the Phillipines Singapore, and Thaiwan) affected by the Asian flu. The study considered the quarterly data spanning from 1.1.1997 to 31.12.2000, forming around 1,040 samples for each country. By using Granger Casuality test, the study found that the stock prices Granger caused movements in the exchange rate in the case of all the countries except Hong Kong, where bidirectional-casuality was seen.

Amain and Hook (2000) investigated the relationship between the exchange rate of Malaysian ringgit in tens of United States dollar and stock prices in Kuala Lumpur Stock Exchange (KLES) using the single-index and multi-index models. The study have used 256 weekly closing stock price indices and the Malaysian Ringgitr United States Dollar (RM/US$) exchange rate spanning from September 1993 to July 1998. The study period was classified as a cycle of a strong ringgit (September 1993- January 1997) and a cycle covering a weak ringgit (July 1997 - July 1998). Ordinary least square (OLS) method was used to identify the relationship between stock prices and exchange rate. The study revealed that during strong ringgit period, no significant relationship found between the

Kuala Lumpur Stock Exchange (KLSE) stocks and exchange rate. And for the weak ringgit period a weak relationship exist between the two markets.

Penttinen (2000) examined the devaluation risk related to peso problem in stock returns. The study aims at providing a rational explanation for the longer non-random negative trend in the Finnish stock market during the period 1989- 1992. The study used cross-sectional regression analysis on the individual firm level. The study resulted an anomalous negative trend from June 1989 in the Finnish stock market to the devaluation of the Finnish markka (FIM) in November 1991. It was partially because of the devaluation-risk-related peso problem in individual stocks.

Morely and Pentecost (2000) examined the interaction between exchange rates and stock prices for G-7 countries for the period 1982-1994 by using co-integration method and found that exchange rate and stock price index levels show a common cyclical pattern which is fundamentally short-run in nature rather than a common trend.

Ibrahim.M.H (2000) studied the relationship between exchange rates and stock prices in Malaysia during 1979 -1996. The study used multiple forms of exchange rate – real effective and nominal, monetary variables like forex reserves and money supply were included. The study could not establish any long run relationship between stock prices and any form of exchange rate through a bi-variate model. The multi variate test suggested that

- There is unidirectional causality from stock market to exchange rate.
- Both exchange rate and stock prices is Granger caused by the money supply and reserves.
- There is bi-directional causality between variables only in case of nominal exchange rate. The study also indicated that in the short-run a concerted stance on monetary policy, exchange rates and reserves policy is vital to the stability of the stock market.

Granger et. al (2000) used co-integration, Granger causality test and structural break test on daily data of stock prices and exchange rates for Asian countries, between January 1986 to July 1998 and suggested that

- There exists a little interaction between stock market and currency except Singapore(Jan1986-Nov 1987).
- There is no definitive pattern of interaction between the markets. But, changes in stock price lead to exchange rates changes in case of Hong Kong and Taiwan and vice versa in case of Singapore during the period (December 1987- May 1997)
- In case of Philippines and Hong Kong changes in the stock price lead to exchange rate changes whereas the reverse is found to happen in case of South Korea.
- Seven of the nine nations suggest significant relationship between these two markets.
- Other countries like Malaysia, Taiwan, Singapore and Thailand are characterized by feedback interactions in which change in exchange rate can take lead and vice-versa (1997-1998).

Amare et.al (2000) investigated the long-run association between stock prices and exchange rate for Malaysia, Taiwan, Japan, Singapore, Thailand, Hong Kong, Korea, Indonesia and Philippines. The study used monthly data spanning from January 1980 - June 1998. Long run relationship was found only for Philippines and Singapore. By including other important variables the author found co-integration between Stock prices, interest rates and exchange rate for six out of nine countries.

Kanas A.(2000) studied the interdependence of stock returns and exchange rate changes in six industrialized countries (United States, United Kingdom, France, Japan, Germany, and Canada) . By using non parametric co- integration test and EGARCH specification on daily data on exchange rate and stock return during the period 1986 -1998, the study found that

- In all the countries except Germany, volatility spillover was found from stock returns to exchange rates.
- There is co-integration between stock prices and exchange rate

- Volatility spillovers from stock returns to exchange rate changes are found to be symmetric in nature and volatility spillovers from exchange rate to stock returns are found to be insignificant for all the countries.
- Over the period April 1973 to Sept 1979 the correlation coefficient between the EGARCH filtered stock returns and exchange rate changes is negative and significant for all countries, indicating there is significant contemporaneous relationship between stock returns and exchange rate changes.

Katephylaktis and Fahilia ravazzolo(2000) studied the long- run and short run dynamics between stock prices and exchange rates on six Pacific Basin countries such as Malaysia Singapore, Hongkong, Thailand, Phillipines and Indonesia over the period 1980 to 1998 by using co-intergration and multivariate Granger casuality tests. The study concluded that

- There is no long-run relationship between the real exchange rate and local stock market in each of the Pacific Basin countries during the decade of the 1980's to 1990's except Hong Kong; for all the countries the real exchange rate and the US stock prices are positively related to the domestic stock prices for the period of the 1990's.
- Foreign exchange restrictions have not found to be important determinant of the link between the domestic stock and foreign exchange stock markets on the one hand and between the world capital and domestic capital markets on the other.

Mohammed .N (2000) examined the long- run and short run association between stock-prices and exchange rates for four South Asian countries (Pakistan, Sri Lanka and Bangladesh) for the period 1994 to 2000 applying Co- integration and error correction model and Standard Granger Causality on monthly data. The study revealed that there is no long run equilibrium relationship between stock prices and exchange rates for Pakistan and Sri Lanka. Granger causality test confirmed that there seem to be no short run relationship either.

Izan H.Y. and Ong, L.L.(1999) examined the association between stock prices and exchange rate by employing Nonlinear Least Square method. The study found that the US share price returns fully reflect information conveyed by movements for both French franc and Japnese Yen after four weeks. This result suggests a very weak relationship between the exchange rates and US equity market. Hence, the study concluded that depreciation in a country's currency would cause the share market returns to increase, while an appreciation would have an opposite effect.

Johnson and soenen(1998) investigated the stock return of 11 Pacific Basin stock markets to exchange rate changes with respect to the Japnese Yen and US dollar during the period January 1985 to June 1995. The study resulted a strong positive relationship with the Japnese Yen while weak and mixed results are reported with the US dollar.

Mookcjee and Yu (1997) studied the presence of informational inefficiencies in the Singapore stock market using a subset of macroeconomic variables, including nominal exchange rates in the context of a small open economy. The study used monthly data from October 1984 to April 1993. The result revealed that the exchange rates do not exhibit a long run equilibrium relationship with stock prices. Tests of causality and forecasting equations yield different results. While the causality test approach has revealed market efficiency with respect to exchange rates, the forecasting equation approach has demonstrated market inefficiency. Hence, the analysis concluded that the results based on only one or the other approach should be viewed with caution.

Chamberlain et a1 (1997) examined the foreign exchange exposure of a sample of United States (US) and Japanese banking firms. In constructing the United States (US) sample, thirty bank holding companies were collected from the Centre for Research in Security Prices (CRSP) over the period 1986 - 1992. For Japanese bank samples, 110 Japanese bank holding companies were collected from World scope data. The study found that the stock returns of nearly one-third of thirty large United States (US) bank holding companies appear to be more sensitive over exchange rate changes. Whereas few Japanese bank return, appear to be sensitive over exchange rate changes.

Qiao, YU (1997) found bi-directional causal relationship between stock prices and exchange rates for Tokyo market. While in Hong Kong market exchange rates changes caused changes in stock prices, no such interaction was seen in Singapore market as evidenced by Granger causality test on daily data covering the period 1983-1994. While using the VAR (Vector Auto Regression Model) a long run stable relationship was evidenced in the three Asian markets.

Ajayi A and Mougoue (1996) studied the inter-temporal relationship between stock indices and exchange rates for a sample of eight developed countries. By employing causality test and co integration on daily closing stock market indices for the period 1984-1991 it was found that

- an increase in aggregate domestic stock price has a negative short run effect on currency values,
- sustained increase in domestic stock prices will induce domestic currency appreciation in the long run.
- Currency depreciation has negative short run and long run effects on stock markets.

Libly Rittenberg(1993) examined the relationship between stock price and exchange rate in Turkey by employing Granger casuality test over the period 1985-1992. Since casuality tests are sensitive to lag selection, the author used three different specific tests for optimal selection i.e., Hsiao method, an arbitrary method and the SMART or subset model auto regression method. In all cases, the study found that the casuality runs from price level changes to exchange rate changes but there is no feedback causality from exchange rate to price level changes.

Smith C.E. (1992) attempted to derive an estimable exchange rate equation by considering the portfolio balance model. The model considered values of stocks of bonds, equity and money as important determinants of exchange rates, which were then applied to the German Mark U.S. dollar and Japanese yen-U.S. dollar exchange rates by using a general model of optimal choice over risky assets over the period January 1974 to March 1988. The study found that stock of money and bond has little impact on exchange rates but equity value has a significant influence on exchange rates. These results concluded

that not only equities are a significant additional factor to be added in the portfolio balance models, but also suggest that the impact of equities is more important than the impact of government money and bonds.

Oskooe, B.M. and Sohrabian, A. (1992) tried to test causal relationship between effective exchange rate and stock price by employing monthly observations over the period July 1973 - December 1988 for a total of 186 observations from the U.S. economy. The study found a bi-directional causality between the effective exchange rate of the dollar and stock price in the short run and for long run the co-integration analysis found no relationship between two variables.

Roll(1992) investigated the pervasive forces causing variations in stock return in a country's index portfolio return, used daily data on 24 country indices from April 1988 to March199. The study found that both real and nominal exchange rate behaviour causes variation in common currency denominated index returns. 23% of the volatility in stock return was explained by exchange rate factors.

Jorion (1990) investigated the exposure of U.S. multinationals to foreign currency risk during the period 1971 to 1987, by using time series regression on the rate of return in the U.S. multinational firm's common stocks and the rate of change in a trade weighted value of the U.S. dollar. The study found significant cross sectional differences in the relationship between the value of U.S. multinationals and the exchange rate. The co-movement between dollar and stock returns was significantly related to the foreign operations of U.S. multinationals.

Soenen and Hennigan, (1988) documented a strong negative correlation between US Stock indices and a fifteen country weighted exchange rate of the dollar. The study explained that the nature of the change in stock prices would depend on the multinational characteristics of the firm as a change in the exchange rates will impact a firm's foreign operation and overall profits, which in turn, impact its stock prices. Conversely, decrease in the stock market will encourage investors to seek better returns elsewhere. This affects the demand for money causing depreciation of the currency, thus suggesting a two way relationship between the two variables.

2.2 STUDIES RELATED TO INDIA

Piyali Roy Chowdhury & Anuradha(2018) studied the impact of exchange rate fluctuation on stock market volatility in India. The primary objective of the study is to know the relationship between USD/INR and SENSEX during the period 2010-2016 by employing correlation and regression analysis. The study found that there exist a positive correlation between both the variables in long run and the R^2 value is found to be 62%.The study suggest investors to invest in stock market in long run to get higher profit and to avoid during short run because of the currency value.

Ahmed Mohamed Dahir et al(2018) examined the dynamic linkage between exchange rates and stock returns in Brazil, Russia, India, China, and South Africa (BRICS) during 2016-2016. The results revealed a positive relationship between exchange rate and stock returns for Brazil and Russia in long run. However, India has negative relation and stock market lead exchange rates in 64-128 day scale during 2008, 2010-12 and 2012-15. South Africa has bidirectional causality and China did not show any relationship. The study conclude that crises is the important factor for fluctuations in stock market and foreign exchange market and regulators should take necessary steps to develop a sound policy measures to prevent from any financial risk.

Yanhua Chen et al (2018) studied the dynamic integration and causality between each pair of US, UK, and Eurozone stock markets from January 1980 to December 2015. S&P 500, FTSE 100 and EURO STOXX 50 indices with corresponding exchange rates are the samples used in the study. The results revealed that exchange rate fluctuations influence the dynamic causality and integration between all pairs of stock indices. Also, the study found that degree of dynamic cointegration and correlation between pairs of stock markets increases during high volatility and uncertainty, especially under the influence of financial, economic and political shocks.

Pradip Kumar Mitra (2017) examined the relationship of volatility between Indian stock market returns and the return from the four currencies pairs actively traded in India (USD/INR, EURO/INR, GBP/INR and JPY/INR). The author employed Garch and Co-integration methods to test the volatility spillover and long term relationship between these two markets from the period of 2008 to 2016 using log normal return. The study

indicate that there was a bi-directional volatility spillover exists between the Indian Stock Market and the Foreign Exchange Market return and the markets move in tandem with each other. The author suggested that the findings will be helpful for international investors for hedging purpose and their portfolio diversification.

Gagan Deep Sharma and Namish Mishra (2016) studied the return linkages and volatility spillover effect between Stock Market and Currency Market in India. Daily closing level of benchmark indices `(CNX Nifty and CNX 500) with currency market (rupee against euro, pound and USD) from April 2003- December 2013 were used for the study. Tools such as unit root test, Johansen's co-integration test, ARCH family models, vector error correction model and diagonal Vector Error Correction Heteroskedastic model. The study revealed a bidirectional volatility spillover between the Indian stock market and foreign exchange market. It is found that changes in the stock market influence the exchange rate and vice versa.

Rabia Najaf and Khakan Najaf (2017) tried to study the influence of exchange rate on the Indian stock exchange for the period from 1998 to 2008 using ADF test, normality test and Jarqu e-Bera statistics. The study found that there is a negative relationship between stock market and exchange rate and also suggested that necessary modification in policies should be made to control exchange rate in order to create more investment opportunities.

Sriram (2017) tried to investigate the existence of causal relationship between commodities, exchange rate and stock market in India, by employing Correlation, Regression model and Granger Causality test on daily data for the sample period 2005 to 2014. The study found that there was a causal relationship between forex market and stock market and, forex market and commodities market respectively. It was also found that the interrelationship between exchange market and commodities market is comparatively high.

Prof. B.R.Megha Raj and Umashankar(2015) examined the relationship between exchange rate and information technology stocks listed in Bombay stock exchange(BSE). The study used monthly average closing price of sample stock (Infosys and Wipro) and

exchange rate (USD) for the period 2004-2014. The study revealed that weaken rupee increases the price of stocks. But when the rupee is stronger there is no significant negative impact. This may be because of hedging strategies adapted by IT companies.

Dr. Rajamohan and C.Vijayakumar(2015) studied a conceptual paper on the performance of currency trading in National Stock Exchange (NSE). Currency market is one of the most price transparencies, liquid, hectic and volatile financial market in the world. Author found that after 2012-13 the currency market performance was moving towards the negative trend and investor's contribution is very low because of the external factors such as low capital inflow, devaluation pressure, and high current account deficit.

Sahadudheen(2015) investigated an exponential GARCH approach to the effect of impulsiveness of Euro exchange rate on Indian stock market. The study considered rupee-euro exchange rate, Sensex and CNX nifty covering the daily data from 3-April-2007 to 30-March-2012. The study found an asymmetric behavior between the rupee-inr and nifty. This implies that shocks to euro rupee exchange rate have an asymmetric effect on stock price, which means positive and negative shocks have different effect on stock prices in terms of magnitude.

Priyanka Shiraly and Manoel Pacheco (2015) investigated the relationship between the stock prices(CNX Nifty) and exchange rate (USD/INR) on the daily data for the time period of September 1998 to April 2015 using econometric techniques. The study revealed that there was no co-integrating relationship between USD/INR and NIFTY. Existence of short-run bi-directional causal relationship favouring traditional and portfolio balance approach was found and also Impulse Response analysis resulted that the stock market has an influence on the exchange rate and vice versa.

Gautam Kamble and Parmeshwar Honrao (2014) studied the time series analysis of exchange rate volatility of Indian rupee/US Dollar. The author used GARCH(1,1) model to investigate the nature of exchange rate volatility. Study revealed that exchange rate volatility has been significantly negative in the short run rather than higher exchange rate fluctuation.

V. K. Somasundaram and T. Muthukumaran (2014) estimated causality relationship that exists between stock returns and exchange rate. The impact of exchange rate on the returns from stock in India is examined, by using periodical data from 1997- 2014. The study revealed that there exists some relationship between these two markets. However, from the short run results one cannot confirm that the exchange rate does not influence return on shares and vice versa. This study asserts that the stock returns neither affects exchange rates nor exchange rate affects the stock returns. Thus, the study empirically found that the former does not induce the latter and in turn stock returns have no influence over exchange rate.

N.S.Nataraja *et al.,(*2014) investigated the causal relationship between foreign exchange rates and Bank stock prices in India from January 2010 to December. The study indicated that both Exchange Rates and Bank Nifty returns are not normally distributed and are stationary at the level form itself. The negative correlation found between Bank Nifty returns and Exchange Rates. **Vandana Kotai(2013)** assessed the currency volatility in Foreign exchange market. Variables used in this study are INR/USD, JPY/USD, EURO/USD, GBP/USD, and CNY/USD. The result indicates that INR/USD and JPY/USD is more volatile & sensible due to external & internal factors in Indian currency market.

Mayuresh S. Gokhale and Ramana Raju J.V(2013) studied the causal relationship between exchange rate and Foreign exchange reserve in the Indian context. The study found a short term association between exchange rate and foreign exchange reserves and no long run association. Author concluded that the accumulation of forex reserves are only in anticipation of overcoming any global financial crisis and maintaining credit rating which in turn could repose faith in the investors and attract large investment in the form of foreign direct investment an portfolio investments.

Muntazir Hussain and Usman Bashir(2013) investigated the dynamic linkages between stock returns volatility and exchange rate volatility of China, Pakistan and India for the period of 2007 to 2012 using daily data. The results implied that there is little evidence for the co-integration relationship between stock market volatility and exchange

rate for all the countries of the sample. Furthermore, the granger causality test confirmed that there is causal relationship between stock returns and exchange rate volatility for Pakistan and null hypothesis is accepted for China and India.

Dr.G. Shanmugasundaram and K. Samsudheen(2012) studied the behaviour of Indian foreign exchange rate and its volatility characteristics by employing daily observation of Indian Rupee against US Dollar during the period of 40 yrs i.e., pre implementation period from April 1973 to February 1993 and post implementation period from March 1993 to April 2012 . The study found that the volatility of Indian foreign exchange rate is highly persistent in all three period. The asymmetric models such as EGARCH and TGARCH evidenced that there is existence of asymmetric or leverage effect in all three sample periods and that is more in post LERMS period.

Neeti Khullar and Upasna Joshi Sethi (2011) measured the volatility of foreign exchange market in India. The data set consists of daily observation on spot exchange rates of the US dollar(USD), Euro(EURO) and Japanese Yen(YEN) versus Indian rupee(INR) for the period of 13 years, i.e., 1995-1996 to 2007-2008. The study found that the exchange rate of EURO is much more volatile than the YEN and US Dollar in the Indian foreign exchange market. Similarly the average returns for all three currencies found to be 0, which reinforces the theory in longer period the average return is equal to 0. The results conclude that YEN-USD is very strongly correlated compared to other currencies.

Dr. Gaurav Agrawal, Aniruddh Kumar Srivastav and Ankita Srivastava(2010) analysed the relationship between Nifty returns and Indian rupee – US Dollar exchange rates. Study revealed that Nifty returns and exchange rate found to be stationary at the level form itself. Correlation between both the variables was found to be positive. Also the author found causal relationship exist between the two variables i.e., an increase in the returns of Nifty caused a decline in the exchange rate but the inverse was not found to be true.

Rahman and Uddin (2009) studied the dynamic relationship between stock prices and exchange rate in South Asian countries(India, Bangladesh and Pakistan). The data set consist of monthly nominal exchange rates of US dollar in terms of Indian Rupee, Bangladeshi Taka and Pakistani Rupee and monthly values of Dhaka Stock Exchange General Index, Karachi Stock Exchange Index, Bombay Stock Exchange Index and All Share Price Index during the period January 2003 to June 2008 to conduct the study. The study found no way causal relationship between stock prices and exchange rates in the countries.

D.K.Malhotra *et al.*, (2007) examined the volatility spillover between stock and foreign exchange market in India. The variables used in this study are Sensex, BSE 100, NIFTY, S&P CNX 500, and INR/USD. The study resulted a bi-directional volatility spillover between both the foreign exchange market and the stock market. The author suggested that both these markets have free flow of information and are also integrated with each other. Accordingly, financial managers can obtain more insights in the management of their international portfolio affected by these two markets. This should be particularly important to both the investors i.e., domestic and international for hedging and diversifying their portfolio.

Brajesh Kumar(2007) determined the relationship between Indian stock market; Gold prices and exchange rate(USD/INR) during the pre and post crisis period i.e., January 2005 to December 2007 and January 2009 to July 2011. The results of the study revealed that positive correlation exist between USD/INR and S&P CNX NIFTY. The relationship of USD and gold has inverse relationship because the commodity (gold) is used as a hedging tool against inflation in the economy. The study concluded long investment in the stock market can be hedged by a long investment of the equal amount in the currency pair i.e., USD/INR or equivalent long investment in Gold.

Benjamin M.Tabak (2006) investigated the dynamic relationship between stock price and exchange rate in Brazilian economy. By employing linear granger causality tests and impulse response functions, the author found evidence supporting the portfolio approach during the recent period (post devaluation of the domestic currency). However, nonlinear

causality test suggest that there is causality from exchange rate to stock prices, which is in line with the traditional approach.

Nath and Samantha (2003) studied the dynamic relationship between exchange rate and stock price movements in India and employed Granger causality test on daily data during March 1993 - December 2002. The empirical finding resulted that the both markets have no causal relationship. Moreover, the extended analysis of the study did not find any significant causal relationship between stock price movements and exchange rate except for the year 1993, 2001 and 2002 Unidirectional causal influence from stock to foreign exchange market was detected in these years and mild reverse causal influence during 1997 and 2002.

Battacharya et al. (2002) examined the nature of causal relationship between exchange rate, foreign exchange reserves, trade balance and stock market with respect to India from April 1990 to March 2001 by employing co-integration and long-run Granger causality test. The results revealed that there are no causal linkages between stock prices and all three macro-economic variables under consideration. i.e., foreign exchange reserves, exchange rate and value of trade balance.

Muhammad.N and Rasheed. A (2002) examined the short-run and long-run relationship between exchange rates and stock prices for four South Asian countries (Pakistan, Bangladesh, India and Sri Lanka) over the period January 1994 to December 2000. The study found that there is no long-run equilibrium relationship between stock prices and exchange rates for Pakistan and India except Bangladesh. The results for Sri Lanka showed a long-run relationship for lag one and two but for higher lag order the study did not find any co integration between exchange rate and stock price. Granger Causality test indicated no short-run relationship between exchange rates and stock prices either in the case of Pakistan and India. The error correction model indicated bidirectional long-run causality for Sri Lanka; however, there is no short-run causation in either direction for Sri Lanka and Bangladesh.

Yamini Karmarkar and G. Kawadia (2001) tried to investigate the relationship between exchange rate (RS/USD) and Indian stock markets by employing the coefficient determination and regression analysis on weekly closing values of five sectoral indices of the stock market and RS/USD over the period 2000. The study concluded that exchange rate has high correlation with the stock market and the appreciation of the rupee with respect to dollar leads to a depreciation of stock prices and vice-versa.

Apte(2001) studied the relationship between exchange rate fluctuation and stock market volatality of India by employing the EGARCH specification on the daily closing USD/INR exchange rate, BSE Sensex and NIFTY during the period 1991 to- 2000 . The study resulted an appearance of the spillover from the foreign exchange market to the stock market but not the other way round.

Pethe and Karnik (2000) studied the relationship between stock prices and macroeconomic variables such as prime lending rate, USD/INR, narrow and broad money supply, and index of industrial production by employing monthly data during April 1992 to December 1997. The study used Unit Root test, cointergration, Vector Error Correction model (VECM) found that there was no long-run stable relationship between prime lending rate, stock prices, exchanges rate, index of industrial production, broad and narrow money supply.

Studies on the inter relationship between exchange rate and stock price have so far used many tools and techniques from Correlations and Regression to Co-integration tests and Causality. The various studies at different time points in several countries collectively and solely yielded results which are non-conclusive on the nexus-relationship between the two markets. In the light of the foregoing expositions, the present study makes an attempt to empirically establish the impact, if any, of the exchange rate fluctuations on the share prices in the Indian Capital Market by taking into consideration the landmark changes in the foreign exchange policies/market.

2.3 IDENTIFICATION OF RESEARCH GAP

- The Research review clearly indicates that most of the research works have been done on developed economies where very little research works is available on Indian context.
- Few researches have been carried on finding the volatility spillovers between the Indian stock and foreign exchange markets. Hence a comprehensive study about volatility spillover is found to be an essential requirement.
- An analysis of share prices in each industry sector against foreign exchange market has not been studied by any researcher. Indices of sectors give a very explicit, wider & an overall view of the Foreign exchange and Stock market. Hence the study has been taken up.
- Evidence of stock market reaction to some of the factors like interest rate, inflation, and money supply has been reported at length. There is no conclusive evidence available on the response of share prices in relation to the exchange rate fluctuations. By observing research gap, researcher decided to take up a detailed study on the topic of a study on the impact of exchange rate fluctuations on the share indices in the Indian capital market.