

Impact of Foreign Exchange Exposure on Non-Financial Firms in India

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Abstract

Foreign exchange exposure constitutes one of the most common forms of risk that firms in the international arena encounter and, in recent years, the management of this risk has become one of the key factors in overall financial management. The risk helps investors determine appropriate expected returns from investment, firm value is thus affected by the risk a firm is exposed to since it affects the size of future cash flows. The study sought to investigate the impact of foreign exchange exposure on non-financial firms listed in Bombay Stock Exchange of India. Besides, several explanatory variables like international trade, foreign debt, firm size, and stock return have been analysed to determine the effect of these variables on foreign exchange exposure and to comply overall objective of this study. Secondary data has been used to extract quantitative information from annual reports of 10 non-financial firms listed in Bombay Stock Exchange of India for a ten-year period of 2008 to 2017. Descriptive analysis, various diagnostics tests, and OLS regression techniques had been used in this research. The analysis results concluded that foreign debt and stock return have a positive and significant relationship with foreign exchange exposure. While firm size has a negative and significant relationship with foreign exchange exposure. However, the study found a negative and insignificant relationship between international trade and foreign exchange exposure. Therefore, based on the research findings, several recommendations and area of future study have been recommended to improve the current results from future research.

Keywords: Foreign exchange exposure, International trade, foreign debt, firm size, and stock return.

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I. INTRODUCTION

Foreign exchange market was initially started after the collapse of the Bretton Woods System in 1971 which forced several countries to opt floating exchange rate system regimes. The switch in exchange system from fixed to floating made foreign exchange market as the second largest economic system in the world (Muraleedharan,

2014). The sources of foreign exchange system in India can be traced back to 1978, where banks could trade in foreign exchange. During 1991, Indian foreign exchange reserve was as low as \$1.2 billion, which was scarcely sufficient for thirteen days of import. The exchange rate of rupee was determined by the Reserve Bank of India (RBI) until the period of 1992. When the economic policy of liberalization took place in

March 1993, the convergence of dual rates became effective in the market. Subsequently, the exchange rate of Rupee was formed from the demand and supply of Rupee in the global foreign exchange market. The Indian Rupee can be converted into any other currencies for trade purposes at existing market rates after the acceptance of article VIII in Articles of Agreement of IMF in August 1994 (Udeshi, 2004).

When the Indian economy was opened, foreign direct investment boosted in India and Indian companies had the opportunity to explore the foreign market. During 1991, total imports and exports of India were \$18145.2 million and \$24,072.5 million, and it increased to \$262,290.1 million of imports and \$381,006.6 million of exports in the fiscal year of 2015/16. With the tremendous increase in FDI, the risk of foreign exchange became a concern for every company participating in international financial transaction. It forced Indian companies, especially MNCs, to manage foreign exchange exposure (Prasad & Suprabha, 2018).

Over the years, foreign exchange exposure is one of the most important risks faced by any non-financial firms involved in foreign operation (Hagelin & Pramborg, 2006). According to Varga (2015), some non-financial firms were on the edge of bankruptcy during the year of financial crisis due to lack of foreign exchange exposure management. Dash et al. (2014) opined that non-financial firms in India face the problem of exchange rate exposure as the impact on the different firms vary by the different method of foreign exchange activities. As a result, economists, researchers, and analysts debated about finding the best indicator to determine the actual reason for foreign exchange exposure faced by non-financial firms.

According to Marston (2001), the foreign operation is one of the major factors for non-financial firms to face foreign exchange exposure

and proxies like international trade have widely been considered to determine the depth of foreign exchange exposure. International trade has been tested against foreign exchange exposure by various researchers to discover the relationship between them (Jorion, 1990; He & Ng, 1998; Sercu & Uppal, 2003). These Researchers found incomprehensive results for the association among international trade and foreign exchange exposure. Firms dealing with international trade are exposed to the exchange rate risk as the conversion of domestic currency to foreign currency takes place and thereby increasing the exchange rate exposure showing a significant affiliation between them (De Jong et al, 2006; Jorion, 1990; Choi & Prasad, 1995; He & Ng, 1998; Chow E & Chen, 1998; Allayannis & Ofek, 2001). However, according to Chow et al. (1997), Dominguez & Tesar (2001a), and Sercu & Uppal (2003), international trade has an insignificant relationship with foreign exchange exposure as the home currency was facing depreciation against foreign currencies of partners.

Furthermore, the study by Aabo et al. (2011) focused on reasons for non-financial firms using foreign debt even though firms have a high ratio of international trade, especially exports. The research indicated that foreign debt is used as a hedging tool to manage foreign exchange risk. Many researchers tried to find the relationship between foreign debt and foreign exchange exposure where inconclusive results were obtained from their researches (Clarke & Judge, 2008; Galindo et al., 2006; Aabo, 2006). Most researchers found a significant relationship among foreign debt and foreign exchange exposure as the non-financial firm uses more foreign debt to hedge foreign exchange exposure (Booth & Rotenberg, 1990; Clarke & Judge, 2008; Aabo, 2006; Elliot et al., 2003). While these results contradict with the research work of Allayannis & Ofek (2001), De Jong et al. (2006), and Galindo et al. (2003). The authors found that foreign debt

does not make a significant influence on hedging foreign exchange exposure and an insignificant relationship between foreign debt and foreign exchange exposure was concluded from the research. The authors also determined that usage of foreign debt among the non-financial firms depended on firm size.

Moreover, firm size of non-financial firms was considered as one of the primary indicators to identify foreign exchange exposure of non-financial firms by various other researchers as foreign operations of firms varies with size of the firm and authors found inconclusive results when firm size and foreign exchange exposure was tested against each other (Hagelin & Pramborg, 2006; Agarwal & Ramaswami, 1992; Bodnar & Wong, 2000). The research by Parlapano & Alexeev (2012) found that the impact of foreign exchange exposure on firms is greater for large capitalisation firms. Similar results were found by Allayannis & Ofek (2001), Hagelin & Pramborg (2006), Solakoglu (2005), and Dash et al. (2014). While contradicting result was found in the researches of Agarwal & Ramaswami (1992), Jong et al. (2006), and Bodnar & Wong (2000). The authors found out that firm size doesn't contribute to mitigating foreign exchange exposure and therefore, an insignificant relationship was recorded by these researchers. The authors opined that other factors, such as stock return, plays an important role in foreign exchange exposure of non-financial firms.

Additionally, researchers focussed on discovering the relationship between the stock return and foreign exchange exposure to determine the length of relativity between them (Noel & John, 2009; Michael, 2009). Variations in stock return were found to make a huge positive significant impact on foreign exchange exposure (Noel & John, 2009; Yasar et al., 2010; Guneratne, 2011). However, a positive significant affiliation between stock return and foreign exchange exposure was

not found in every research. Some researchers found an insignificant association between stock return and foreign exchange exposure and the authors concluded that by stating exchange rate doesn't contribute to stock return calculations (Gaurav et al., 2010; Tarika et al., 2011; Michael, 2009).

However, there are only very few researches done in India regarding this subject. Most researches on international trade and firm size were done on US and European countries (Jorion, 1990; Chow et al., 1997; Dominguez & Tesar, 2001b; Parlapano & Alexeev, 2012). Researches done in India did not take factors like foreign debt and stock return into consideration and mostly focussed on IT sector of India and effects of foreign exchange exposure on different capitalised firms in IT sector (Dash et al., 2014). Added by the conflicting results founded by previous researchers and lack of studies done on non-financial firms listed in Bombay stock exchange of India shows the necessity to carry out further study on this area by taking India as a targeted country.

II. LITERATURE REVIEW

The foreign exchange market is one of the largest liquid markets with a global connection of different sellers and customers (buyers) of currency (Chen, et al., 2015). According to Clark (1973) and Ethier (1973), the volume of the trade for business will reduce due to the uncertainty or instability of the exchange rate, and it affects the firms' trading revenue. The research work by Hooper & Kohlhausen (1978), Demers (1991), and Baron (1976) support the statement of uncertainty about the exchange rate movements affecting the trade. On the contrary, the theoretical researches proved that there would be a positive effect on the trade from the exchange rate fluctuations. The literature review also supports the positive correlation between trade and exchange rate fluctuations (Eckwert, 1999). Instability in the exchange rate increases the uncertain movements

for the members in the foreign exchange market, which will influence the international trade activities (Cushman, 1986). Moreover, foreign exchange risk was reduced in the European zone; there was a significant reduction in the market risk exposure for European non-financial firms. This resulted in a greater impact for the European firms with foreign businesses compared with the firms which have no international trade or foreign assets outside Europe (Muller & Verschoor, 2006).

Foreign exchange exposure could be explained by the debt in foreign currencies held by the companies. According to De Jong et al. (2006), the multinational corporations holding debt in foreign currencies will have less impact from foreign exchange exposure. When the value of domestic currency depreciates, the export from the country will increase and thereby increasing the sales, which will dominate the increased additional cost of the foreign debt. While in the contracted economy, companies having revenues and expenses in the domestic currency will face problems when servicing the debts in foreign currency. The companies can even have a negative impact from the currency depreciation (Šimáková, 2017). According to Keloharju and Niskanen (2001), 72% of CFO's in Finnish Corporations deal with foreign currency debt as they believe that prediction of the exchange rate exposures is possible in a way. The research suggests that short-term exposures can be predicted to an extent and 53% of long-term exposures can be predicted by using foreign debt as a hedge technique tool and reduces the liabilities or profits from the exchange rate fluctuations. The research work Booth and Rotenberg (1990) posit that using of foreign debt act as a hedging instrument to eliminate the problem of foreign exchange exposure. Foreign debt is a natural hedge revenue technique, and it is explicit compared to forwards or swaps which in practical makes it difficult to analyse the amount of hedging did by the companies. When a

company diversifies its debt in different foreign currencies and an unexpected event occurs, the foreign exchange exposure on the company will be less compared to the sum of individual exposures. The research concluded that companies with higher foreign debt have a negative impact from the foreign exchange exposures showing that the natural hedging technique is occurring in the sample of firms (Booth & Rotenberg, 1990). As per Rossi Jr and Paulo (2008), the Brazilian firms use foreign debt to hedge the currency and reduce the impact of foreign exchange exposure. The research concluded that the negative foreign currency debt to total debt represents the risks from the currency mismatches in the balance sheet showing the negative impact from the foreign exchange exposure. Galindo et al, (2003) found that four of six countries have a negative effect on the financial statement due to the use of foreign debt.

Foreign exchange exposure faced by the firms will differ by the size of the firms or the market share it holds in the market. Bodnar & Ofek (2003) opine about the firm size and its association with foreign exchange exposure. The author found that the smaller firm is more exposed to foreign exchange exposure due to the fluctuations in the exchange rate than the larger firm. The researches by Allayannis & Ofek (2001) and Hagelin & Pramborg (2006) suggests that the larger firms are more prone to use exchange rate hedging techniques to decrease its foreign exchange exposure. These firms enjoy economies of scales while hedging the currencies. Agarwal & Ramaswami (1992) concludes that the larger firm is most likely to be involved in foreign activities and exposing themselves for the foreign exchange exposure, whilst Pantzalis et al. (2001) counters it by concluding the firms operating in different countries will decrease the foreign exchange exposure.

The foreign exchange exposure of an enterprise regarding its stock return can be positive or negative. According to Gaurev et al. (2010), the exchange rate exposure and stock return of an enterprise is a negative relationship. Stock returns are mostly affected by the financial performance, dividends paid, and stock prices of the company. Furthermore, Tarika et al. (2011) argued that the foreign exchange rate had affected the stock return of each portfolio they have worked on and it is a macroeconomic variable to be considered while determining the value of the stock return of an enterprise. A similar result was achieved by Michael (2009) when there is a movement in the foreign exchange rate, and stock return was analysed in the German Market. While Ajayi & Mougoue (1996) found out that the currency depreciation of a country will bring down the value of stock prices due to the expected inflation by the people where the overall effect of foreign exchange rate on stock return could be positive or negative because of its inconclusive result. The volatility of the exchange rate to the firms involving in the foreign business is large

ever since the introduction of the foreign exchange rate, and as per theory, this fluctuation in the foreign exchange rate will lead to the volatility in the stock return in the East Asian Market (Pan, et al., 2007).

III. RESEARCH METHODOLOGY

This research used positivist as an important instrument, which focusses on vital reasons for conducting quantitative research. Positivist research profoundly includes on measurable information of variables and hypothesis developed for testing the theory. The yearly time series data are gathered for all independent variables such as international trade, foreign debt, firm size, and stock return. The data collected is from 2008-2017, period of 10 years. Further, ten non-financial firms, namely, Birla corporation Ltd, Ultratech cement Ltd, Suzuki, Tata motors, Jindal Steel, Tata Steel, Everest org Ltd, Ajanta Pharma Ltd, Indo count, and Indorma are chosen for this study. In this study, E-view is used to analyse the findings.

Table 1.1 Sources of Data

Variables	Units	Explanation	Data
Foreign Exchange Exposure	INR	Difference between total foreign exchange earnings and outgo.	Annual Reports
International Trade	INR	Total exports of the firms	Annual Reports
Foreign Debt	INR	Total Foreign debt held by non-financial firms	Annual Reports
Firm Size	INR	Total assets of non-financial firm	Annual Reports
Stock Return	Ratio	Change in stock price with the dividends	Annual Reports

Pearson correlation analysis will help to understand the strength and route of association between IVs and DV. The correlation coefficient (r) is between +1.0 and -1.0. This analysis will reflect whether there is a Positive, negative, weak,

or strong relationship between the variables. If the correlation coefficient is closer to 1.0, it means there is a strong positive relationship between the variables. The below reflects the interpretation of the r at different levels.

Table 1.2 Correlation Values

Correlation coefficient value (r)	Strength of relationship
$r = 0$	No relationship
$0 < r \leq 0.20 $	Very poor or very weak relationship
$ 0.2 < r \leq 0.40 $	Poor or weak relationship
$ 0.4 < r \leq 0.65 $	Fair or moderate relationship
$ 0.65 < r \leq 0.85 $	Strong or high relationship
$ 0.85 < r < 1.0 $	Very strong or very high relationship
$r = 1 $	Perfect relationship

Furthermore, the bivariate OLS regression test will be used to determine if there is a significant positive, negative, or an insignificant association among the explanatory variables and dependent variable (Higgins, 2005).

Below is the formula for multiple regression.

$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + e$,
whereby,

Table 1.3 Regression

a	Constant / Y-intercept	
Y	DV	Foreign Exchange Exposure
X 1	IV	International Trade
X 2	IV	Foreign Debt
X 3	IV	Firm Size
X 4	IV	Stock Return
e	Error	
b	beta	

In this equation, b_1 is the change in Y for one increment change in X_1 , b_2 is the change in Y for each increment change in X_2 . (Higgins, 2005).

IV. DATA ANALYSIS

The data collected from the annual report needed to be stationery before it is observed through OLS regression analysis. In order to identify whether

the collected data is stationery or not, unit root test has been executed, and the method used here is Augmented Dickey and Fuller (ADF). Stationery data points out that variation, mean, autocorrelation, and other techniques are all constant throughout the time. While non-stationery data says that the result from regression analysis will be spurious. The rule of thumb states that the problem of a unit root in the data exists if the p-value is larger than 5% (at 5% significant level) and thus, not stationary data. Similarly, the data is stationary when the p-value is lesser than 5% at 5% significant level. From the findings summarised in the table, it can be interpreted that all the data is not stationary at 5% significant level where null hypothesis cannot be rejected due to the presence of unit root problem. As the data needed to be stationary for performing multiple regression, data is converted into differenced data at a 5% significance level, which is shown as ADF 1st difference in the table. The data became stationary after performing 1st level differencing, where the p-value is less than 5%.

Table 1.4 Unit Root Test at Level Form

Variables	Level	ADF 1 st Difference
Foreign Exchange Exposure	0.5161	0.0001
International trade	0.7761	0.0001
Foreign Debt	0.8740	0.0001

Firm Size	0.9993	0.0005
Stock Return	0.5865	0.0001

The other diagnostic tests for a better regression results include Autocorrelation test, Heteroscedasticity, normality test and Multicollinearity test.

Table 1.5 Summary of Diagnostic Checking

Tests	Results
Autocorrelation	Reject H ₀ .
Breusch-Godfrey Serial Correlation LM Test	Results passed.
Heteroskedasticity Test	Reject H ₀ .
Breusch-Pagan-Godfrey Test	Results passed.
Normality Test	Reject H ₀ .
Histogram test	Results passed.
Multicollinearity	
Correlation test	Reject H ₀ . Results passed.

The Serial Correlation LM test (0.09212), Breusch-Pagan-Godfrey Test (0.9212), and Normality histogram Test (0.096153) has larger P-value than 5%, and Multicollinearity test shows values are less than 0.8. Hence, do not reject null hypothesis. The model has no autocorrelation problem, no heteroskedasticity problem, no multicollinearity problem, error term was normally distributed and is structural stable.

Regression Analysis:

Regression analysis is defined as a statistical process where the relationship among the variables is determined. Variables include the dependent variable (DV) and explanatory variables. The relationship among the dependent variable and its explanatory variable is identified through regression analysis (Gallo, 2015). Table 1.6 shows the outcomes of OLS regression analysis performed on observed data.

Table 1.6 Regression Results

Dependent Variable: Foreign Exchange Exposure				
Variable	Coefficient	Std. Error	t-statistics	Prob.
Constant	3981.865	112073.2	0.035529	0.9719
Intl. Trade	-0.003275	0.001658	-1.975246	0.0512
Foreign Debt	0.144465	0.043520	3.319503	0.0013
Firm Size	-0.053273	-0.053273	-8.844367	0.0000
Stock Return	93787.07	24215.87	3.872959	0.0002
R-squared	0.907679		F-statistics	57.47789
Std. Error	0.891887		Prob (F-Statistics)	0.000000

According to table 13, independent variables explain 90.77% of final prediction or dependent variable, and the other 9.33% of factors are not considered in this study. The percentage mentioned is based on R-squared identified from the regression analysis, which is 0.907679. High R-squared points out that the chosen independent

variable is good to perform the measurement of the dependent variable. Gujarati & Porter (2009) stated that least benchmark set for R-squared is 0.6. It posits that at least 0.6 or 60% of the dependent variable should be explained by the chosen independent variable. This explains the

correctness in the regression model for this research.

From table 1.6, the coefficient or beta for international trade, foreign debt, firm size, and stock return are -0.0033, 0.1445, -0.0533, and 93787.07 respectively. It can be seen that stock return the highest beta due to its different unit used.

In this research, the regression formula used will be:

$$Y = 3981.865 - 0.0033 X_1 + 0.1445 X_2 - 0.0533 X_3 + 93787.07 X_4 + e, \text{ where,}$$

Y, X₁, X₂, X₃, and X₄ are foreign exchange exposure, international trade, foreign debt, firm size and stock return.

In addition, depending on intercept and coefficient of foreign debt, firm size, and stock return have the probability significance at 5% level as each of the factors has a probability not more than 5%. However, international trade is not statistically significant as the probability value is more than 5%. This could be due to missing data, or some companies didn't have any international trade in some years, making the value collected zero. This could lead to the insignificance of international trade in this research. The research by Burrough (2014), supported the insignificance level of international trade as in his research due to some missing data or in another hand it was zero.

Table 1.7: Summary of OLS regression

Summary of OLS regression analysis test	
Variables	Results show that
International trade	Negative and Insignificant Relationship
Foreign debt	Positive and Significant Relationship

Firm size	Negative and Significant Relationship
Stock return	Positive and Significant Relationship

4.5 International Trade

The coefficient of international trade is -0.0033. It means that when international trade rises by one unit, then foreign exchange risk will reduce by 0.33%, thus, showing a negative relationship between international trade and foreign exchange risk. The standard error is 0.0017 showing that there are fewer error noises in the estimates. This concludes that the standard deviation of international trade rises by one unit, the standard deviation of foreign exchange exposure increases by 0.17%.

The p-value of international trade is 0.0512(5.12%), which is more than the significance level of 5%. This implies that international trade is an insignificant factor, and it won't affect foreign exchange risk. Subsequently, the null hypothesis can be rejected, and the alternative hypothesis can be accepted as there is insignificant and negative relationship among international trade and foreign exchange exposure.

4.6 Foreign debt

The coefficient of foreign debt is 0.1445. It points out that one unit increase in foreign debt will rise the foreign exchange exposure by 14.45%, showing the positive impact of foreign debt on foreign exchange exposure. The standard deviation of foreign debt is 0.0435 which means one unit increase in the standard deviation of foreign debt will increase 4.35% standard deviation of foreign exchange risk.

For foreign debt, the p-value is 0.0013(0.13%), which is not more than the significance level at 5%. This implies that foreign debt has

significance influence on foreign exchange risk. Therefore, the null hypothesis is accepted as there is a significant positive relationship among foreign debt and foreign exchange risk.

4.7 Firm size

The coefficient for firm size is -0.0533, which infers that 1 unit rise in firm size will reduce 5.33% of foreign exchange exposure. The standard deviation of firm size is -0.0533, which means one unit increment in the standard deviation of firm size will reduce 5.33% in the standard deviation of foreign exchange risk.

However, the independent variable firm size has a p-value of 0.0000, which is not more than a significance level of 5%. It can be said that firm size has a significant influence on foreign exchange exposure. Thus, the null hypothesis can be accepted, and the alternative hypothesis should be rejected as firm size has negative significant relationship with foreign exchange exposure.

4.8 Stock Return

The coefficient of the stock return is 93787.07. It suggests that a unit rise in stock return will lead to an increase of Rs 93787.07 foreign exchange exposure faced by firms. The coefficient is very high due to the different measurement scale of variables. Similarly, the standard deviation of stock return is 24215.87, implying that one unit increase in the standard deviation of stock return will increase the standard deviation of foreign exchange exposure by Rs 24215.87.

The p-value of stock return is 0.0002(0.02%), which is less than the significance level of 5%. It shows that stock return has a significant influence on foreign exchange exposure. Therefore, the null hypothesis can be accepted, and the alternative hypothesis has to be rejected. Hence, it can be concluded that the stock return has a positive

significant relationship with foreign exchange risk.

V. DISCUSSION ON FINDINGS

The international trade has an insignificant impact on foreign exchange exposure. The findings of this research support the result obtained from other researches carried out by Chow et al. (1997), Dominguez & Tesar (2001a), and Dominguez & Tesar (2001b) where insignificant association among international trade and foreign exchange exposure is discovered. The research of Chow et al. (1997) explained that differences in cross-sectional data in the exposure level for individual firms cannot relate to the percentage changes in foreign sales to total sales in the U.S. The weak relationship between foreign sales and foreign exchange exposure was found in this research (Chow et al., 1997). Furthermore, another research conducted by Dominguez & Tesar (2001b) found a similar result of insignificance and concluded that firms engaging in high foreign operation or international trade are aware of the exchange rate exposure to be faced and thus, most likely firms hedge their position to mitigate the foreign exchange risk. However, the result of this research does not line up with most researches. Jorion (1990) concluded that major determinant of foreign exchange exposure is the level of foreign sales in the US multinational firms. The author found that appreciation in foreign currency should increase profits of local firms involved in foreign sales. This result was in line with the findings of Choi & Prasad (1995) who found that exchange rate risk is purely dependent on functions of foreign operating profits, sales, and assets. The authors further found a strong significant relationship between exchange rate exposure and foreign sales for U.S firms.

Meanwhile, the relationship between foreign debt and foreign exchange exposure are expected to be positive. The discoveries of this research are

dependable with Booth and Rotenbery (1990), Rossi Jr & Paulo (2008), Graham and Harvey (2001), Elliot et al. (2003), Kedia & Mozumdar (2003), Keloharju & Niskanen (2001), Aabo (2006), and Clark and Judge (2008). The result of this research describes that foreign debt will lead to an increase in foreign exchange exposure faced by non-financial firms in India when home currency is facing depreciation against other foreign currencies. Similarly, when a home currency appreciates against foreign currencies, foreign debt will act as a hedge to profit from less payment of obligations. When the value of domestic currency depreciates, the export from the country will increase and thereby increasing the sales, which will dominate the increased additional cost of the foreign debt. However, the findings of this research contradict with the result of Allayannis & Ofek (2001), De Jong et al. (2006), and Galindo et al. (2003). The authors found a negative or insignificant relationship between foreign debt and foreign exchange exposure of non-financial firms. According to De Jong et al. (2006), multinational corporations holding foreign debt does not make a big impact on their foreign exchange exposure. The size of foreign debt matters to use it as a hedge technique tool. Non-financials firms holding huge amount of foreign debt in different currencies won't help firms to reduce their foreign exchange exposure.

According to this research, firm size has a negative and significant relationship with foreign exchange exposure. The findings of this research is consistent with Bodner & Ofek (2003), Pantzalis et al. (2001), Allayannis & Ofek (2001), Hagelin & Pramborg (2006), Shin & Soenen (1999), Froot et al. (1993), Dominguez and Tsar (2001b) and Solakoglu (2005). The authors found that firm size has a significant relationship with foreign exchange exposure, but it has a negative correlation. It means a larger firm is less exposed to foreign exchange exposure compared to a smaller firm. According to Bodner & Ofek (2003),

a smaller firm is exposed more to foreign exchange exposure than larger sized firm. Allayannis & Ofek (2001) and Hagelin & Pramborg (2006) supported the result and opine that larger firms are prone to more foreign exchange exposure prompting them to use more hedging technique and reduce the foreign exchange exposure. However, the results from other researchers found a positive impact of firm size on foreign exchange exposure which means larger firms have more impact from foreign exchange exposure than smaller sized firms (Agarwal & Ramaswami, 1992), (Jong, et al., 2006), (Bodnar & Wong, 2000). The researchers found out that larger firms face more foreign exchange exposure than smaller firms due to their presence of foreign operation on a big scale. Bodnar & Wong (2000) opined that larger firms, often multinationals or large exporters, are exposed to currency risk compared to smaller firms.

The results of this study shows that stock return has a positive and significant relationship with foreign exchange exposure. This study found the consistent result with Noel & John (2009), Yasar et al. (2010), Guneratne (2011), and Perara (2015). The result shows that stock return and foreign exchange exposure has a positive significant relationship. An increase in stock return would affect foreign exchange exposure of non-financial firms in India positively. According to Noel & John (2009), changes in stock return made a positive significant impact on foreign exchange exposure in the Australian market. A small change in stock return would affect foreign exchange exposure hugely. This result was consistent with Yasar et al. (2010). However, this positive significant relationship between stock return and foreign exchange exposure of non-financial firms cannot be noticed everywhere. Authors of different researches found contrary results as well. Stock return is not necessarily affected by foreign exchange exposure. Variations

in the stock exchange is mainly recorded from dividends paid, financial performance, and stock prices of the company. Therefore, stock return affecting foreign exchange exposure is considered unlikely (Gaurav, et al., 2010). While Tarika et al. (2011) opines there is no components in stock return that will distress the foreign exchange risk of non-financial firms.

VI. CONCLUSION

The research has been conducted in India to identify the foreign exchange exposure faced by non-financial firms listed in Bombay Stock Exchange of India. Four variables were considered in this research, namely, international trade, foreign debt, firm size, and stock return. International trade was an insignificant factor in foreign exchange exposure in this study. In other words, international trade does not influence foreign exchange exposure of non-financial firms. While, foreign debt is an influencer of foreign exchange exposure faced non-financial firms in India. This means that non-financial firms listed in Bombay stock exchange of India use foreign debt mostly to hedge the problem of foreign exchange exposure. Furthermore, research found that firm size has the most significant relationship with foreign exchange exposure. It has a negative relationship meaning that increasing in firm size won't make the firms face more foreign exchange exposure as large firms are not unlikely to hedge their exposure than smaller firms. This research concluded that a smaller firm has larger foreign exchange exposure from their foreign operation. Finally, stock return is the indicator that affects foreign exchange exposure faced by non-financial firms listed in Bombay stock exchange of India. Although it has the highest positive beta among all explanatory factor in the regression model, it also has the lowest p-value. Since the results are rather inconclusive, future studies are encouraged with larger sample size and longer period. Further, several non-financial firms chosen should be balanced from different industry to accommodate

the whole population of non-financial firms. Future researchers can only focus on just one industry to unleash better accurate outcomes for just that industry as various industry has various type of features or characteristics, leading to inaccurate results in the study. add more variables to their study and ensure to avoid collecting incomplete data from annual reports of non-financial firms to obtain a strong result. Adding more variables would provide deeper knowledge about the topic which would help the stakeholders to utilise the research in a more proper manner. Finally, , an improvised method to calculate the data collected can be used by future researchers. For instance, international trade can be calculated by the ratio of total international trade and total sales, firm size can be calculated by the ratio of capital employed and total assets, and foreign debt can be calculated by the ratio of foreign debt and total debt. This would provide better results for future researchers.

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