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COMPARATIVE ANALYSIS OF SMES HEDGING AND NOT HEDGING THE EXCHANGE RATE FLUCTUATIONS

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ABSTRACT

Organizational performance is mostly affected by the environment in which it operates. Favorable uncertainties boost the performance of the organization, whereas unfavorable ones will hinder the performance of the organization. Exchange rate fluctuations have been affecting businesses in India that engage in import and export of materials. Uncertainty in the currency rate can lead to around 30% erosion of profit from an organization. Larger companies hedge their exposure in order to manage the risks of currency fluctuations. SMEs also do the same.

SMEs engaged in the business of import and export have to deal with currency risk exposure constantly. They can manage this by entering into derivates contracts – something that larger players frequently do. There are many impacts of exchange rate fluctuations like stagnant growth of industries, loss of market share, impact on profit margin, merchandise trade loss, reduction in capital flows.

In light of the above reasons, the present study is undertaken to compare the performance of SMEs hedging and not hedging exchange rate fluctuations. The research focuses on the effect of exchange rate hedging on the volatility of revenues and profits after tax of SMEs the operations of small and medium enterprises in India that are listed on the NSE Emerge, a portal explicitly catering the SMEs.

KEYWORDS: hedging, exchange rate fluctuations, small enterprises

JEL CLASSIFICATION: C11, L33, H2, H11, D81

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1. INTRODUCTION

The performance of any organization is largely affected by the environment in which it operates. The favorable uncertainties boost the performance of the organization whereas the unfavorable one will hinder the performance of the organization. The world of business is full of risks. The risks are the results of the uncertainties. These uncertainties can be in the forms of changing interest rates, fluctuations in exchange rate, changes in commodity prices, and the credit risk of the customer. The financial management analyses these unfavorable uncertainties or risks. The concept of risk management ensures minimizing or controlling the risks however there is no possibility of complete elimination of risks.

Exchange rate fluctuations have been affecting businesses in India that engage in import and export of materials. Uncertainty in the currency rate can lead to around 30% erosion of profit from an organization. Larger companies hedge their exposure in order to manage the risks of currency fluctuations. The same is being done by SMEs. But the smaller turnover and lack of knowledge and skills acts as a drawback for these companies.

The SMEs that are engaged in the business of import and export have to constantly deal with currency risk exposure. This is managed by entering into derivates contracts and is frequently done by the larger players. The SMEs do not possess the technical background in order to participate in such activities. Taking external help increases the cost of hedging thereby not making the entire process feasible. Banks too do not aid these enterprises in hedging their currency exposure. Therefore, this becomes a grave hurdle in order to be competitive in the international market.

SMEs do not hedge their entire risk, which leads to little effect on the volatility of loss or gain. The companies need to be given the confidence to engage in such activities for the growth of the business in the long run. The research done in this field has been qualitative, wherein industry personnel have been interviewed in order to establish and understand the benefits of hedging and the impact of it on the financial performance of an organization. This is the research gap as no quantitative data has been utilized in order to analyze the effect of foreign currency fluctuations of the performance (Revenue and profit) of SMEs in India.

In the light of reasons like the present study is undertaken to know the performance of SMEs hedging and SMEs not hedging the exchange rate fluctuations. The research focuses on how SMEs are performing during the exchange rate fluctuations. For this purpose of revenues and profits after tax of SMEs the operations of small and medium enterprises in India that are listed on the NSE are considered.

CONCEPTUAL DEFINITIONS

Small and Medium Enterprises

According to the Micro, Small & Medium Enterprises Development (MSMED) Act, 2006, "Small Enterprises are those who have an investment in plant and machinery between Rs 25 Lakhs to Rs 5 crores in the manufacturing enterprises and Up to Rs 10 Lakhs to Rs 2 Crores in the service enterprises. The Medium Enterprises, on the other hand, are those enterprises which have an investment in the plant and machinery between Rs 5 crores and Rs 10 crores in the manufacturing enterprises and between Rs 2 Crores to Rs 5 crores in the services enterprises."

Exchange Rate Fluctuation

The exchange rate between the currencies that is allowed to fluctuate with the market forces of demand and supply.

Exchange Rate Fluctuation Risk

Companies that deal with companies situated in order countries have to deal with the risk of exchange rate fluctuations. These fluctuations can hamper the operations of the organization as it creates an uncertainty in the working of the business.

Impact of Exchange Rate Fluctuations on the SMEs

The exchange rate fluctuations can affect small and medium enterprises in various ways. The micro and macro effects of exchange risk fluctuation are:

MICRO IMPACT

Stagnant Growth of Industries

Exchange rate fluctuations can be volatile thereby leading to uncertainties in the business. This leads to a stagnant growth of companies as the business is unable to allocate resources efficiently in order to safeguard it from the fluctuations of exchange rate risk.

Loss of Market Share

Another result of exchange rate fluctuation is the loss of market share. Companies that export its products or services reduce the volumes in order to reduce the uncertainly due to the volatility in the prices. This thereby leads to loss in sales and loss of market share.

Impact on Profit Margin

Since the loss of gain on currency fluctuations is uncertain, it is difficult to analyze the expenses or costs to be added to the product or service. This leads to an impact on the profit margin marking the cost structure of the product of service unsustainable.

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MACRO IMPACT

Merchandise Trade

Trade refers to a nation's import and export of goods and services. With major exchange rate fluctuation, a sense of uncertainty is created which affects the business negatively thereby reducing the volume of trade. This thereby results in loss of income for the nation.

Economic Growth

Companies that have saturated the domestic market look for foreign market in order to sell their goods and services. This helps in further developing in the economy by providing employment and bringing in foreign currency as reserves. If the fluctuation in the exchange rate reduces the trade occurring, the companies reduce their sales which reduce their growth rate. This in turn reduces the economic growth.

Capital Flows

Exchange rate fluctuations create a sense of risk and uncertainty in a business. The business is unable to operate efficiently and in harmony. This reduces the investor trust in the company and thereby reduces the investment made by foreign players into the country's economy. Along with this, domestic investors to find foreign players to be more lucrative and invest in other nations leading to capital outflows.

In the light of above reasons, the present study is undertaken to compare the performance of SMEs hedging and not hedging the exchange rate. This study will help to understand the impact on hedging and not hedging the exchange rate fluctuations on the performance of SMEs

2. REVIEW OF LITERATURE

(PWC, 2013) The paper analyses the risks and benefits of currency hedging. It also mentions that hedging is not only limited to reduce financial issues. The paper looks into the effect of hedging on the potential drag on the stock prices of the companies. An important aspect of hedging is that the decision is taken only by the top management of any company.

(Energy, 2013) The paper highlights the importance and benefits of hedging. The paper talks about the various theories of hedging and establishes hedging as an "insurance against price risk". The paper then talks about portfolio hedging in which it mentions the importance to using a portfolio of instruments to hedge the risk of currency exposure.

(Simika, 2013) The paper discusses the impact of currency fluctuation on EXIM businesses in Tanzania. Companies were selected that are into import and export. Questionnaires were used to obtain primary data from the managers of these companies while secondary data was collected from the World Bank website. The study suggests that the exchange rate is overvalued by 30%. The exchange rate volatility is high is Tanzania. Between 1995-2011, the volatility averaged 3.9. The paper also analyzed the relationship between exchange rate fluctuations and trade flows. There is a significant correlation established between the elasticity of export supply to real exchange rate changes at -0.83. The paper also suggests that

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exchange rate has significant impact on the economy. The domestic prices, competitiveness of exports and import substitution are all affected by the exchange rate fluctuations.

(Clark, Judge, & Mefteh, 2015) The paper discussed corporate hedging with foreign currency derivatives and the value of the firm. The research includes 176 French companies over a period of 3 years from 2003-2005. The paper focusses on the application of Accounting Standards 32 and 29 that requires the disclosure of the hedging practices utilized in an organization. The paper found out a negative relationship between leverage and hedging which leads to lower tax shields and a loss to the firm. The sample have been taken from various industries namely, petroleum, consumer durables, food and beverages, etc. The test used is MANOVA with various dependent variables used in the process. The study analyzed the relationship between firm value, foreign exchange rate fluctuations and corporate use of derivatives. It is concluded that there is a small sample of industries on which the currency exposure is significant.

The paper discusses the impact of foreign exchange fluctuations of the stock market in Japan. For the research, the Nairobi Securities Exchange Market was selected. The author talks about the unpredictability of the stock market in 2006. The paper tries to find a relationship between this instance and the foreign exchange rate fluctuations. The authors found our that a depreciation in the currency led to a fall in stock prices. There was a negative relationship established between the exchange rate volatility and the stock market returns. The research also concluded that as the Dollar, Euro and lending and deposit rates have declined, the stock market has been promising. Therefore, the study concludes by establishing a relationship between foreign exchange and the stock market returns by establishing a stronger yen to a prosperous Nairobi Securities Market.

(Ouma, 2016) The paper discusses the foreign exchange risk exposure faced by the SMEs in South Africa. The paper states that small and medium enterprises are more vulnerable to exchange rate fluctuations. This paper analyses the risks associated with operating in the industry and the strategies used by the SMEs to manage their forex risk exposure. It also researches upon the viability and effectiveness of the strategies being adopted. For this purpose, 10 individuals were questioned who belong to the same industry. The study was conducted using qualitative approach. The results said that SMEs in South Africa only use the stepping mechanism to hedge their risk. Stepping mechanism refers to hedging of risk before entering into exchange contracts by purchasing forward or spot currencies. The author suggests and advices the companies to use other instruments and techniques to hedge the currency exposure faced by such organizations

(Gerber & Woodtly, 2018) The paper concentrates on the SMEs in Switzerland. The paper has analyses 300 companies that are classified as SMEs and have found out that around two-third of the companies hedge against their currency risks. An important aspect of hedging used by Swiss companies is natural hedge. The expenses are being incurred in the same country it is getting receipts from. Another method of hedging the risk is by purchasing the foreign currency itself. This requires a higher level of investment as compared to other strategies and also hold an opportunity cost along with it. The paper further talks about the achievements of planning how to secure foreign transactions but also mentions hedging as a

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way to profit. The authors state that foreign currency risk should not hamper the core business of organization.

3. RESEARCH METHODOLOGY

3.1. LIST OF SMES SELECTED FOR STUDY

The data collected is limited as only 184 SMEs are listed on the plated of NSE Emerge. The companies selected were into the business of import and export which makes the data availability limited.

The population involved in the process of secondary data collection includes the SMEs that are listed on the portal of NSE Emerge. Data for 60 companies will be selected which will be broken down in two portfolios:

Companies that actively hedge their foreign currency risk

Companies that do not hedge their foreign currency risk

The sampling is done on the basis of the portfolios created. Each portfolio has 30 companies. The 30 companies are divided into two sectors:

1. Manufacturing Sector (15 companies)
2. Non-Manufacturing Sector (15 companies)

TABLE 1: LIST OF COMPANIES NOT HEDGING THEIR EXCHANGE RISK EXPOSURE

Manufacturing Industry		**Non-Manufacturing Industry**	
Sr. No	**Company Name**	**Sr. No**	**Company Name**
1	Airo Lam limited	16	Creative Peripherals and Distribution Limited
2	Five Core Electronics Limited	17	Soni Soya Products Limited
3	Jash Engineering Limited	18	Anisha Impex Ltd
4	Marshall Machines Limited	19	Ambani Organics Limited
5	Saketh Exim Limited	20	Kritika Wires Limited
6	Servotech Power Systems Limited	21	Universal Autofoundry Ltd
7	Shanti Overseas (India) Limited	22	Vadivarhe Speciality Chemicals Limited
8	Ushanti Colour Chem Limited	23	Lagnam Spintex Limited
9	Milton Industries Limited	24	Marine Electricals (India) Limited
10	Sintercom India Limited	25	Sakar Healthcare Limited

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11	Uravi T and Wedge Lamps Limited	26	Rudrabhishek Enterprises Limited
12	Vaishali Pharma Limited	27	Cadsys (India) Limited
13	Shrenik Limited	28	Penta Gold Limited
14	South West Pinnacle Exploration Limited	29	Accuracy Shipping Limited
15	Sirca Paints India Limited	30	Akg Exim Limited

Source: Author compilation

Table 2: List of Companies actively Hedge their Exchange Risk Exposure

Manufacturing Industry		**Non-Manufacturing Industry**	
Sr. No	**Company Name**	**Sr. No**	**Company Name**
1	Ahimsa Industries Limited	16	Softtech Engineers Limited
2	Ahlada Engineers Limited	17	InfoBeans Technologies Limited
3	Avon Moldplast Limited	18	R&B Denims Ltd
4	Emkay Taps and Cutting Tools Limited	19	JAKHARIA FABRIC LIMITED
5	Latteys Industries Limited	20	Jet Knitwears Limited
6	Marvel Decor Limited	21	Macpower CNC Machines Limited
7	Nitiraj Engineers Limited	22	MMP Industries Limited
8	Panache Digilife Limited	23	Sarveshwar Foods Limited
9	Thejo Engineering Limited	24	Euro India Fresh Foods Limited
10	Vera Synthetic Limited	25	Aarvi Encon Limited
11	Worth Peripherals Limited	26	SecUR Credentials Limited
12	Zodiac Energy Limited	27	Dev Information Technology Limited
13	Ice make refrigeration limited	28	Jet Freight Logistics Limited
14	Mohini Health & Hygiene Limited	29	Total Transport Systems Limited
15	Zota Health Care LImited	30	Maheshwari Logistics Limited

Source: Author compilation

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3.2. OBJECTIVES OF THE STUDY

1. To compare the performance of SMEs hedging and not hedging the exchange rate fluctuations.
2. To know the effect of exchange rate hedging on the volatility of revenues and profits after tax of SMEs in India

3.3. DATA COLLECTION METHOD

The study relies upon secondary data sourced from the annual reports of the companies selected. The collection of data has been done through the following sources:

1. **NSE Emerge**: NSE Emerge is a portal catering to the small and medium enterprises in India. SMEs that wants to get listed can do so through this platform. The NSE Emerge was launched in 2012 and currently has 184 listed companies. The names of the companies were collected from this source.
2. **Company Websites - Annual Reports**: The reason for choosing two years data is because the regulation to disclose hedging activities was introduced in 2015. Along with this, most of the company were listed on the NSE Emerge between 2016-2018.

4. DATA ANALYSIS AND INTERPRETATION

The data collected is analyzed with the help of statistical tools and the results of the analysis are interpreted in this section.

Table 3: Grouping of companies based on hedging

		Value Label	N
Hedge	G1 Companies hedge risk	Yes	30
	G2 Companies do not hedge risk	No	30

Source: Author compilation

Companies that hedge have been taken under group 1 whereas the companies that do not hedge their currency risk exposure have been demarked under group 2.

Table 4: Descriptive Statistics for Revenue and Profits After Tax for the year 2016-17

	Hedge	Mean	Std. Deviation	N
Rev	Yes	.00112	.00148	30
	No	.00368	.00378	30
	Total	.00240	.00313	60
PAT	Yes	.04080	.07227	30
	No	.17302	.20011	30
	Total	.10691	.16338	60

Source: Author Compilation

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The data that has been analyzed in the revenue and profit as an absolute percentage of the loss or gain due to foreign currency fluctuations. The test results suggest that the mean ratio of revenue to the gain/loss is lower for companies that hedge their risk as compared to companies that do not hedge their risk in 2016-17. The mean revenue to gain/loss is .0011 for companies that hedge their risk whereas it is .0036 for companies that do not hedge their risk.

The profit as a percentage of fluctuation gain/loss has also been taken. The mean profit to gain/loss for companies that hedge their risk is .0408 while it is .1730 for companies that do not hedge their exposure. This suggests that by hedge, the loss/gain due to fluctuations can be reduced.

Table 5: Impact of Hedging on the Revenue and the Profit in the Year of 2016-17 - Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Hedge	Rev	9.855	1	9.85	11.899	.001	.170
	PAT	.262	1	.262	11.585	.001	.166

Source: Author compilation

a. R Squared = .170 (Adjusted R Squared = .156)

b. R Squared = .166 (Adjusted R Squared = .152)

The MANOVA test applied shows a significant impact of hedging on the revenue and the profit in the year of 2016-17. The p value is .001 for both revenue and profit. This suggests that hedging effects the value of profit or revenue in the companies.

Table 6: Estimated Marginal Mean for the year 2016-17

Dependent Variable	Hedge	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Rev	Yes	.001	.001	7.28	.002
	No	.004	.001	.003	.005
PAT	Yes	.041	.027	-.014	.096
	No	.173	.027	.118	.228

Source: Author compilation

The estimated marginal mean is taken to find out the mean from a regression line. The results state that hedging reduces the volatility in the loss/gain due to currency fluctuations as it can be seen by comparing the estimated marginal means.

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Table 7: Descriptive Statistics for Revenue and Profits After Tax for the year 2017-18

	Hedge	Mean	Std. Deviation	N
Rev	Yes	.00093	.00317	30
	No	.00751	.01949	30
	Total	.00422	.01423	60
PAT	Yes	.00714	.00797	30
	No	.16906	.25798	30
	Total	.08810	.19851	60

Source: Author compilation

The MANOVA states that in 2017-18, the volatility is greater in companies that do not hedge their risk. The mean volatility of companies not engaging in hedging activities is .0075 for revenue and .1690 for profit. While companies that hedge have a mean volatility of .0009 on revenue and .0071 on the profit. The deviations is also greater for companies not hedging.

Table 8: 2017-18 Levene's Test of Equality of Error Variances

		Levene Statistic	df1	df2	Sig.
Rev	Based on Mean	3.862	1	58	.054
	Based on Median	2.152	1	58	.148
	Based on Median and with adjusted df	2.152	1	30.575	.153
	Based on trimmed mean	2.332	1	58	.132
PAT	Based on Mean	20.022	1	58	.000
	Based on Median	7.478	1	58	.008
	Based on Median and with adjusted df	7.478	1	29.034	.011
	Based on trimmed mean	12.672	1	58	.001

Source: Author compilation

Levene's Test is analysed to understand the impact of significance on the variables. The data above shows that the impact of hedging of foreign currency is high on the profits of a company whereas it is lower when the revenue is considered. This can be understood by the difference in the values of revenues and profit. As the turnover is high for companies, the loss/gain from exchange rate fluctuations do not affect most of the company's revenues.

Table 9: Impact of Hedging on the Revenue and the Profit in the Year of 2017-18-17 - Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Hedge	Rev	.001	1	.001	3.329	.073	.054
	PAT	.393	1	.393	11.806	.001	.169

Source: Author compilation

a. R Squared = .054 (Adjusted R Squared = .038)

b. R Squared = .169 (Adjusted R Squared = .155)

The test suggests that the impact of hedging on profits of companies in the year 2017-18 is significant with a p value of .001. Whereas, the impact of hedging on the revenue of the company is insignificant at 5%. The data becomes significant at 10%. This suggests that the effect on profit is greater than the effect on revenue.

Table 10: Estimated Marginal Mean for the year 2017-18 – Hedge

Dependent Variable	Hedge	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Rev	Yes	.001	.003	-.004	.006
	No	.008	.003	.002	.013
PAT	Yes	.007	.033	-.060	.074
	No	.169	.033	.102	.236

Source: Author compilation

The estimated means of the regression line formed suggests that the volatility after hedging is lower than the volatility for companies that do not hedge their risk. The mean volatility for revenue of companies that hedge their risk is .001 and for-profit is .007, which is .008 for revenue and .169 for profit for the companies not into hedging.

5. SUGGESTIONS, RECOMMENDATIONS & CONCLUSIONS

5.1. FINDINGS

1. In 2017-18, the effect of foreign currency fluctuations on the profit of the company is significant. It is found out that hedging can reduce the volatility of loss or gain due to forex fluctuations, which in turn affects the profit of the company. By hedging, the company has a volatility of 0.71% on profit, whereas, without hedging, the effect of profit is 16.9%.
2. In 2016-17, the effect of forex fluctuations on the profit of the companies was significant as well. The mean volatility for companies that did not hedge was 17.3% which the volatility

for companies that did hedge was 4.08%. This suggests that the companies have started hedging effectively which has led to a drop in the volatility from 4.08% to .71%.

3. In 2017-18, the effect of forex fluctuations on the revenue of the companies is no significant. Even though there is an impact of 0.09% for companies that hedge and 0.75% for companies that do not hedge, the data is insignificant.
4. In 2016-17, the effect of forex fluctuations on the revenue had a significant impact with 0.11% impact on the revenue of the companies that hedge and 0.37% on the revenue of companies that do not hedge their risk.
5. The t-test conducted stated that the impact of forex fluctuations is greater in the profit rather than the revenue of a company. This means that the profits of the company would be affected on a greater extent as compared to the revenues of the company in a situation of currency fluctuation.
6. The correlation between the forex fluctuations and revenue of a company was .312 in 2016-17 and reduced to .209. Hence, we can say that there is a positive low correlation between the revenue and fluctuations in foreign currency.
7. The correlation between the forex fluctuations and the profit of the company was .112 in 2016-17 but became negatively correlated to -0.099 in 2017-18. This states that the companies are successfully hedging their risk in order to increase their profits in 2017-18.

5.2. SUGGESTIONS AND RECOMMENDATIONS

1. Guidance to all the SMEs to enhance the performance need to be provided.
2. Standard of Accounting Exchange Rate Fluctuation: The companies show the loss or gain from fluctuations in the income statement. Some companies show it in the cash flow statement under the operating activities while some show it as under financing activities. A set standard should be followed in order to make the interpretation of data more significant and easier.
3. Implementation of Hedging Policy will help the SMEs to reduce the exchange rate fluctuation risk.

6. CONCLUSIONS

The SMEs in India are on a growth trajectory. They cater to various industries and the market includes both domestic and international customers. As and when the domestic market gets saturated, the SMEs will look to export more products and services. This would eventually require the need to hedge one’s risk. Therefore, it can be concluded that hedging of foreign exchange has a significant impact on the performance and growth of small and medium enterprises in India.

The hedging can be conducted by many contracts, however the most preferred tools used are forwards contracts. All the SMEs are not specialized in using the tools effectively as a result they will be able to hedge only a percentage of their entire risk. This leads to extreme volatility as seen in the research.

The research also looked in to the comparison of the performance of the SMEs hedging and not hedging the exchange rate fluctuations. . This suggested that the SMEs not hedging are

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badly affected by the exchange rate fluctuations than the SMEs hedging the exchange rate fluctuations. The change in the fluctuation has leads to a change in revenue and profits of both the SMEs. Since the fluctuations are quantified in loss or gain due to the fluctuations of foreign exchange, the profit is impacted directly. With stability in the foreign exchange, Both the SMEs tend to increase their exports, thereby increasing the sales.

This study concludes that the performance of the SMEs hedging against exchange rate fluctuations is better than the performance of SMEs not hedging the exchange rate fluctuations. As the concept of hedging for SMEs is new, this can be an aspect that will get growing importance going forward.

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