

EFFECT OF EXCHANGE RATE HEDGING ON THE VOLATILITY OF REVENUES AND PROFITS AFTER TAX OF SMES IN INDIA

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Abstract:

Every business has to face risks during its daily operations. These 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 risks and takes appropriate steps in order to reduce and manage these risks. Even though risks cannot be removed entirely, they can be controlled. The paper researches on how organizations manage these unavoidable risks and its effect on the performance of the 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 derivatives contracts and is frequently done by the larger players. 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 the light of above reasons the present study is undertaken to know the effect of exchange rate hedging on the volatility of revenues and profits after tax of SMEs in India .

The research focuses on 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 specifically catering the SMEs. .

Key Words:

Effect , Hedging, Risk , SMEs and Volatility

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1. Introduction

Every business has to face risks during its daily operations. These 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 risks and takes appropriate steps in order to reduce and manage these risks. Even though risks cannot be removed entirely, they can be controlled.

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 organisation. 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 derivatives 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.

The 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 of engaging 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 organisation. This is the research gap as no quantitative data has been utilised in order to analyse 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 effect of exchange rate hedging on the volatility of revenues and profits after tax of SMEs in India .The research focuses on 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 specifically catering the SMEs. .

Conceptual Definition of 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 organisation as it creates an uncertainty in the working of the business.

Impact of Exchange Rate Fluctuations

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 analyse 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.

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 reduces 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 too 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 know the effect of exchange rate hedging on the volatility of revenues and profits after tax of SMEs in India .

Activities Companies Engage In To Reduce Risk

Companies engage in actively hedging their currency risk by entering into derivative contracts. The volatility of the exchange rate is reduced by setting a predetermined price of a predetermined date of transaction. This thereby reduces the loss or gain due to fluctuations. It is also important to note that effective and analysis backed hedging can reduce such risks. Ineffective hedging can lead to further losses. Few of the derivative contracts used by companies to actively hedge their exposure are: currency swaps, forward contracts, and foreign currency options etc.

2. Small and Medium Enterprises (SMEs)

The SMEs in India resonates the dream of starting one's own business that majority of the Indians have. The SMEs have been building the economy of India for the past five decades. In the early 90's, the reforms affected the homegrown industries. In the past three years, the reforms of the government have aided in the acceleration of the growth of the industry in the sectors of manufacturing as well as non-manufacturing industries

Table 1.1: Definition of MSMEs in India

Manufacturing Enterprises - Investment in Plant & Machinery	
Description	INR
Micro Enterprises	upto Rs. 25 Lakh
Small Enterprises	above Rs. 25 Lakh & upto Rs. 5 Crore
Medium Enterprises	above Rs. 5 Crore & upto Rs. 10 Crore

Service Enterprises – Investment in Equipment	
Description	INR
Micro Enterprises	upto Rs. 10 Lakh
Small Enterprises	above Rs. 10 Lakh & upto Rs. 2 Crore
Medium Enterprises	above Rs. 2 Crore & upto Rs. 5 Crore

Source: (MSMED) Act, 2006

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:

- Manufacturing Sector (15 companies)
- Non-Manufacturing Sector (15 companies)

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	1	Creative Peripherals and Distribution Limited
2	Five Core Electronics Limited	2	Soni Soya Products Limited
3	Jash Engineering Limited	3	Anisha Impex Ltd
4	Marshall Machines Limited	4	Ambani Organics Limited

Manufacturing Industry		Non Manufacturing Industry	
Sr. No	Company Name	Sr. No	Company Name
5	Saketh Exim Limited	5	Kritika Wires Limited
6	Servotech Power Systems Ltd.	6	Universal Autofoundry Ltd.
7	Shanti Overseas (India) Ltd.	7	Vadivarhe Speciality Chemicals Limited
8	Ushanti Colour Chem Limited	8	Lagnam Spintex Limited
9	Milton Industries Limited	9	Marine Electricals (India) Ltd.
10	Sintercom India Limited	10	Sakar Healthcare Limited
11	Uravi T and Wedge Lamps Ltd.	11	Rudrabhishek Enterprises Ltd.
12	Vaishali Pharma Limited	12	Cadsys (India) Limited
13	Shrenik Limited	13	Penta Gold Limited
14	South West Pinnacle Exploration Limited	14	Accuracy Shipping Limited
15	Sirca Paints India Limited	15	Akg Exim Limited

List of Companies hedging their exchange risk exposure

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

3.2 Objectives of the Study

- Effect of exchange rate hedging on the volatility of revenues and profits after tax of SMEs in India
- The project aims to analyse the effect of foreign exchange rate fluctuations on the revenue and PAT of small and medium enterprises dealing with foreign companies.

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:

- **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.
- **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.

3.4 Statistical Tools For Analysis

- Volatility Analysis
- Correlation

4. Data Analysis and Discussion

4.1 Volatility Analysis

Table 4.1 : Volatility Analysis of Companies that hedge their risk

Industry /Sector	Company Name	Revenue		PAT	
		Volatility	Volatility	Volatility	Volatility
		2017-18	2016-17	2017-18	2016-17
Manufacturing	Ahimsa Industries Limited	0.02%	0.14%	2.33%	6.13%
	Ahlada Engineers Limited	0.01%	0.00%	0.13%	0.02%
	Avon Moldplast Limited	0.02%	0.01%	0.78%	1.06%
	Emkay Taps and Cutting Tools Limited	0.02%	0.27%	0.07%	1.03%
	Latteys Industries Limited	0.01%	0.03%	0.17%	1.66%
	Marvel Decor Limited	0.01%	0.11%	0.13%	2.49%
	Nitiraj Engineers Limited	0.06%	0.07%	0.80%	0.81%
	Panache Digilife Limited	0.05%	0.10%	1.67%	3.03%
	Thejo Engineering Limited	0.05%	0.32%	0.93%	8.53%
	Vera Synthetic Limited	0.11%	0.56%	2.33%	24.00%
	Worth Peripherals Limited	0.01%	0.01%	0.12%	0.12%
	Zodiac Energy Limited	0.04%	0.02%	0.85%	1.60%
	Ice make refrigeration limited	0.02%	0.03%	0.34%	0.63%
	Mohini Health & Hygiene Limited	0.02%	0.04%	0.79%	0.97%
	Zota Health Care Limited	0.04%	0.05%	0.45%	0.66%
	Average Volatility	0.03%	0.12%	0.79%	3.52%

Non Manufacturing	Softtech Engineers Limited	0.01%	0.05%	0.08%	0.47%
	InfoBeans Technologies Limited	0.03%	0.50%	0.17%	31.53%
	R&B Denims Ltd	0.00%	0.02%	0.12%	9.42%
	JAKHARIA FABRIC LIMITED	0.02%	0.03%	0.96%	0.54%
	Jet Knitwears Limited	0.27%	0.17%	2.44%	3.04%
	Macpower CNC Machines Limited	0.06%	0.16%	0.95%	13.83%
	MMP Industries Limited	1.75%	0.14%	0.11%	2.24%
	Sarveshwar Foods Limited	0.04%	0.05%	0.76%	0.84%
	Euro India Fresh Foods Limited	0.00%	0.01%	0.01%	0.37%
	Aarvi Encon Limited	0.00%	0.02%	0.03%	0.81%
	SecUR Credentials Limited	0.07%	0.38%	0.48%	2.19%
	Dev Information Technology Limited	0.00%	0.00%	0.04%	0.03%
	Jet Freight Logistics Limited	0.00%	0.01%	0.15%	0.64%
	Total Transport Systems Limited	0.02%	0.05%	0.59%	1.80%
	Maheshwari Logistics Limited	0.04%	0.03%	2.70%	1.93%
	Average Volatility	0.15%	0.11%	0.64%	4.65%

The volatility on the revenue for manufacturing and non-manufacturing industries were the same at around 0.11% in 2016-17. The fluctuation or volatility was higher for non manufacturing companies in 2017-18 at 0.15% as compare to manufacturing companies at 0.03%. The volatility of the PAT for manufacturing companies was lesser than non manufacturing companies at 3.52% and 4.65% respectively for the year 2016-17. The situations reversed as the manufacturing companies had a volatility of 0.79% while non manufacturing companies has 0.64% volatility.

1. During the period of study it is found that the volatility of revenues of Manufacturing companies were reduced from 0.12% to 0.03% where as the volatility of Non- manufacturing companies was increased from 0.11% to 0.15%.
2. The volatility of PAT Manufacturing companies were reduced from 3.52% to 0.79 where as the volatility of Non- manufacturing companies was reduced from 4.65% to 0.64%.

Table 4.2: Volatility

Companies that do not hedge their risk

Industry /Sector	Company Name	Revenue		PAT	
		Volatility	Volatility	Volatility	Volatility
		2017-18	2016-17	2017-18	2016-17
Manufacturing	Airo Lam Ltd.	0.21%	0.03%	6.09%	0.98%
	Five Core Electronics Ltd.	0.50%	0.53%	11.96%	74.13%
	Jash Engineering Ltd.	0.63%	0.07%	13.10%	1.10%
	Marshall Machines Ltd.	0.37%	0.53%	5.16%	24.39%
	Saketh Exim Ltd.	1.11%	0.35%	61.59%	18.52%
	Servotech Power Systems Ltd.	0.10%	0.37%	2.73%	5.90%
	Shanti Overseas (India) Ltd.	1.56%	1.17%	43.76%	33.82%
	Ushanti Colour Chem Ltd.	0.32%	0.26%	4.83%	5.53%
	Milton Industries Ltd.	0.11%	0.26%	3.18%	11.78%
	Sintercom India Ltd.	0.80%	0.71%	10.92%	36.61%
	Uravi T and Wedge Lamps Ltd.	0.31%	0.38%	3.85%	10.47%
	Vaishali Pharma Ltd.	0.23%	0.26%	18.90%	23.06%
	Shrenik Ltd.	0.07%	0.05%	7.16%	4.61%
	South West Pinnacle Exploration Ltd.	0.68%	0.20%	5.87%	2.61%
	Sirca Paints India Ltd.	0.60%	0.79%	2.74%	4.74%
Average Volatility	0.51%	0.40%	13.46%	17.22%	
Non Manufacturing	Creative Peripherals and Distribution Ltd.	0.34%	0.43%	29.47%	67.94%
	Soni Soya Products Ltd.	0.94%	0.73%	49.66%	39.86%
	Anisha Impex Ltd	0.01%	0.00%	6.66%	0.19%
	Ambani Organics Ltd.	0.09%	0.14%	3.48%	8.96%
	Kritika Wires Ltd.	0.20%	0.10%	9.88%	8.56%
	Universal Autofoundry Ltd	0.14%	1.74%	2.99%	44.57%
VadivarheSpeciality Chemicals Ltd.	0.19%	0.16%	2.69%	0.95%	

Industry /Sector	Company Name	Revenue		PAT	
		Volatility	Volatility	Volatility	Volatility
		2017-18	2016-17	2017-18	2016-17
Non Manufacturing	Lagnam Spintex Ltd.	0.19%	0.01%	3.35%	0.23%
	Marine Electricals (India) Ltd.	0.17%	0.33%	4.26%	7.99%
	Sakar Healthcare Ltd.	0.32%	0.13%	4.51%	1.75%
	Rudrabhishek Enterprises Ltd.	0.78%	0.13%	5.73%	0.85%
	Cadsys (India) Ltd.	0.42%	0.69%	3.81%	7.05%
	Penta Gold Ltd.	0.11%	0.29%	15.44%	38.64%
	Accuracy Shipping Ltd.	0.15%	0.20%	37.18%	28.22%
	Akg Exim Ltd.	10.90%	0.02%	126.26%	5.04%
	Average Volatility	1.00%	0.34%	20.36%	17.39%

The study establishes a correlation between the volatility or the fluctuation of foreign exchange on the profits of the SMEs in the year 2017-18. A low negative correlation is established at -.099 which suggests that with an increase in the fluctuations, the profit reduces while a decrease in the fluctuations of foreign exchange leads to an increase in the profits.

Table 4.6 : Correlation

Correlations			
		Exchange Rate Gain/Loss	Revenue
Exchange Rate Gain/Loss	Pearson Correlation	1	.209
	N	30	30
Revenue	Pearson Correlation	.209	1
	N	30	30

The analysis establishes a relationship between exchange rate fluctuations and the revenue of companies in 2017-18. The correlation is low and positive at .209 which suggests that an increase in fluctuations lead to an increase in revenue. A decrease in fluctuations would lead to a decrease in revenues. This might be due to the fact that the companies are increasing their exports leading to greater exposure to currency risk. Another possible reason could be ineffective hedging practices leading to a positive correlation.

5. Findings, Suggestions and Conclusion:

5.1 Findings

- 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 affect of profit is 16.9%.
- In 2016-17, the effect of forex fluctuations on profit of the companies were 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%.
- 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.
- 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.
- 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.
- 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

Guidance to SMEs

The SMEs should be provided with proper guidance from the government or from the banks. The aspect of hedging the exposure must be seen as an integral part of the operations for companies

4.2 Correlation

Table 4.3: Correlation

2016-17

Correlations

		Exchange Rate Gain/Loss	PAT
Exchange Rate Gain/Loss	Pearson Correlation	1	.112
	N	30	30
PAT	Pearson Correlation	.112	1
	N	30	30

The correlation between the loss/gain due to foreign currency fluctuations and the profit has been analysed for the year 2016-17. There is a weak positive correlation at .112 between the two variables. This suggests that with an increase in fluctuations, the profits increased marginally and vice versa. The reason is the higher gains in the year which led to an increase in the profits.

Table 4.4: Correlation

Correlations

		Exchange Rate Gain/Loss	Revenue
Exchange Rate Gain/Loss	Pearson Correlation	1	.312
	N	30	30
Revenue	Pearson Correlation		
	N	30	30

The correlation between forex fluctuations and the revenue for the year has been analysed. There is a moderate positive correlation between the two variables. This suggest that an increase in the fluctuation of exchange rate led to a moderate increase in the revenues of the companies in 2016-17. The reasons for the same can be because of growing companies that have initially started targeting foreign customers.

Table 4.5: Correlation

2017-18

Correlations

		PAT	Exchange Rate Gain/Loss
PAT	Pearson Correlation	1	-.099
	N	30	30
Exchange Rate Gain/Loss	Pearson Correlation	-.099	1
	N	30	30

that engages in the export and import of materials and services.

• 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.

• Implementation of Hedging Policy

SMEs should have a hedging policy in the organisation. All large companies follow a particular policy for hedging their risk. This gives a certain direction and removes unambiguity while engaging into derivatives. The SMEs should also form such policies and maintain it in the organisation.

5.3 Conclusion

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.

Hedging can be conducted by many contracts. The most preferred tools used are forwards contracts. The SMEs do not specialise in derivatives and hedging activities because of which there are certain companies that cannot hedge their exposure effectively. This also leads to companies hedging only a percentage of their entire risk. This leads to extreme volatility as seen in the research.

The research also looks at the effect of currency fluctuations on the performance of the SMEs. A significant impact on the performance was analysed. This suggests that a change in the fluctuation leads to a change in revenue and profit as well. Since the fluctuations are quantified in loss or gain due to the fluctuations of foreign exchange, the profit is impacted directly. With a stability in the foreign exchange, the companies tend to increase their exports, thereby increasing the sales.

The correlation between the variables were positive and low in 2016-17. In 2017-18, the correlation between the profit after tax and exchange rate fluctuations was negative which meant that a decrease in fluctuations would lead to an increase in profits.

We can conclude for the study that the concept of hedging for SMEs is new and an aspect that is growing along. With proper guidance and technical support, SMEs can efficiently and effectively manage their currency exposure which would help in boosting their growth.

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