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Impact of Rupee Volatility on the financials of the Indian IT companies.

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ABSTRACT - *Rupee has been depreciating for a long period. A country like India is heavily dependent on oil import, we have seen imbalance in our Balance of payment due to the high depreciation of the Indian Rupee (INR). Yet, depreciation of rupee has helped exports like textile, pharma industry, gems and jewellery and particularly IT sector which is contributes nearly 25% of our exports. IT sector companies have been affected by depreciation in rupee .Recently Indian rupee under great stress is a concern for IT sector. International uncertainty and mounting worries over the domestic economy especially IT sector.The exchange rate between the INR and the US Dollar is fluctuating erratically. In 2009 – 2010 the exchange rate was hovering around the 43 – 45 rupees per US Dollar level. Over the past two years, the rupee has consistently depreciated against the dollar with the last quarter of 2011 (calendar) being one of the worst in terms of Rupee Value Depreciation.This study attempts to find the relation between the revenues, expenses and EBIT and rupee volatility. For this study, we look at 6 Indian IT companies. How do the financials which includes Revenue, EBIT and expenses of the companies are affected by change of rupee. Study has also made comparison between 6 companies how the strategy of hedging is proving beneficial to the IT companies and what is effect of aggressive hedging strategy.*

Keywords –Volatility, Exchange rate, IT (Information Technology),Hedging, EBIT(Earning Before Interest and Tax).

1, INTRODUCTION

Volatile Nature of Indian INR and IT sector

One Man‟s meat is often another man‟s poison.This is a well-known proverb which best explains what the declining INR is doing to Corporate India. While a weak INR is a cause of harm for most sectors, the Country‟s two key export oriented sector – I.T. & Textile – are
expected to gain from the phenomenon. Foreign Exchange rate is an important factor in international trade. The global economy is facing the constant threat of American and European recessionary situation, which reflected in the weakening of the American USD against most of the other currencies including the Indian INR. This has affected India‟s export sector, especially the I.T. sector because about 67% of total revenues comes from U.S. and 90% of their exports invoices are in American USDs. The result of this is the I.T. sector is the hard hit sector due to loss of operating margins, which in turn, make the adverse effect on stock prices. Therefore, it is necessary that the foreign exchange volatility needs to be monitored and observed carefully. Volatility can be quite impactful on the revenues and stock / share prices. The Indian Information Technology

Industry (I.T. Industry) has been appreciated all over the world because the revenue growth of an I.T. Industry is very impressive.

As per a report in The Hindu, dated 12th Feb 2008, According to the estimate of NASSCOM (National Association of Software & Services Companies), in the year 2008, the growth rate of the Software Industry was at 33% and the total revenue – Domestic & Exports oriented together – is at 64 Billion U.S. USDs. However, there was a decrease to 60 Billion U.S. USD by 2010, as per a report in the same newspaper‟s Business Line section dated April 12, 2012.From India‟s software export perspective, the U.S. USD has remained from significant currency. Even after the crisis of 2008, the U.S. USD remains the key factor from India‟s export perspective. Before that the Indian INR‟s had a roaring appreciation against U.S. USD albeit for a short period. In general, therefore the volatility of Indian INR has sent a note of warning to the exporters of Software, Textile, Sugar & Pharmaceuticals Industries.

Volatility can have profound effects on earnings and stock/share prices. However, the extent and nature of this volatility crucially depends upon firm‟s exposure. The inter-connections between exchange rate, Revenues, operating profit and cost quantified as precisely as possible. This study attempts measuring of the "impact of exchange rate volatility" on key parameters of six IT majors in India.

2, REVIEW OF LITERATURE

Literature reviewed usually includes academic journals or peer reviewed journal, books, and authoritative databases Oberoi.(2012), in the article "Riding the INR Stocks How INR's volatility is affecting currency-sensitive shares". How INR's volatility is affecting currency-sensitive shares talks about how INR depreciation is most advantageous to export oriented companies. These include software services, pharmaceutical aquaculture, engineering, Jewelers, manufacturing However, gains for engineering goods, gems & jewelers sectors
limited, because to an extent, the gain is absorbed by the cost increase in import of raw materials. On the other side Information Technology (IT) and pharmaceutical companies are taking advantages being export-focused. Certain sectors earn more profit due to devaluation, including IT. The earnings of the IT sector are ~$60Billion /year, coming from exports of Services & Software. Pharmaceutical : The Indian Pharma Industry is worth $20B, (~INR 1,00,000 Cr.), accruing from exports of $9Billion, or INR 45,000 Cr. Aquaculture – Exports from India of 3,13,000 Tons of marine products upto INR 6,679 Cr., or $1.4Billion , in Apr-Sept 2011. In 2011-12, there was 0.12% volume increase, 19.91% in INR earnings & 23.01% in USD earnings. Implies that the weakened INR assisted exporters of the country‟s seafood. Other way, the capital goods sector was under much pressure in 2011. A cognizable slowdown in incoming order was seen. Also with the then trend of upward interest rates, projects had been delayed or suspended for the time.

Oil Marketing Companies: Prices of Scripts of oil marketing companies i.e. OMCs downed 45 to 50% in the period of Sept-2011 to Dec-2011. Margins were contracting due to higher input costs. The INR's trend in the last half year has significant impacts for India‟s economy & the various classes of assets thereof. Thus in conclusion sectors which depend on imported goods and technology due to increase in cost profit margin have declined and this in high cost of production has lead to inflationary pressure.

This article highlights some points from the interview of Mr.Sujit Sircar, iGATE Patni (The Hindu).In this he stresses that even though The INR could up itself to 50/- in the near-term, the IT-Industry will be looking forward to steadyness of Rupee. He also mentions that even as a revenue-increases with a fall in INR, expenses of country‟s IT companies too raises. So INR depreciating may be affecting positively to the IT industry but in medium range the expenditures like travel, electricity and other normal capital expenses rise. In the coming time, there will also be salary pressures for these organisations.

Edin et. al., (1993); has stated in his paper, " Devaluation Risk in Target Zones: Evidence from the Nordic Countries",Fall in currency is related to money stock ,Industrial production, foreign exchange reserves, and the existing mid parity are also important factors for stock market. This Pattern is Consistent with a simple model where the monetary authorities are assumed to respond to changes in a 'shadow exchange rate', and where the target exchange rate may be treated as a censored variable. The estimates of devaluation probabilities seem robust and reasonable. They also Track actual devaluations rather well. The estimates of the size of devaluations are much less robust but have a small impact on the product of the two estimates, i.e. on the unconditional expected rates of devaluation.

Agarwal.(2012),in article, "Effect of devaluation of Indian currency in Indian economy" say that devaluation happens as a method to rectify BOP imbalance. He mentions in his paper that that rather than devaluation depreciation of the currency is favorable which would enhance the export and in turn increase the economy by increase in employment helping the economy to grow.
Mark Frankena, Devaluation, Recession, and Nontraditional Manufactured Exports from India Author-Mark Frankena, University of Western- Ontario-This paper analyzes the role of industrial recession, changes in export subsidy schemes, and devaluation in explaining the rapid expansion of exports of iron and steel, engineering goods, and tires from India during the 1960s.From this study he was able to state that changes in trade policies and domestic demand let to an increase in the level of export of these commodities.

Bhawna Kalra(2012),Devaluation of INR vs USD : an historical perspective - Bhawna Kalra - 2012 -This paper talks about the reasons for devaluation pre & post liberalization. Author is trying to study the effect of the INR depreciation on the India‟s economy .He is also mentioning that in the continuing weaker INR is more of concern than being favorable. Author suggests that central govt active participation is required to keep stable currrency.

What is the reason behind INR value depreciation? This article states that, the developing country India is heavily counting on the import of raw materials and Oil for its industrial development. Within the decreasing INR situation, the outgoes of cash are higher. This affect the expenses for Oil Marketing Companies (OMC) which incur significant payment to import the Oil.

This case tells that a falling INR isn't a curse for all the sectors however it's a boom to a number of

the sectors. It is benefit for the companies with Exports i.e., Textiles and IT. Companies earning $ revenues saw realizations jump, due to the INR depreciation. However, the increase in earnings may not be proportional to the fall in currency. This is because most corporations defend their forex reserve by hedging their risk, e.g. TCS & Infosys. A depreciation of the Home country currency is nice for export aggressiveness, however plenty of forex consultants don't seem to be terribly happy regarding the volatility the Indian currency as a result of they'll not alter their rates consequently, and therefore the country‟s exchange rates are additional market-driven and sensitive to variety of external and major factors.whereas the INR appreciation will bring down the revenues of IT services corporations, continuous volatility also will push up prices for the businesses. The currency movement can't be predictable. Currency hedging are positions that corporations absorb the
forex market to offset potential losses by judging a band for expected currency variations. If the INR continues to stay weak, the earnings of the export adjusted sector may act. However, fluctuation within the currency isn't continually smart because it will increase the chance too. It becomes necessity for the businesses got to handle their operations thus as to not get hit by a bigger shock just in case of INR reversal, say analysts.

Research Gap

Most of the studies are done taking Macro factors into consideration. A study with a similar topic is available, however with non-identical variables like the stock market price, BOP etc
A Similar study has taken place but in different time frame. Also not all affected cost, revenue parameters were analyzed in that study. Studies are also conducted at different time frame most covering yearly data and mostly concentrating on stock market movement.
Most of literatures available are in business magazines and newspaper, but very few research documents for the time frame.

3,RESEARCH DESIGN

3.1, Statement of problem

The last five years have witnessed a transfer in the power of the various foreign currencies that Indian INR trades against. In particular, the US USD has moved from being the most powerful and important currency to a position of relative non-importance following the crisis of 2008. Yet USD continues to be key element in India‟s exports. Indian INR‟s roaring appreciation against the US USD, although for a short period has sent a note of warning to the exporters; Software, textile, Leather, Sugar and Pharmaceutical Industries. This is especially because of the major portion of their earnings (Revenue) is from the overseas market. One of them is IT Companies.Impact of INR volatility on various types of cost and revenues and EBIT in IT companies need to be analyzed better. As consumer of products of software companies and clients of software solutions companies‟ are facing unpredictability and business uncertainty is having cascading impact on software products and services companies. Thus, the volatility of the Indian INR against the USD is of great concern for especially the IT sector companies. This is study of selected major IT firms in India from 2007 to 2012. Secondary data available from company reports, journals and websites has been used.

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3.2, Objectives of the study

- To ascertain the impact of exchange rate volatility on the revenues of the IT sector companies.

- To ascertain the impact of exchange rate volatility on the operating profits of the IT sector companies.

- To ascertain the impact of exchange rate volatility on the Expenses of the IT sector companies.

3.3, Scope of the study

This study would reveal the variations in the foreign exchange volatility and its impacts on the earnings of selected Top 4 Indian IT companies namely TCS, Infosys, Wipro and HCL. Few factors are used to select the companies. Following are some of the parameters for the selection of these 6 companies.

Parameters	TCS	Wipro	Infosys	HCL	L&T	Tec Mahindra
Revenue in $	10.2 Billion	$4.5 Billion	$ 6.99 Billion	$ 6.2 Billion	$3 Billion	2.33 Billion
Number of employees , total	160,429	108,071	113,796	70,218	50,000	50,570
Market share 2011 in world wide revenue	1.1%	0.6	0.7	0.4	0.7	
Sales Turnover in INR	38,858.54	32,053.60	31,254.00	8,907.22	1.09 crore	5,964.21
Total Assets in INR	24,952.86	29,595.70	29,757.00	7,305.45		4,567.90
Hedging in 2012	$1.3 billion	$1.8 billion	$80 million	Hedge 20-40 %	$ 1.3 million	Hedging $1.1

quarte r ending Mar31 , 2011

TABLE No 1

The study provides an understanding of the various factors that can create an impact on IT revenue, EBIT and Expenses. Source:Nasccom

3.4, Need of the study

Uninterrupted fluctuations in exchange rate impose threats for international business. As a result of change in exchange rate, Exporters as well as importers are affected due to continual volatility. However is favorable for the exporter as depreciation of currency increases exports. Many exporting companies are benefited because of volatility like textile, chemical, pharmaceutical, tourism , gems, jewellery, Information technology (IT). Large scale fluctuations can even bring dramatic changes in the competitive structure of markets which may even cause some companies to be driven out of the market. This can affects investors investing in such companies. Such fluctuation is more to worry than to cheer for the IT companies. Are Financials affecting because of dollar rate increasing? Are companies using strategies to reduce the risk of volatility? Are these strategies beneficial? Is this benefit of rupee depreciation long term or short term? It results in too many questions; whether or not companies in India, are seriously managing their foreign exchange exposure? If not, what is the reason? All of these questions are required to be answered which initiate this research work. This study would reveal the impact of rupee variations on the companies‟ financials. This also helps the investors to predict if it is beneficial to invest in the IT sector.

3.5, Hypothesis

Ho - Exchange rate volatility has no effect on the IT companies‟ revenue and operating profits.

H1 - Exchange rate volatility has an effect on the IT companies‟ revenue and operating profits.

4, RESEARCH METHODOLOGY

4.1, Data source:

The study concentrates on the major 6 IT sector companies only namely;

- Tata Consultancy Services Ltd
- Infosys Technologies Ltd
- Wipro Technologies Ltd
- HCL Technologies Ltd
- Tech Mahindra
- L&T info tech

The data for the study comprises of secondary data that is quarterly data of Revenues, Operating Profit EBIT and Expenses of the selected companies from their quarterly report published on their website. It also includes average of daily data of foreign exchange rates of US USD taken from past 6 years i.e., 2007-2012. Other sources used include articles, journals and magazines, research bulletins, RBI sites and other accessible publications.The study is both qualitative and quantitative. The quantitative data will be used to support the qualitative facts obtained.

4.2, Data Analysis and Interpretation

This study measures the impact of exchange rate volatility on the profitability of the IT sector companies' revenue and operating profits of Four companies‟ is correlated with exchange rate.The relationship between exchange rate volatility and the performance of IT firms is measured by profitability/(earnings) i.e., how the firms earnings/ profits respond to changes in exchange rates between Indian INR (INR) and US USD (USD) is analyzed.„Correlation' and „Regression‟ analysis are used to measure the impacts of independent variable on the dependent variables. Correlation will show how the relationship between the variables is whereas regression analysis helps to know the percentage of the variation in the dependent variable because of independent variable. The trend line is shown to justify the same.The analysis is done on basic premises of:-RevenueEarnings before interest and Tax-EBIT(Operating profits) Expenses.

5, FINDING AND SUGGESTION

5.1, Finding

1. It is found that all the companies Revenue has increased due to INR depreciating. EBIT is also showing relative increase due of INR depreciation

2. Expenses of the selected companies are not showing much impact of INR depreciation since Expenses is incurred in INR.

3. Tata consultancy has a significant positive correlation with Revenue of 0.795a . This relationship between exchange rate and Revenue of Tata consultancy services show an upward inclining trend. There by justifying the positive relationship.

4. The coefficient of determination is .633 of TCS with reference to exchange rate, therefore, about 63.5% of the variation in the Revenue is explained by exchange rate

5. TCS has positive correlation .740a which is significant relationship. . This relationship between exchange rate and EBIT of Tata consultancy services show an upward inclining trend. There by justifying the positive relationship.

6. The coefficient of determination is 0.547 of TCS with reference to exchange rate; therefore, about 54.7% of the variation in EBIT is explained by exchange rate.

7. TCS has correlation .361a which is positive relationship. The coefficient of determination is .130 of TCS with reference to exchange rate; therefore, about 13.0% of the variation in Expenses is explained by exchange rate.

8. Wipro has positive correlation 0.772 which is significant

relationship. The coefficient of determination is 0.596 of Wipro with reference to exchange rate, therefore, about 59.60% of the variation in the Revenue is explained by exchange rate.

9. Wipro has positive correlation of 0.272 .The coefficient of determination is 0.074 of Wipro with reference to exchange rate, therefore, about 7.4 of the variation in the Expense is explained by exchange rate.

10. Wipro has positive correlation 0.786 which is significant relationship. The coefficient of determination is 0.618 of Wipro with reference to exchange rate, therefore, about 61.8 % of the variation in the EBIT is explained by exchange rate.

11. INFY has positive correlation 0. 812a which is significant relationship with Revenue. The coefficient of determination is .659 of INFY with reference to exchange rate, therefore, about 65.9% of the variation in the Revenue is explained by exchange rate.

12. INFY has positive correlation 0.8214224782045492 which is significant relationship with EBIT. The coefficient of determination is 0.675 of INFY with reference to exchange rate, therefore, about 67.5% of the variation in EBIT is explained by exchange rate.

13. INFY has positive correlation 0.336 with Expenses. The coefficient of determination is

.113 of INFY with reference to exchange rate, therefore, about 11.3% of the variation in Expenses is explained by exchange rate.

14. HCL has negative correlation -.535 with the Revenue. The coefficient of determination is 0

.287of Wipro with reference to exchange rate, therefore, about 28.7% of the variation in the Revenue is explained by exchange rate.

15. HCL has negative correlation of -0.437623114184007 with the EBIT. The coefficient of determination is 0.192 of HCL with reference to exchange rate , therefore, about 19.2% of the variation in the EBIT is explained by exchange rate.

16. HCL has correlation o .271with the Expenses. The coefficient of determination is 0.073 of HCL with reference to exchange rate; therefore, about 7.3% of the variation in the Expense is explained by exchange rate.

Companies taken for study	TCS	WIPRO	INFOSYS	HCL	L&T INFOTEC	TECMAHINDRA
Objective 1	To ascertain the impact of exchange rate volatility on the revenues of the IT sector companies.					
Revenue & Exchange Rate	High Degree	High Degree	High Degree	Negative correlation	Low Degree	Low Degree
R value	0.795	0.772	0.812	-0.535	0.209	0.379
Objective 2	To ascertain the impact of exchange rate volatility on the operating profits of the IT sector companies.					
EBIT & Exchange Rate	High Degree	High degree	High Degree	Negative correlation	Low Degree	Low Degree
R Value	0.740	0.786	0.821	-0.438	0.026	0.209
Objective 3	To ascertain the impact of exchange rate volatility on the Expenses of the IT sector companies.					
Expenses & Exchange Rate	Low Degree	Low Degree	Low Degree	Negative correlation	Low Degree	Low Degree
R Value	0.361	0.272	0.336	- 0.271	0.271	0.376

17. It is found that HCL has not much impacted from the INR depreciation but the depreciating INR shows a negative correlation for HCL Ltd.

18. HCL lost almost $600 million in 2009 because of cancelation of long term hedging. This loss was distributed for 7 quarters .so the overall impact of INR volatility is less.

19. The coefficient of determination- R2 is .044 L&T INFO TEC with reference to exchange

rate; therefore, about 4.4% of the variation in the Revenue is explained by exchange rate.
It is found through L&T INFO TEC has positive correlation .209a which is significant relationship. This means that the depreciation of Indian currency to that of USD has resulted minor in an increase of revenues for L&T INFO TEC.

20.L&T INFO TEC has positive correlation .026a which is significant relationship. This means that the depreciation of Indian currency to that of USD has resulted a minor impact which is negligible. It is also showing less impact on Expenses

21. Similarly Tec Mahindra is also very less impacted by the rupee depreciation. Revenue and EBIT are showing ~2% increase. Expenses are also showing less impact.

23 Expenses impacted because of rupee volatility

Cost	INR/Dollar	Impact
Employee cost	INR	Only onsite salary has impacted
Sales cost	$	Global Employees used for sales cost had increased
Post Sales servicing Cost	INR	No Effect
Visa fee and travel cost	$	Impacted
Cost of operations in India	INR	No effect
Hardware and Software purchases	$	Effected

Companies should use various Hedging instruments like options, forwards to reduce the impact of exchange rate. All the companies use hedging as a strategy to mitigate rupee volatility. This study suggests that companies should go for short term hedging than aggressive strategy.

Infosys, T.C.S., Wipro, H.C.L. – have together hedged close to $5 billion, mostly around Rs.45-45 to a USD, which prevents them all from expecting a windfall gain. However the difference is that Infosys, TCS, Wipro follow the Short Term Hedging Strategy, whereas HCL, L&T, Tech Mahindra follow a long term strategy. But according to this study long Term Hedging can lead to losses for these companies. So It is suggested that companies should engage in short term hedge.

Companies like L&T, Mahindra (which use a 3-5 year strategy) can use some of the strategies used by Infosys, TCS and Wipro which are favorable to keep steady revenue in spite of rupee falling. These companies should use short term hedging of two to three quarters.

Aggressive strategy, especially by HCL has led to a loss for 7 quarters. It is suggested that HCL should adopt short term strategy which will prove favorable to the company.

Looking at the trend of impact on Revenue, EBIT and Expenses, hedging in itself should not be the only strategy.Using this in combinations with other strategies like optimum onsite –offshore mix of projects, it is possible to mitigate risks and manage profit (EBIT-Expenses) to a certain extent.

6, CONCLUSION

Since Indian I.T. Firms get 80% of their revenue from U.S. & Europe. The companies are reducing their discretionary technology spends, negotiating deals and shortening the tenure of the projects, thus, are eating into the margins of companies. Infosys to benefit most among I.T. companies from a record depreciation in INR on account of its flexi-hedging policy and higher volume growth with Wipro and T.C.S. following closely.HCL has not been much impacted because of INR depreciation.

Thus currency is the key trigger to margin market to It companies. Extreme volatility in forex market will hinders the planning process. Sudden movement in exchange rate is trouble for It companies for long term basis. As long term contracts are hit by INR fluctuation.

Companies‟ onsite cost has been impacted as cost of stay, air travel , hiring in these geographies getting expensive. So companies are looking at shorter contract. Most of the companies hedging their earnings before hand, the current fluctuation may not make considerable difference. In fact it hampers the planning process for managing volatility. So IT companies are rather looking at stable currency than a windfall gain so that companies and have more predictable and aggressive strategy to check INR volatility. Thus it is clear that short term fluctuation can impact IT companies but the effect is nullified in long run due to other parameters like inflation and increase in cost.

REFERENCES

Agrawal, D. S. Effect of devaluation of indian currency in. (January, 2012). International Referred Research Journal, III(28), Retrieved from http://www.ssmrae.com/admin/images/a700c7848b222baa 9417447e0e9b5ace.pdf

Drazen, A. Recent developments in macroeconomic disequilibrium theory. ((1980). Econometric Society in its journal Econometrica, 48 (2 (March)), 283-306

Drazen, A.Political Contagion in Currency Crises. (2000). National Bureau of Economic Research, Inc, 47-70 Baig, T. & Goldfajn. Financial market contagion Asian crisis. (1998). IMF, WP/95/155

Bensaid , Bernard , Olivier, & Jeanne. The instability of fixed exchange rate systems when raising the nominal interest rate is costly, European economic review. (1997). Elsevier, 41(8), 1461-1478

Bodart. , & Vincent. Exchange rate regime, volatility and international correlations on bond and stock markets. (1999). Elsevier in its journal Journal of International Money and Finance., 18, 133-151.

Kalra, B. (2012). Devaluation of Indian rupee against us $: A historical. (2012). International Journal of Research in Economics & Social Sciences, 2(2), doi: http://www.euroasiapub.org Carmen , M., & Reinhart , (n.d.). Devaluation, relative prices, and international trade: Evidence from developing countries. (1995). IMF Staff Papers, Palgrave Macmillan, vol. 42(2), 290-312

Chiang, T. C, Yang, S. Y, & Wang, T. S. Stock return and exchange rate risk: Evidence from asian stock markets based on a bivariate garch model. (2000). International Journal of Business, 5(2), 97-117 JAIN, D. (n.d.). Effects of fluctuation in dollars on it companies.

K. B., N., & DR.B, S. (n.d.). The offshore services value chain. (2011). International journal of research in commerce ,economics and Management, 1(2), 47-52

King, M, Wadhwani, S. Transmission of volatility between stock markets. (1990).Review of Financial Studies 3, 5– 33

Kraay,Aart.In Search of the Macroeconomic Effects of Capital Account Liberalization.(1998). unpublished manuscript, The World Bank (October) Maheshwari, Y. (2005). Managerial Economics. In Y. Oberoi, R. (2012, Febuary). Ridding Rupee Stock ,How rupee's Volatilty is afecting currency.Business Today .

Sargent, Thomas J. and Neil Wallace .Some Unpleasant Monetarist Arithmetic. (1981). Federal Reserve Bank of Minneapolis Quarterly Review 5 (3), 1–17

World Bank. The East Asian Miracle: Economic Growth and Public Policy. (1993) .Oxford University Press, Oxford Nagaraju, G. (2009). A measure of exchange rate volatility. In Fourth Annual International Conference on Public Policy and Management (pp. PP-062-31).

Takeshi . Central bank intervention and exchange rate behaviour: Empirical evidence for india. (2012). IDE discussion Papers

Huchet-Bourdon, M. and J. Korinek (2011), To What Extent Do Exchange Rates and their Volatility Affect Trade? OECD Trade Policy Papers

"Online Trading | Share/Stock Market Online, Stock Trading in India | Stock Brokers | Edelweiss.in." Online Trading | Share/Stock Market Online, Stock Trading in India | Stock Brokers | Edelweiss.in. Edelweiss.in/, n.d. Web. 20 Apr. 2013.
Infosys

"online trading | share/stock market online, stock trading in india | stock brokers | edelweiss.in. (n.d.). Retrieved from https://www.edelweiss.in/

About wipro . (n.d.). Retrieved from http://www.wipro.com/about-wipro/?&lang=en_us&output=json Sajag online. (2012, June). Retrieved from http://www.sajagonline.com/sajag/php/uploads/SajagOnlin e-June-2012.pdf?&lang=en_us&output=json

Murali , D. „rupee depreciation will impact oct-dec results of it companies positivel'y. The Hindu Business Line. Retrieved from

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