

Trinity Effects on Current and Capital Account of Foreign Trade in India

Dr. S. Rajaswaminathan,

Guest Faculty,
Department of Commerce,
School of Management,
Pondicherry University,
Karaikal Campus,
Karaikal – 609 605.

Dr. G. Naresh,

Assistant Professor,
Department of Commerce,
School of Management,
Pondicherry University,
Karaikal Campus,
Karaikal – 609 605.

Aurojyoti Kar,

II M.Com (Business Finance),
Department of Commerce,
School of Management,
Pondicherry University,
Karaikal Campus,
Karaikal – 609 605.

Abstract

Exports and imports of goods and services have grown rapidly since the World War II. Foreign trade is more important for all the countries to increase the foreign exchange holdings of all the economies in the current days. An increasing volume of trade for a country benefits the standard of living of our population as well as economic development in several ways. In spite of the steady growth in international trade, there are some frequent concerns about the impact of exchange rate, inflation rate and MIBOR movements on foreign trade on export and import activities of a country. This paper empirically investigates the impact of exchange rate, inflation and MIBOR volatility on the exports and Imports in terms of current account, capital account and overall account position in India.

Keywords: Foreign Trade, Export, Import, Exchange Rate, Inflation Rate, MIBOR

Introduction

Import and Export have been growing importance of vibrant and emerging economies in the global trade and the share of total output in the globe. In the early 1970s, the collapse of the Bretton Woods System triggered on whether the exchange rate variability is a curb of global trade. Recently, 1997 Asian financial crisis and 2008 global financial crisis were rekindled on exchange rate, inflation and MIBOR effects on trade; thereby the overall trade activity is an aggregation of decisions of individual firms of any nation. India has launched its policy reform agenda and implemented a host of liberalization reforms, primarily targeting the foreign exchange market and the tradable sectors. India shifted to a more market oriented exchange rate system through devaluations and deregulations in 1992-93. Since then the exchange rate has mostly been under a managed floating regime with the Reserve Bank of India intervening from time to time to stabilize the nominal exchange rate.

An exchange rate is the price of one currency in terms of another. Exchange rate, like price of any other commodity, is determined in a market called Foreign Exchange market. Foreign exchange market is an international financial market meant for exchange of various national currencies. It is said that the Sun never sets on the foreign currency market like on the erstwhile British

Empire. Real exchange rate is commonly known as a measure of international competitiveness. It is also known as index of competitiveness of currency of any country and an inverse relationship between this index and competitiveness exists. Lower the value of this index in any country, higher the competitiveness of currency of that country will be.

Inflation not only creates problems within the economy, but also in the sphere of external trade of a country, that is, countries trade balances with the rest of the World. Country's trade relations with the other countries involve exports and imports of goods and services and how much a country will export and import depends, amongst other thing, on the domestic price level and variation in it, that is, the rate of inflation.

The interest rate at which banks can borrow funds, in marketable size, from other banks in the Indian interbank market is called MIBOR. The Mumbai Interbank Offered Rate (MIBOR) is calculated everyday by the National Stock Exchange of India (NSEIL) as a weighted average of lending rates of a group of banks, on funds lent to first-class borrowers. The MIBOR was launched on June 15, 1998 by the Committee for the Development of the Debt Market, as an overnight rate. Since the launch, MIBOR rates have been used as benchmark rates for the majority of money market deals made in India.

Objectives & Methodology

The study with the objective of the exchange rate, inflation rate and MIBOR effects on foreign trade with respect to import and export of current account, capital

account and overall positions of the trade. Using annual time series data, the Multiple Regression analysis has been carried out for the period 2005-06 to 2013-14. The study has taken independent variables i.e., exchange rate, inflation rate and MIBOR and dependent variables i.e., exports and imports. Hence in order to understand the effects of exchange rate, inflation rate and MIBOR changes on trade balance, it is important to analyze how exchange rate, inflation rate and MIBOR fluctuations affect the global trade.

Analysis and Discussion

The multiple correlation co-efficient indicates that the correlation among the independent and dependent variables is positive and the statistic, which ranges from -1 to +1, does not indicate statistical significance of this correlation. The analysis of variance information provides the breakdown of the total variation of the dependent variable in to the explained and unexplained portions. The SS Regression is the variation explained by the regression line; SS Residual is the variation of the dependent variable that is not explained. The F-statistic is calculated using the ratio of the mean square regression (MS Regression) to the mean square residual (MS Residual). The results of the estimated regression line include the estimated coefficients, the standard error of the coefficients, the calculated t-statistic, the corresponding p-value, and the bounds of both the 95% confidence intervals.

Table 1: Multiple Regression Analysis of Trinity effects on Current Account Credit

Regression Statistics							
Multiple R						0.900387006	
R Square						0.810696761	
Adjusted R Square						0.697114818	
Standard Error						1201880.632	
Observations						9	
ANOVA							
		<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression		3	3.09309E+13	1.03103E+13	7.13755	0.029529	
Residual		5	7.22259E+12	1.44452E+12			
Total		8	3.81535E+13				
	<i>Co-efficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	
Intercept		13431242	3621940	3.708	0.013	4120746	22741737
Exchange rate		-341419	88271	-3.867	0.011	-568328	-114511
Inflation		716223	194372	3.684	0.014	216572	1215874
MIBOR		-108087	263202	-0.410	0.698	-784670	568495

Source: Secondary Data | Computed by Researcher

The above table 1, shows that the multiple correlation coefficient is 0.900. The coefficient of determination, R^2 , is 81.06% and it means that close to 81% of the variation in the dependent variable (Export) is explained by the independent variables (Exchange Rate, Inflation Rate and Mumbai Interbank offered Rate). The adjusted R-square, a measure of explanatory power, is 0.6971. The standard error of the regression is 1201880.632, which is an estimate of the variation of the observed Export in billions, about the regression line. The critical F value is 7.137 for 3 and 5 degrees of freedom with 5% significance level. The independent variables that statistically significant in explaining the variation in the

export as indicated by the calculated p-values of Exchange Rate, Inflation Rate that are less than the significance level of 5% and Mumbai Interbank offered Rate is less than the significance level of 10%. The relationship between export and Inflation Rate is positive. The coefficient of 716223 indicates, on average, an additional export increases by 716223. The Exchange Rate and Mumbai Interbank offered Rate are negatively related to the export. The coefficient of the Exchange Rate and Mumbai Interbank offered Rate are -341419 and -108087 indicates, on average, an additional export decreases by -341419 and -108087 respectively.

Table 2: Multiple Regression Analysis of Trinity effects on Current Account Debit

Regression Statistics						
Multiple R						0.904545811
R Square						0.818203125
Adjusted R Square						0.709125
Standard Error						1163477.784
Observations						9
ANOVA						
		<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression		3	3.05E+13	1.02E+13	7.501074	0.02677
Residual		5	6.77E+12	1.35E+12		
Total		8	3.72E+13			
	<i>Co-efficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	13676381	3506212	3.900	0.011	4663377	22689385
Exchange rate	-335548	85450	-3.926	0.011	-555207	-115890
Inflation	691287	188162	3.673	0.014	207601	1174973
MIBOR	-154438	254792	-0.606	0.570	-809403	500526

Source: Secondary Data | Computed by Researcher

The above table 2, shows that the multiple correlation coefficient is 0.904. The coefficient of determination, R^2 , is 81.80% and it means that close to 82% of the variation in the dependent variable (Export) is explained by the independent variables (Exchange Rate, Inflation Rate and Mumbai Interbank offered Rate). The adjusted R-square, a measure of explanatory power, is 0.709. The standard error of the regression is 1163477.784. The critical F value is 7.501 for 3 and 5 degrees of freedom with 5% significance level. The independent variables that statistically significant in explaining the variation in the

export as indicated by the calculated p-values of Exchange Rate, Inflation Rate that are less than the significance level of 5% and Mumbai Interbank offered Rate is less than the significance level of 10%. The relationship between export and Inflation Rate is positive. The coefficient of 691287 indicates, on average, an additional export increases by 691287. The Exchange Rate and Mumbai Interbank offered Rate are negatively related to the export. The coefficient of the Exchange Rate and Mumbai Interbank offered Rate are -335548 and -154438 indicates, on average, an additional export decreases by -335548.8102 and -154438 respectively.

Table 3: Multiple Regression Analysis of Trinity effects on Capital Account Credit

Regression Statistics							
Multiple R						0.917017	
R Square						0.84092	
Adjusted R Square						0.745472	
Standard Error						934170.5	
Observations						9	
ANOVA							
		<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression		3	2.3065E+13	7.69E+12	8.810256	0.01935	
Residual		5	4.3634E+12	8.73E+11			
Total		8	2.7429E+13				
	<i>Co-efficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	
Intercept		11411170	2815179.84	4.053	0.009	4174520	18647820
Exchange rate		-289190	68609	-4.215	0.008	-465556	-112823
Inflation		620835	151077	4.10	0.00	232477	1009193
MIBOR		-118334	204575	-0.578	0.588	-644213	407545

Source: Secondary Data | Computed by Researcher

The above table 3, shows that the multiple correlation coefficient is 0.917. The coefficient of determination, R^2 , is 84.09% and it means that close to 84% of the variation in the dependent variable (Export) is explained by the independent variables (Exchange Rate, Inflation Rate and Mumbai Interbank offered Rate). The adjusted R-square, a measure of explanatory power, is 0.745. The standard error of the regression is 934170. The critical F value is 8.810 for 3 and 5 degrees of freedom with 5% significance level. The independent variables that statistically significant in explaining the variation in the export as indicated by the calculated p-values of Exchange Rate, Inflation Rate that are less than the

significance level of 5% and Mumbai Interbank offered Rate is less than the significance level of 10%. The relationship between export and Inflation Rate is positive. The coefficient of 620835.3 indicates, on average, an additional export increases by 620835.3. The Exchange Rate and Mumbai Interbank offered Rate are negatively related to the export. The coefficient of the Exchange Rate and Mumbai Interbank offered Rate are -289190 and -118334 indicates, on average, an additional export decreases by -289190 and -118334 respectively.

Table 4: Multiple Regression Analysis of Trinity effects on Capital Account Debit

Regression Statistics							
Multiple R						0.905826	
R Square						0.82052	
Adjusted R Square						0.712832	
Standard Error						2236095	
Observations						9	
ANOVA							
		<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression		3	1.14E+14	3.81E+13	7.619432	0.02595	
Residual		5	2.5E+13	5E+12			
Total		8	1.39E+14				
	<i>Co-efficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	
Intercept		26223333	6738608	3.891	0.011	8901189	43545476
Exchange rate		-652210	164228.5	-3.971	0.010	-1074372	-230046
Inflation		1354643	361629	3.745	0.013	425043	2284241
MIBOR		-264624	489687	-0.540	0.612	-1523405	994156

Source: Secondary Data | Computed by Researcher

The above table 4, shows that the multiple correlation coefficient is 0.905. The coefficient of determination, R^2 , is 82.05% and it means that close to 82% of the variation in the dependent variable (Export) is explained by the independent variables (Exchange Rate, Inflation Rate and Mumbai Interbank offered Rate). The adjusted R-square, a measure of explanatory power, is 0.712. The standard error of the regression is 2236095. The critical F value is 7.619 for 3 and 5 degrees of freedom with 5% significance level. The independent variables that statistically significant in explaining the variation in the export as indicated by the calculated p-values of

Exchange Rate, Inflation Rate that are less than the significance level of 5% and Mumbai Interbank offered Rate is less than the significance level of 10%. The relationship between export and Inflation Rate is positive. The coefficient of 1354643 indicates, on average, an additional export increases by 1354643. The Exchange Rate and Mumbai Interbank offered Rate are negatively related to the export. The coefficient of the Exchange Rate and Mumbai Interbank offered Rate are -652210 and -264624 indicates, on average, an additional export decreases by -652210 and -264624 respectively.

Table 5: Multiple Regression Analysis of Trinity effects on Overall Account Credit

Regression Statistics							
Multiple R						0.905825732	
R Square						0.820520256	
Adjusted R Square						0.71283241	
Standard Error						2236094.65	
Observations						9	
ANOVA							
		<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression		3	1.14294E+14	3.81E+13	7.619432	0.02595	
Residual		5	2.50006E+13	5E+12			
Total		8	1.39295E+14				
	<i>Co-efficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	
Intercept		26223332	6738608	3.891	0.011	8901189	43545476
Exchange rate		-652209	164228	-3.971	0.010	-1074372	-23004
Inflation		1354642	361629	3.745937	0.01335	425043476	2284241
MIBOR		-264624	489687	-0.540	0.612	-1523405	994156

Source: Secondary Data | Computed by Researcher

The above table 5, shows that the multiple correlation coefficient is 0.905. The coefficient of determination, R^2 , is 82.05% and it means that close to 82% of the variation in the dependent variable (Export) is explained by the independent variables (Exchange Rate, Inflation Rate and Mumbai Interbank offered Rate). The adjusted R-square, a measure of explanatory power, is 0.712. The standard error of the regression is 2236094. The critical F value is 7.619 for 3 and 5 degrees of freedom with 5% significance level. The independent variables that statistically significant in explaining the variation in the export as indicated by the calculated p-values of

Exchange Rate, Inflation Rate that are less than the significance level of 5% and Mumbai Interbank offered Rate is less than the significance level of 10%. The relationship between export and Inflation Rate is positive. The coefficient of 1354642 indicates, on average, an additional export increases by 1354642. The Exchange Rate and Mumbai Interbank offered Rate are negatively related to the export. The coefficient of the Exchange Rate and Mumbai Interbank offered Rate are -652209 and -264624 indicates, on average, an additional export decreases by -652209 and -264624 respectively.

Table 6: Multiple Regression Analysis of Trinity effects on Overall Account Debit

Regression Statistics						
Multiple R						0.909039
R Square						0.826351
Adjusted R Square						0.722162
Standard Error						2131660
Observations						9
ANOVA						
		df	SS	MS	F	Significance F
Regression		3	1.08118E+14	3.60395E+13	7.931264	0.02395277
Residual		5	2.27199E+13	4.54398E+12		
Total		8	1.30838E+14			
	Co-efficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	24777962	6423888	3.857	0.011914	8264829	41291094
Exchange rate	-632678	156558	-4.0411	0.009	-1035124	-230232
Inflation	1347275	344740	3.908	0.011	461091	2233458
MIBOR	-217816	466816	-0.466	0.660	-1417807	982174

Source: Secondary Data | Computed by Researcher

The above table 6, shows that the multiple correlation coefficient is 0.909. The coefficient of determination, R^2 , is 82.60% and it means that close to 83% of the variation in the dependent variable (Export) is explained by the independent variables (Exchange Rate, Inflation Rate and Mumbai Interbank offered Rate). The adjusted R-square, a measure of explanatory power, is 0.722. The standard error of the regression is 2131660. The critical F value is 7.931 for 3 and 5 degrees of freedom with 5% significance level. The independent variables that statistically significant in explaining the variation in the export as indicated by the calculated p-values of Exchange Rate, Inflation Rate that are less than the significance level of 5% and Mumbai Interbank offered Rate is less than the significance level of 10%. The relationship between export and Inflation Rate is positive. The coefficient of 1347275 indicates, on average, an additional export increases by 1347275. The Exchange Rate and Mumbai Interbank offered Rate are negatively related to the export. The coefficient of the Exchange Rate and Mumbai Interbank offered Rate are -632678 and -217816 indicates, on average, an additional export decreases by -632678 and -217816 respectively.

Conclusion

The exchange rate and MIBOR have significant negative impact on exports and imports, but inflation rate has significant positive impact on exports and imports of current account, capital account and overall account in India. It reveals that these factors are playing crucial role on import and export of our economy. The government and the authority should concentrate on the control over volatility in exchange rate, inflation rate, MIBOR will give positive impact on foreign trade in India. Hence, the

stability in exchange rate, inflation rate, MIBOR will increase the export and decrease the import activities in India.

References

- Bhanumurthy, N. R., & Sharma, C. (2013). Does Weak Rupee Matter for India's Manufacturing Exports?. *National Institute of Public Finance and Policy Working Paper*, (2013-115).
- Kroner, K. F., & Lastrapes, W. D. (1993). The impact of exchange rate volatility on international trade: reduced form estimates using the GARCH-in-mean model. *Journal of International Money and Finance*, 12(3), 298-318.
- Mallick, S., & Marques, H. (2008). Exchange rate transmission into industry-level export prices: A tale of two policy regimes in India. *IMF Staff Papers*, 83-108.
- McKenzie, M. D. (1999). The impact of exchange rate volatility on international trade flows. *Journal of Economic Surveys*, 13(1), 71-106.
- Mousavi, S., & Leelavathi, D. S. (2013). Agricultural Export and Exchange Rates in India: The granger causality Approach. *International Journal of Scientific and Research Publications*, 3(2), 1-8.
- Pyne, P. K., & Roy, S. S. (2009, June). EXCHANGE RATE PASS-THROUGH IN INDIA: AN EXPLORATION WITH SECTORAL IMPORT PRICES. In *DEGIT Conference Papers* (No. c014_038). DEGIT, Dynamics, Economic Growth, and International Trade.