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Causes of Indian Rupee Depreciation and its Impact on Bangladesh Economy

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Abstract

The intention of this paper is to examine the impact of Indian Rupee depreciation on Bangladesh Economy. The empirical results obtained from OLS for the sample period from 2007:10 to 2013:10 show that Bangladesh's export to India is sensitive to India's Rupee depreciation. It is elastic implying that a 1% increase in India's Rupee will cause Bangladesh's export to India to decline by 2.7 percent. The relative output and the relative price variables are also very sensitive to Indian Rupee depreciation. Bangladesh import from India is insensitive to India and Bangladesh relative exchange rate changes. It is insensitive implying that 1% increase in India's Rupee will not cause any changes in Bangladesh's imports from India. However, Bangladesh's imports are very sensitive to the relative price level changes as evident from the estimated equation. The empirical results obtained from OLS show that Bangladesh consumer price index is insensitive to relative exchange rate changes though appear with the expected positive sign. However, India's consumer price index is highly significant with the expected positive sign implying that a 1% increase in the India's price will cause Bangladesh price level to increase by 0.76 percent.

Introduction

Increased globalization plays a significant role in transmitting economic shocks between countries. As international interdependence grows, changes in foreign economic policies exert greater influence on domestic economies. Therefore, the intention of this paper is to examine the impact of recent Indian Rupee Depreciation on Bangladesh economy. Bangladesh shares most of its border with India. Therefore, the level of integration between the two countries through trade is very active. India is Bangladesh's one of the major trading partners. Because, India's economy is large relative to Bangladesh, and because Bangladesh's capital markets are not entirely open, trade plays a significant role in the transmission of shocks. Therefore, the contagious effect of border and trade can

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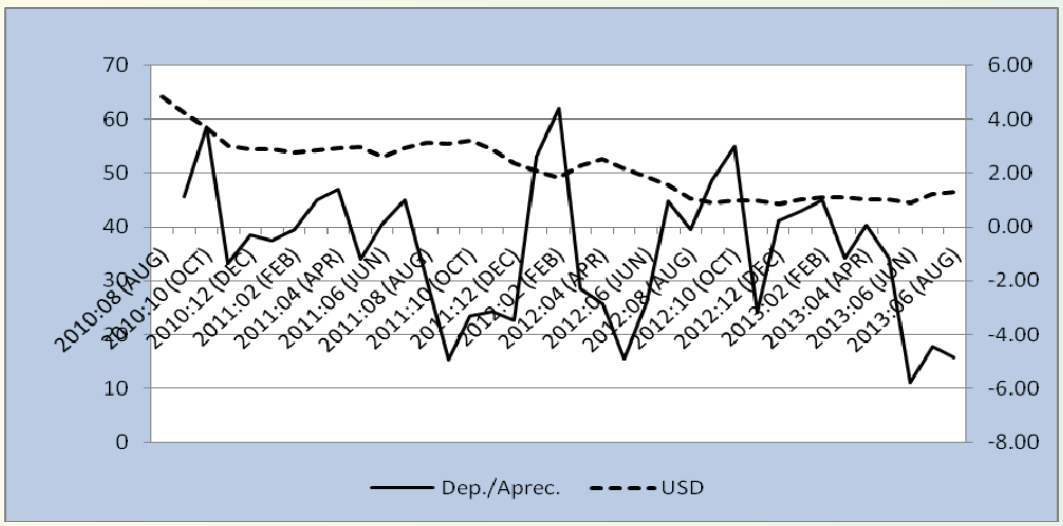
have a significant impact on domestic macroeconomic variables, particularly inflation and output. Indian authorities have reacted to the sharp depreciation by implementing a host of measures including higher interest rate through a liquidity squeeze on the banking system. The Reserve Bank of India (RBI) intervened in the market to protect the rupee by selling 2.72 billion of US dollar on June, 13 as against the purchase of only USD 469 million.

In this backdrop, an attempt has been made to assess the impact of Indian Rupee depreciation if any on Bangladesh economy. The plan of this study is as follows: after introduction in Section-1, causes of Indian Rupee depreciation is analyzed in section II. Section III deals with the related literature followed by an overview of Indian and Bangladesh trade relations in Section IV. Model specification, data, and model variables are discussed in Section V supported by the empirical results in Section VI and finally conclusions and recommendations in Section VII.

II. A Brief Analysis of Causes of Indian Rupee Depreciation

In India, in the backdrop of slackening growth, higher fiscal and current account deficits, higher CPI inflation coupled with the announcement effects of US Federal Reserve Bank to reverse its Quantitative easing (QE) bond purchases have translated into a rapid appreciation of the US dollar and depreciation of Rupee. It was also largely due to safe heaven flight of capital resulting from sell-offs in the financial markets. The sell-off had been made worse by new capital control introduced on August 14th in response to incipient signs of capital flight which reversed again in September 2013. The Indian government reduced the amount from 400% to 100% that Indian residents and firms can take out of the country.

Chart-1: Trends of India's Rupee Dollar Exchange Rate and its Appreciation and Depreciation



Source: Economic Trends, Bangladesh Bank.

Many foreign investors feared that India might freeze their funds too, as Malaysia did during its crisis in 1998 (The Economist, 24th August 2013). Despite the assurance of Indian authorities, the markets (stock and currency) keep sliding like other emerging and developing economies where most currencies have fallen 5-15% against the dollar in the past three months.

The RBI started easing monetary policy at the beginning of 2013, but last month (July 2013) saw a sudden change as the rupee was seen to be volatile (Table-1). Surprising the market expectations, the recent policy statement of RBI supported the stimulus program of the government that may likely to create downward pressure on Rupee. Unexpected increased in money supply causes the exchange rate to depreciate along with capital outflow on fears that foreign capital could flow back to the United States as the US economy improved.

Although, a sharp depreciation of the currency poses no immediate threat to the Indian government's solvency as the government has almost no foreign currency debts. The pain may be felt in other ways. Private firms that owe most of India's foreign debts would be under deep stress; particularly if the rupee drops further, some may go bust. Inflation will rise as the weak Rupee is fueling inflation and making imports more expensive as the country heavily relies on imports of crude oil, chemical, and some foodstuffs, which are priced in US dollars. In the short term nothing can do so, the market may overshoot intensely and appreciate after that. In the meantime, India's Rupee to a dollar may likely to find a new equilibrium with higher output and GDP growth.

Table-1: Major Monetary Policy Rates and Reserves Requirements

Effective Date	Bank Rate	Repo	Reverse	Cash Reserve Ratio	Marginal Standing Facility	Statutory Liquidity Ratio
20-09-2013	9.50	7.50	6.50	-	9.50	-
15-07-2013	10.25	-	-	-	10.25	-
3-05-2013	8.25	7.25	6.25	-	8.25	-
19-03-2013	8.50	7.50	6.50	-	8.50	-
9-02-2013	-	-	-	4.00	-	-
29-01-2013	8.75	7.75	6.75	-	8.75	-

Source: The Reserve Bank of India (RBI).

Table-2: Sale/Purchase of U.S. Dollar by the Reserve Bank of India

Month	Year	Net Purchase/ Sale of Foreign Currency ($ mil.)	Purchase (+) ($ mil.)	Sale (-) ($ mil.)
June	2013	-2,252.00	469.00	2,721.00
May	2013	-107.00	3,003.00	3,110.00
April	2013	518.00	3,298.00	2,780.00
March	2013	820.00	3,165.00	2,345.00
February	2013	-280.00	3,021.00	3,301.00
January	2013	-18.00	2,039.00	2,057.00

Source: RBI

Some may found it little convincing for Indian economy that the economy may get into a new equilibrium with higher output and employment aided by the increased exports, decreased imports helping domestic companies to reduce its large current account deficits. On the other hand, other policy makers are strongly skeptic about such a positive idea. They favored not to allow Rupee to lose its value too much as it might have serious adverse policy implications on India's commercial borrowings from the external sources as it results in increased debt repayments. The weakened rupee pushed international investors pulling money out of Indian shares and securities markets. The weak Rupee is fueling inflation and making imports more expensive as the country heavily relies on imports of crude oil, chemical, and some foodstuffs, which are priced in US dollars.

II.1 Recent Trends in Bangladesh Taka:

Bangladesh economy stood well with 6.13 percent real GDP growth in FY13 amid global economic weaknesses. Although in FY12, the country faced the challenges of rising inflation and balance of payments pressures stemming mainly from a sudden surge in oil imports. However, FY13 end with lower points-to-points CPI inflation and large surpluses in the balance of payments with all-time high foreign exchange reserves.

After a sudden drop in the par value of Taka against USD in early 2012, the Bangladeshi currency gradually gained its strength against US dollars since then (Chart-1). The reason could be attributed to current account surplus, higher exports and remittances, lower imports, comparatively higher interest rates and adequate foreign exchange reserves. Bangladesh Bank's intervention in the foreign exchange market also helped to stabilize the value of Taka. Bangladesh Bank has continued its interventions in the money market with a net purchase of USD 4.54 billion during FY13.

The REER based exchange rate reflecting the external competitiveness of Taka increased to Taka 79.07 per USD at end June 2013 from Taka 78.37 per USD at end-March 2013. The weighted average nominal exchange stood at 77.76 per USD at end June 2013 from Taka 78.58 per USD at end March 2013. Appreciation of REER based exchange rate indicates

some erosion of export competitiveness of Bangladesh currency in the international market during the period.

III. A Brief Review of the Literature

Many studies examine the impact of foreign monetary shocks on macroeconomic variables in developed and developing countries. Examples include Younus and Wheeler (2009), Amuedo-Dorantes and Wheeler (2001), Cushman and Zha (1997), Mixon, Pratt, and Wallace (1979), Selvor and Round (1996), and Sheehan (1992).

Younus and Wheeler (2009) examine the impact of domestic and foreign monetary shocks on Bangladesh's major economic aggregates. In the context of a semi-global economy, the conduct of monetary policy becomes increasingly more difficult as globalization proceeds. It becomes necessary to examine the impact of changes in relevant 'foreign' variables (e.g., interest rate, money supply, exchange rate) while formulating domestic monetary policy. The empirical results of the present analysis show that innovations to foreign money supply have significant impacts on Bangladesh's real exchange rate, interest rate, and output.

Amuedo-Dorantes and Wheeler (2001) examined the impact of the European Union (EU) on Spanish economic activity during the period from 1987 to 1997. They employ monthly data to estimate the impulse response functions and variance decompositions derived from a near vector autoregressive (NVAR) model. All techniques support the hypothesis that the European Union's income and prices had a strong influence on Spanish income and price variables.

Hoffmaister, Roldos, and Wickman (1997) examine the sources of macroeconomic fluctuations, especially output, and prices empirically, in Sub-Saharan African countries. They divide the countries into CFA franc countries (where exchange rates are pegged vis-à-vis to the French franc) and non-CFA franc countries (where exchange rate can frequently adjust). A five variable (output, real exchange rate, price level, world interest rate, and terms of trade) structural vector autoregressive (SVAR) model is used to derive variance decompositions and impulse response functions. Variance decompositions and impulse response functions show that the sources of output fluctuations in Sub-Saharan African countries are mainly due to the domestic supply shocks. External sectors also have some impact on the domestic output, prices, and the real exchange rate more in CFA franc countries than non-CFA franc countries.

In the CFA-franc countries, sixty percent of price fluctuations are due to demand shocks while twenty percent of price changes are due to domestic supply and external shocks. In the non-CFA-franc countries, eighty-five percent of fluctuations of prices are due to demand shocks. Due to favorable terms of trade shock, the price level declines temporarily and then quickly revert to its original level (Hoffmaister, Roldos, and Wickman, 1997, p.20). An examination of differences in economic structure across the countries does not appear to have a significant impact on the differences in macroeconomic fluctuations. However, differences in exchange rate regimes turn out to have major effects on the macroeconomic changes.

Cushman and Zha (1997) examine monetary policy shocks in Canada by using a structural vector autoregression (SVAR) model with monthly data from 1974 to 1993. Variables used are: the U.S. dollar price of Canadian currency, a monetary aggregate (M1), three-month Treasury bill rate, consumer price index, industrial production, total exports to the U.S., and total imports from the US, US industrial production, U.S. consumer price index, the U.S. Federal Funds rate, and the world total exports commodity price index in U.S. dollars. All variables are in logarithmic form except for the interest rates. The results from contemporaneous coefficients show that all the variables in the money demand and money supply equations are significant with the expected sign except for the foreign interest rates. The estimated results of the information market variables are significant except for domestic (Canada) and U.S. industrial production, the foreign interest rate, and world commodity price index of exports.

Selvor and Round (1996) examine to the what extent Japanese business cycles transmitted to Australia over the period from 1961.1 to 1994.4. Japan is the major trading partner of Australia. Japan contributes twenty-five percent (25 percent) of Australian exports to Japan and receives twenty percent (20 percent) of imports from Japan. Impulse response functions estimated from the VAR show that innovation to Japan's GNP has a significant positive impact on Australian GDP. US GDP also has an important positive impact on the Australian GDP, which is twice as large as the impact of Japanese GNP. However, Australian GDP does not have any significant impact on the Japanese GNP.

Sheehan (1992) conducted a study to examine the effects of the monetary policy of the G-7 countries, Switzerland, and the U.S. on the monetary policy of the G-7 countries and Switzerland. He found that the G-7 countries were unsuccessful in influencing money growth of other G-7 economies. U.S. money growth, domestic inflation and real domestic output have significant impacts on France, Germany, Italy, Japan, United Kingdom and Switzerland's money growth.

Mixon, Pratt and Wallace (1979) separate the exchange rate regimes as fixed, transition, and flexible exchange rate, The fixed rate period is 1962.I to 1970.IV, the transition regime is from 1971.I to 1974.III and the flexible exchange rate regime are from 1974.IV to 1977. III. The U.K. nominal GDP on U.S. money supply, a trend variable, and a set of dummy variables for different exchange rate regimes and seasonal dummy variables. An F-test fails to reject the hypothesis that U.S. money supply has no effect on U.K. income during a fixed exchange rate period. The U.S. money supply has a positive impact on U.K. income in both the transition and flexible exchange rate periods. The differences in the results, as noted by Mixon (1992), are due to differences in the exchange rate regimes.

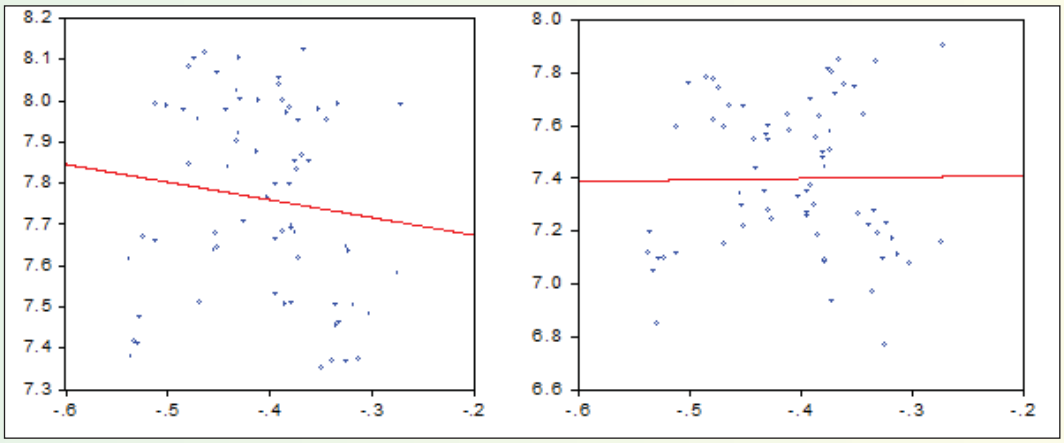
IV. An Overview of India and Bangladesh Trade relationship

India is Bangladesh's second largest source of imports comprising around 14 percent of total imports, much of it being cotton and fabrics used in the manufacture of apparels for exports, although a minor export destination (less than 4 percent of total exports). The impact of Indian Rupee depreciation on Bangladesh's external trade competitiveness is, therefore, a significant policy concern.

IV.1 Impact on Trade Balance

India is the second largest trading partner of Bangladesh. In FY'13, Bangladesh exported goods amounting of about USD 564 million to India while imported of about USD 4,777 million. Due to Rupee depreciation, Bangladesh trade balance with India may deteriorate as increased export competitiveness of India relative to Bangladesh is likely to have an adverse impact on Bangladesh's exports to India.

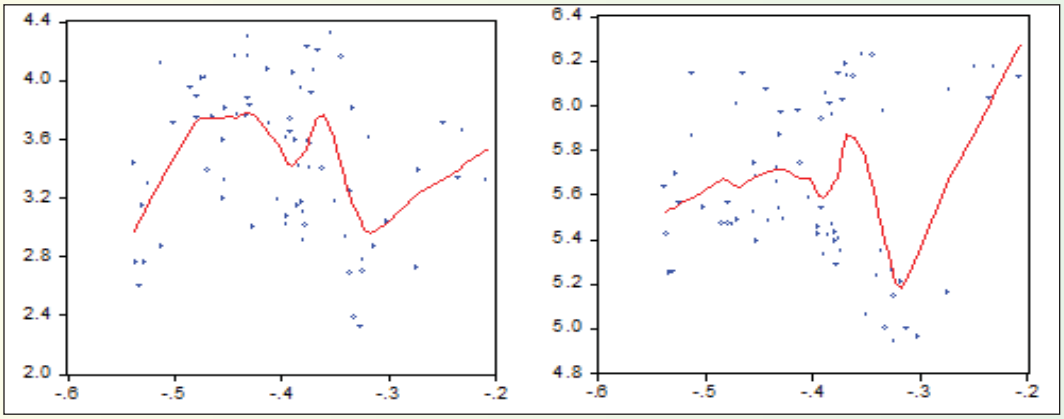
Chart 2: log of relative exchange rate vs. Bangladesh export (left) to and import (right) from India



On the other hand, lower import cost would increase imports from India. A commodity wise analysis shows that top five exportable items of Bangladesh to India are fruits, precious metals, iron and steel, jute goods and raw jute and vegetable oils. However, it is worth noting that none of these commodities are the major products for Bangladesh to export. On the other hand, on Bangladesh import payments, India placed second after China for the imports, e.g., cotton, cereals, vehicles, and nuclear reactors. Bangladesh imports raw cotton from India, which is used as inputs for the RMG sector.

A linear regression line of the above scatter diagrams shows that Bangladesh exports to India (left) have a negative relationship with the relative exchange rate changes while the relationship is positive with imports. This is may be because a fall in Rupee would make imports costlier for India thereby Bangladesh exports of the major commodities to India are expected to decrease to some extent. In fact during July-September, 2013, raw jute exports are reduced by 55.87% in volume and 52.96% in value which is one of the major export goods to India. Jute products also faced hit from Rupee depreciation. An empirical analysis of Bangladesh's export to India from the sample period October 2007 to October 2013 revealed that Bangladesh exports to India are very sensitive to relative exchange rate changes. This implies that if the relative exchange rate increases by 1% that would cause Bangladesh's export to India to declined by 2.87 percent.

Chart 3: log of relative exchange rate vs. Bangladesh export (left) to and import (right) from India (With nearest neighbor fit)

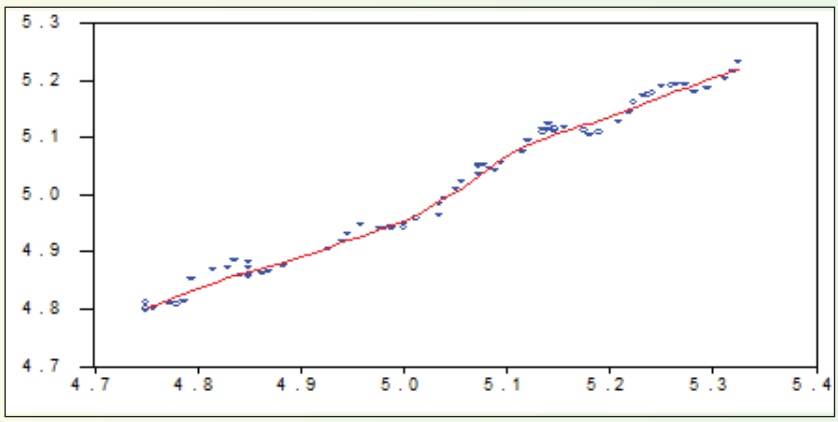


The actual data during July-September, 2013 show that Bangladesh export shipments to India fall by 29.42 (y-o-y) percent (Table-1) while during the same quarter Bangladesh total export shipment to world increased by 21.24 percent implying that it is may be due to country-specific factors such as India's Rupee depreciation that may have adverse impact on Bangladesh exports to India.

IV.2 Impact on inflation

The point to point WPI Inflation of India increased from 4.70% on May,13 to 7.00% on October,13. Bangladesh is a net importer in the trade relationship between India and Bangladesh. Therefore, inflation may decline in the short run due to lower import cost of consumer goods as a result of the appreciation of Taka and depreciation of Rupee.

Chart-4: log of India's and Bangladesh CPI inflation



From the above linear regression line of scatter diagram estimated for the same sample period shows that Bangladesh consumer price index would increase due to changes in Bangladesh and India's relative exchange rate. An estimated coefficient between India's

consumer price levels with Bangladesh consumer price level shows that a 1% increase in the India's price level will cause Bangladesh price level to rise by 0.76 percent through import channel.

Table-3: Average monthly export of Bangladesh and India, January-September, 2013

						As % of Total Export	
HS Code		**Bangladesh**		**India**		**Bangladesh**	**India**
62	**Woven Garments**	**Average Monthly Export (USD MM)**	**As % of Category Export**	**Average Monthly Export (USD MM)**	**As % of Category Export**	**39.9%**	**2.6%**
	USA	309.04	32.5%	154.11	23.4%		
	Germany	134.90	14.2%	41.63	6.3%		
	UK	91.42	9.6%	66.97	10.2%		
	Spain	45.73	4.8%	28.65	4.4%		
	Canada	42.52	4.5%	10.36	1.6%		
61	**Knitwear**					**41.1%**	**2.1%**
	Germany	215.53	22.0%	46.60	8.9%		
	UK	109.77	11.2%	64.85	12.3%		
	USA	105.62	10.8%	119.63	22.8%		
	France	77.25	7.9%	28.41	5.4%		
	Spain	69.04	7.0%	15.20	2.9%		
63	**Other Made Textile Articles**					**3.0%**	**1.4%**
	USA	11.28	16.0%	169.85	48.0%		
	Germany	6.27	8.9%	21.97	6.2%		
	India	6.01	8.5%	-	-		
	UK	5.83	8.3%	21.78	6.2%		
	Canada	4.31	6.1%	8.82	2.5%		
53	**Raw Jute & Jute Goods**					**2.3%**	**0.1%**
	Turkey	14.92	26.9%	0.29	1.2%		
	China	7.74	14.0%	5.10	21.5%		
	Iran	6.40	11.5%	0.15	0.6%		
	India	4.54	8.2%	-	-		
	Pakistan	3.52	6.3%	0.02	0.1%		
03	**Frozen Foods**					**2.7%**	**1.4%**
	Belgium	10.28	16.0%	9.86	2.8%		
	Netherlands	9.99	15.5%	3.55	1.0%		
	Germany	8.18	12.7%	2.08	0.6%		
	USA	7.30	11.4%	104.28	29.5%		
	UK	7.29	11.3%	9.95	2.8%		

Source: BRAC EPL, Stock Brokerage Ltd.

IV.3 Export competitiveness of India and Bangladesh

Although export competitiveness of India following Rupee depreciation will increase as compared to Bangladesh, it may not have a substantial impact on Bangladesh total exports if economic and political stability prevails in the country. According to World Trade Organization (WTO) database, Bangladesh ranked 3rd on textile and apparel exports after China and Italy. Bangladesh total amounts of exports receipts from the world on clothing was USD 19.95 bn in 2012. On the other hand, India ranked 7th on textile and apparel exports. The total export amount was USD 13.83 bn in 2012. Table-3 shows major export commodities of Bangladesh and % share of Bangladesh and India's exports in these commodities.

Table-4: Exports of Clothing in the World Market (USD at current prices)

Rank	Country	USD in MM	% share of world export
1	China	159,613.7	37.76
2	Italy	22,147.5	5.24
3	Bangladesh	19,948.3	4.72
4	Germany	17,574.7	4.16
5	Turkey	14,289.6	3.38
6	Viet Nam	14,068.3	3.33
7	India	13,832.7	3.27
8	Others	161,210.6	38.14
	World	422,685.6	100.00

Source: World Trade Organization (WTO)

IV.4 Impact on Import

With respect to import payments of Bangladesh, India placed second after China for the commodities, e.g., cotton, cereals, vehicles, nuclear reactors, etc. Bangladesh imports raw cotton from India, which is used as intermediate goods for the garments industries.

Top 5 commodities of Export Shipments, 2012-13			Top 5 commodities of Import Payments, 2012-13		
Items	**Value in million USD**	**%**	**Items**	**Value in million USD**	**%**
Woven garments	11039.9	40.85%	Capital Goods	5758.8	16.90%
Knitwear	10475.9	38.76%	POL (refined)	3642.0	10.69%
Jute goods	800.7	2.96%	Textile and articles thereof	3273.0	9.60%
Home textile	791.5	2.93%	Iron, steel and other base metals 2334.7	6.85%	

Shrimps	454.9	1.68%	Raw cotton	2005.1	5.88%
Others	3464.5	Others	17070.0		
Total	27027.36		Total	34083.6	

IV.5 Impact on other BOP flows

As far as other flows from India are concerned such as remittances, private capital outflows, bilateral grant, loans, the stock of debt, it is revealed that the amount is not very significant to have an impact on BOP. Remittances from India are on average $3^{1/2}$ percent of total remittances and bilateral loans and grants in FY13 was USD172 million while the stock of debt was USD83 million. Vulnerability from private capital outflows will not be significant as Bangladesh has a relatively closed capital account.

V. Data Analysis, Model Specification, Model variables, Methodology

To assess the impact of Indian Rupee depreciation on export, import, and the price level of Bangladesh an attempt has been made to estimate three models using monthly data for the sample period from 2007: 10 to 2013:12. The log of real exports, real imports, and the price level of Bangladesh are used as dependent variables while the bilateral exchange rate of India and Bangladesh has been used as a proxy for the relative exchange rate variable. The price level of India and Bangladesh are used to calculate the relative price variable, the industrial production index of India and Bangladesh are used to calculate the relative income variable.

Model Variables

Model-1: Dependent Variable: Log of BD export to India

Log_y=log of the industrial production index.
Log_e=log of the relative exchange rate.
Log_p=log of the relative price level.

Model-2: Dependent Variable: Log of BD import from India

Log_y=log of industrial production index
Log_e=log of relative exchange rate
Log_p=log of the relative price level.

Model-3: Dependent variable: log of price level_BD

Log_y=log of industrial production index of India and Bangladesh
Log_e=log of relative exchange rate between India and Bangladesh
Log_p=log of relative price level between India and Bangladesh(CPI)
Log_m=log of imports of Bangladesh from India
Log_p_India=log of India's price level
Log_p_BD= log of Bangladesh's price level

V.I Data Analysis

V.I.1 Stationary of the Time Series Data

The empirical analysis involves some steps. The finding that many time series macro variables may contain a unit root has spurred the development of the theory of non-stationary time series analysis. Non-stationarity in Time Series (TS) arises due to the presence of trends in the data which is stochastic in nature (random walk process) and it confirms that the data has a unit root process. Any regression results with non-stationary TS provide spurious relationships between variables and therefore, provide misleading implications of the relationship.

V.I.2 Unit Root Test Results

To see whether the variables included in the model are non-stationary a series of Unit Root Tests are performed with time trend and intercept. The estimated results using Augmented Dickey-Fuller (1979) and Phillips-Perron (1998) tests show that the null hypothesis, $H_{0,}$ (has a unit root) cannot be rejected for all the variables have been performed. According to the ADF and PP tests, Log of the relative exchange rate, a log of relative price variable and a log of industrial production index, a log of Bangladesh real exports, a log of real imports, a log of Bangladesh and Indian price level have unit root in levels, while they are stationary in the first differences. An Ordinary Least Square (OLS) method is used to estimate the models. The first difference of each variable is used to avoid spurious relationship between the dependent and independent variables.

Table V.1: ADF and PP Tests for Unit Root

Variables	ADF	PP	Variables	ADF	PP
Log_y	-1.56	-3.02***	Δ Log_y	-9.21***	-4.26***
Log_e	-2.10	-1.65	Δ Log_e	-5.76***	-5.73***
Log_p	-0.80	-1.45	Δ Log_p	-3.73***	-10.37***
Log_M	-1.84	-2.42	Δ Log_M	-9.80***	-9.89***
Log_p_India	-0.74	-1.74	Δ Log_p_India	-5.33***	-3.96***
Log_X	-2.28	-1.80	ΔLog_X	-9.21***	-4.96***
Log_p_BD	0.94	-0.02	ΔLog_p_BD	-5.83***	7.14***

*** implies significant at the 1 percent level.

V.II Empirical Results

V.II.1 Impact on Exports

The empirical results obtained from OLS show that Bangladesh's export to India is sensitive to India's Rupee depreciation. It is elastic implying that a 1% increase in India's Rupee will cause Bangladesh's export to India to decline by 2.15 percent. The relative output and the relative price variables appear to be insensitive to Indian Rupee depreciation. The statistically insignificant coefficient for the price level of India compared to Bangladesh implies that a 1% increase in the relative price level of India does not have any impact on

Bangladesh export to India. On the other hand, industrial production index as proxies by output show that a 1% increase in the India's output compared to Bangladesh will not have any impact on Bangladesh export to India. The adjusted R^2 is quite high implying the model is a good fit. The Durbin-Watson shows that there is no first-order autocorrelation present in the model. The Q-statistics also shows that the residuals are white noise implying no higher order autocorrelation present in the model.

Model-1: Dependent Variable: log of BD export to India		
$\Delta lnBD\_Export\_India = \beta_0 + \Delta\beta_1 Log\_e + \Delta\beta_2 Log\_y + \Delta\beta_3 Log\_p + \varepsilon t$		
Variable	Co- efficient	T-value
D(Log_e)	-2.15	0.05**
D(Log_y)	-0.17	0.77
D(Log_p)	-2.93	0.28
c	0.03	0.10*
$AdjR^2$ 0.51		
DW 2.05		

Note:** implies significant at the 5% level. * implies significant at the 10% level

V.II.2. Impact on Imports

The empirical results obtained from OLS show that Bangladesh import from India is insensitive to India's Rupee depreciation. However, the impact of the relative price on the Bangladesh imports from india appear significant with the expected negative sign. The significant and negative coefficients implies that a 1% increase in the relative price of India compared with Bangladesh will reduce Bangladesh import from India by 4.01%.

Model-2: Dependent Variable: log of BD import from India		
$\Delta \ln BD\_Import\_India = \beta_0 + \Delta\beta_1 Log\_e + \Delta\beta_2 Log\_y + \Delta\beta_3 Log\_p + \varepsilon t$		
Variable	Co efficient	P-Value.
D(Log_e)	0.07	0.90
D(Log_y)	-0.07	0.78
D(Log_p)	-4.01	0.01***
c	0.02	0.15
AdjR2	0.07	
DW	1.99	

Note:*** implies significant at the 1% level

V.II.3. Impact on the Price level

Model-3: Dependent variable: log of price level_BD		
$\Delta lnBD_{Price} = \beta_0 + \Delta\beta_1 Log_e + \Delta\beta_2 Log_y + \Delta\beta_3 Log_p + \Delta\beta_4 Log_{p_{India}} + \varepsilon t$		
Variable	Co efficient	T-value
D(Log_p_India)	0.31	0.02**
D(Log_e)	0.03	0.28
D(Log_M)	0.01	0.07**
D(Log_y)	-0.01	0.75
c	0.004	0.08**
AdjR2	0.23	
DW	1.99	

Note:*** implies significant at the 1% level

Log_y=log of industrial production index of India and Bangladesh

Empirical results obtained from OLS show that Bangladesh consumer price index is insensitive to relative exchange rate changes though appear with the expected positive sign. However, India's consumer price index is highly significant with the expected positive sign implying that a 1% increase in the India's price will cause Bangladesh price level to rise by 0.31 percent. The coefficient of import also appears significant at the 10% level. The significant and positive coefficient implies that 1% increase in the Bangladesh import from India will increase inflation in Bangladesh.

VI. Conclusion:

Empirical analysis shows the existence of elastic demand of BD's export to India on changes in the relative exchange rate (depreciation) with a positive coefficient of 2.15, on the other hand, an estimate of BD's import demand (from India) on changes in the relative exchange rate (depreciation) shows a statistically insignificant coefficient though with the positive sign. However, actual data shows that during the period of sharp depreciation of Indian rupee relative to BDT (May-September 2013) imports payments of BD from India posted a very marginal increase of only 11 million USD (on quarter to quarter basis). Thus, econometric estimation seems to support the trend of actual data. There are sensible arguments to think that this quantitative result may be valid for a very short term or near term.

In the medium term however sudden upsurge of enormous global demand for different Indian products including cotton, RMG, textiles, edible oil, and fish feed (due to depreciation of Indian Rupee) may contribute to higher local prices of these products in India due to sudden demand pressure; and also Indian's limitation in enhancing its export supply in immediate term to respond this higher global demand will contribute to higher local prices.

In this situation like other countries, BD's import from India would expect to fall in the medium term followed by a gradual increase in import from India in the long run. In fact,

supply rigidity due to the nature of export items that mostly depend on agricultural raw materials such as cotton, oil seeds, fruits and other imported raw materials Indian producers may adjust the quantity of export supply slowly with somewhat higher local prices. In this way, the higher price level in India may transmit to the domestic price level of Bangladesh through import channel. However, the net results would depend on the relative exchange rate changes and the price level changes.

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