

IMPACT OF CURRENCY DEVALUATION ON THE EXPORTS: A COMPARATIVE STUDY ON PAKISTAN, BANGLADESH AND INDIA[§]

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ABSTRACT

In this paper we analyze the effect of currency devaluation on exports of three major economies of South Asian (i.e., Pakistan, Bangladesh, and India) over the period 1980 to 2012, by implementing the multiple regression models. Results revealed that currency devaluation encourages exports of Pakistan and Bangladesh. Lending interest rate significant negative effect in Pakistan and Bangladesh but insignificant in India. Government expenditure encouraged the export of Pakistan while not significant in Bangladesh while depress in India. Money supply also enhanced the export of Pakistan, Bangladesh, and India. Results suggest that concerned authorities should manage and use the resources properly in such a way which may assist to develop the economies.

Keywords: Currency Devaluation; Exports; South Asia, Lending Interest Rate; Government Expenditures.

INTRODUCTION

This study examines the effect of currency devaluation on exports of three major economies of South Asian (i.e., Pakistan, Bangladesh, and India). According to Kalyoncu, Artan, Seyfettin and Ozturk (2008) the relationship between the real exchange rate and the level of output is an essential and hot issue for economic growth. For the improvement of international trade, devaluation of currency is considered a key tool for the development of the economy.

Dwivedi (2001) says that national income is the money value of all final outcomes of all economic activities of a country. Zaiby (2008) explained devaluation as decrease in the value of nation's currency comparative to gold or the other currencies. Bahmani-Oskooee, Chomsisengphet and Kandil (2002) recommended that devaluations have expansionary effect on aggregate demand and output. Kalyoncu et al. (2008) recommended that exchange rate

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depreciation raises the cost of imported inputs, leading to a decrease in aggregate supply. Additionally, exchange rate depreciation may raise the domestic interest rate and wages level through an increase in the price level. This might also decrease the aggregate supply in the economy. According to Zaiby (2008), Pakistan has been facing the trade deficit problem since 1947. To solve the trade deficit problem and improve the output level, Pakistan devaluated the currency in different periods from 1955 to till now. It is also concluded that devaluation may temporarily increase exports only if the demand of exported goods is price elastic in the foreign country, but this is not necessary for those goods for which the demand is not price elastic. Ratha (2010) said that currency devaluation has expansionary effect on output in India. India devaluated the currency in different phases from 1991 to till now to launch the economic development. Within the Keynesian framework, devaluation of currency improved the economic development by encouraging the aggregate demand, output and exports through the multiplier effect. Nusrate (2008) argued that the exchange rate is the most important policy variable for determination of the capital flows, trade flows, FDI, international reserve, inflation and remittance of the economy.

Problem Statement and Research Question

Devaluation of currency may raise the domestic interest rate, wages level and price level due to inflation. This might also decrease the aggregate demand and supply (Krugman T. , 1978). Devaluation of currency may discourage the imports, encourage exports, and increase in revenue collections, savings, investment, employment, and improve the trade balance. In this way devaluation of currency may have expansionary effect on the economy (Bahmani, Chomsisengphet, & Kandil, 2002). Thus, this research is being conducted to check the impact of currency devaluation on exports of selected South Asian countries. The main research question of present is as follow:

- Does currency devaluation lead to improve the export of Pakistan, Bangladesh, and India?

Significance of Research and Objective

The main aim of the study is to analyze currency devaluation effect on the exports, further to investigate the changes of goods exports trends due to the devaluation of currency. The identification of link between currency devaluation and exports will be guiding the policy makers which will lead to improvement of exports and balance of payment of the country. Following are the main objectives, which will be achieved in this research:

- To examine the export trend due to the change in real exchange rate
- To analyze currency devaluation effect on the exports

LITERATURE REVIEW

This section helps to understand the previous work conducted on the research topic. Literature review creates the foundation for the research on the basis of previously developed theories. Arize, Osang, and Slottje (2013) documented that the instability of the real effective exchange rate, exchange rate uncertainty have a significant negative impact on export demand in both the long-run and the short-run. Exchange rate volatility considerations are essential for modeling export behavior in LDC's. Sabri, Abu Laban, and Peeters(2012) found instability of exchange rates leads to decrease the international trade volume. Galebotswe and Andrias (2011) found that an increases in government consumption expenditure while monetary policy has the expected a negative effect on output growth.

Rashid and Asif (2010) documented that there is positive relationship between the real exchange rate and trade balance in long run. Devaluation of currency has a negative effect in short run but is effective for the improvement of trade balance and export in long run. Shu-Ching, Chao-Min, and Ming-Hsein (2010) revealed that depreciation of currency in country decreased the relative price of locally produced goods and then stimulates demand for home export. Mohammad and Hussain (2010) found a significant and long run relationship among the variables (i.e. Real effective exchange rate, gross domestic production and balance of trade). It was resulted that real exchange rate depreciation has a positive impact on balance of trade. So the depreciation of currency is in favor of Pakistan's export. Hussain and Muhammad (2010) found long run relationship between real exchange rate variation and trade balance in Pakistan. Rashid and Asif (2010) documented that currency devaluation has a negative impact in short run and is effective for the improvement of trade balance and export in the long run. Hussain and Muhammad (2010) proved and determined the effect of real exchange rate depreciation on the trade balance in Pakistan.

The empirical results of Puah, Yong, Mansor and Lau (2008) confirmed that exchange rate has no long run stable impact on trade balances in the Asian economies, the exchange rates has a stable influence on trade balances in the short run excluding Indonesia. Other factors including money supply, interest rates and real GDP have greater effects on trade balance rather than exchange rate in the long run. The study of Duasa (2007) analyzed the

short and long run relationships among income, money supply, trade balance and real exchange rates in the case of Malaysia. The results suggested that Marshall Lerner condition has not hold in the long run for Malaysia and there policy regarding Malaysian balance of payments/trade balance should be viewed from monetary and absorption approaches.

Narayan (2006) concluded that real effective exchange rate, trade balance, foreign income and domestic income have no co-integration relationship but there is a casual relationship in both directions between foreign income and trade balance. Matiur and Anisul (2006) found that exchange rate fluctuations have the negative impact on trade balance in short run and little positive impact in the long run. Currency devaluation reduces the imports and increases the exports and also used as a key tool to control the trade deficit in Bangladesh. This study found that currency devaluation may not a useful tool for the improvement of trade balance of Bangladesh. Soliman (2005) found that currency devaluations have a significant positive effect on export and local sale. The study of Olugbenga (2003) suggested long run stable co-integrating relationship between real trade balances, real foreign income, real domestic income and real exchange rate. Overall, the results of the study recommended that the Marshall-Lerner condition exist in the long run with varying level of J-curve effects in the short run.

Osang and Arize (2000) revealed that exchange rate uncertainty has a significant depressing effect on demand of export in both the long run and short run. Bailey, Tavlas, and Ulan (1987) examined the theoretical relationship among exchange rate instability and export expansion and also analyzed the empirical impact of such variation on real export expansion of 11 OECD countries. Out of 33 regressions; only three supported that exchange rate instability has unfavorable effect on export performance.

THEORETICAL FRAMEWORK

There are two mechanisms through which devaluations affect output:

Expenditure-Switching Effect

Currency devaluation affects relative prices and, therefore, the demand for domestically produced goods. Devaluation increases the domestic price of imports and decreases the foreign price of exports; therefore, it decreases imports and increases exports.

Balance Sheet Effect

If debts are denominated in dollars while firms' revenues are denominated in domestic currency, unexpected changes in the exchange rate will affect firms' balance sheets. Due to deterioration of balance sheet debts becomes expensive and it negatively effects on the production capacity.

According to Rashid and Asif (2011), currency devaluation is usually undertaken to control the deficit balance of payment. Some analysts recommended that weakening the currency value is a good tool for the development of the economy. Since a weaker currency will increase exports, production, investment and employment which means of economic growth. In macroeconomics traditional views such as Keynesians approach emphasized that currency devaluation has an expansionary effect on output level through "expenditure switching and reducing effect". It shifted the demand of goods from foreign to domestically produced goods. Currency devaluation increased the price of imported goods whereas the price of domestic goods decreased which encouraged the export of goods. If the Marshall-Lerner condition satisfied, currency devaluation enhanced the GDP and trade balance in the long run (Taye, 1999). The study based on the following theories:

Purchasing Power Parity (PPP) Theory

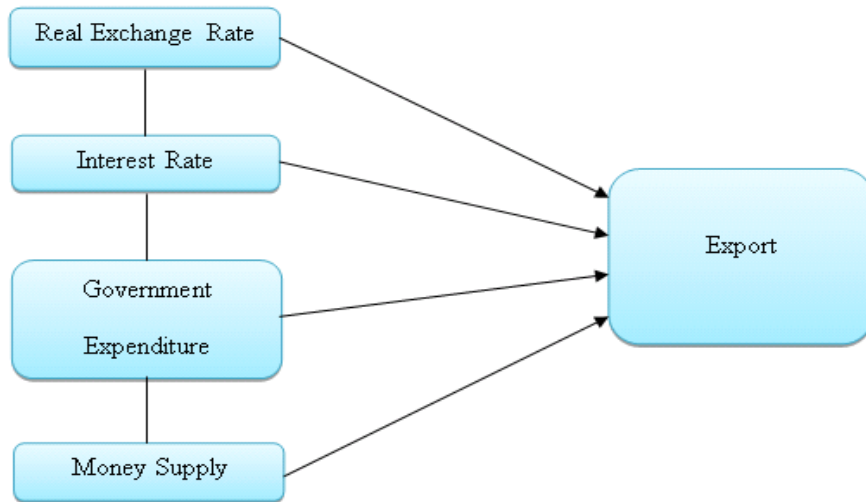
Adrangi and Allender (2010) described that purchasing power parity (PPP) is a technique and an economic theory which used to find out the relative value of currencies. This theory described that how much money would be required to purchase same goods and services in two different countries, and used to calculate foreign exchange rate. This theory is based on a principle of the law of one price. This law states that, in the absence of official trade barriers and transaction costs and the prices are expressed in the same currency, identical goods have same price in different markets.

Balance of Payment Theory/Demand and Supply Theory

If the other things remain constant, the high the price of goods then lower the quantity demanded is called law of demand and the quantity supplied of a good increases when price of the good rises. According to the balance of payments theory, the exchange rate is determined by the balance of payments according to the demand and supply of foreign exchange in the foreign exchange market. A deficit balance of payments has a negative effect and depreciated the external value of the country's currency while a surplus balance of payments has a positive effect and appreciated the external value of the country's currency.

FIGURE 1

Schematic Diagram



Hypotheses

The study focuses on testing the following hypotheses:

- *H₁: Real exchange rate significantly affects the export*
- *H₂: Interest rate affects significantly the export*
- *H₃: Government expenditure significantly affects the export*
- *H₄: Money supply significantly affects the export*

Currency devaluation has also significant impact on export of a country because currency devaluation, change the real exchange rate can affect the money supply, interest rate and government expenditure which may effect on the export. In this way currency devaluations may effect on the export country.

DATA AND METHODOLOGY

In this study, secondary data of 33 years from 1980 to 2012 is used. This study is conducted on three major South Asian countries namely: Pakistan, Bangladesh, and India. Data is collected from the World Bank, International Monetary Fund (IMF), Fedral Bureau of Statistics (FBS), International Financial Statistics (IFS), State Bank of Pakistan (SBP) and Ministry of Finance.

Multiple regression models were used to estimate the effect of the real exchange rate, interest rate, government expenditure and money supply on export. Following the works of Khan and Knight (1981), Edwards and Ahamed (1986), Domaç (1997), Bahmani-Oskooee,

Chomsisengphet and Kandil (2002), Christopoulos (2004) and Djiogap (2012), the following models were used for this study.

$$Export = \alpha + \beta_1 RER + \beta_2 LIR + \beta_3 RGE + \beta_4 MS + e$$

Here

RER stands for the real exchange rate,

LIR stands for lending interest rate,

RGR stands for real government expenditure,

MS stands for money supply,

β show the coefficient of variables and

e stands for Error term.

TABLE 1

Operational Definitions of Contents

Variables	Definitions
Exports	Exports of goods and services are the value of all goods and services provided to rest of the world.
Official Exchange Rate	Official exchange rate is the exchange rate determined by national authorities.
Real Exchange Rate Index (2005 = 100)	Real exchange rate is the nominal exchange rate divided by a consumer price index.
Lending Interest Rate (%)	Lending interest rate is the bank rate that usually meets the medium and short term financing requirements of the private sector
Government Expenditure	Government expenditure included all government expenditures for purchases of goods and services.
Money and Quasi Money (M2) (current US\$)	Money and quasi money contain the sum of currency outside banks, time, saving, demand and the foreign currency deposits of occupant sectors other than the government. The definition of money supply is normally called M2 which is written under the lines 34 and 35 in the International Monetary Fund's International Financial Statistics.

Source. World Bank, National Accounts data, International Financial Statistics and International Monetary Fund.

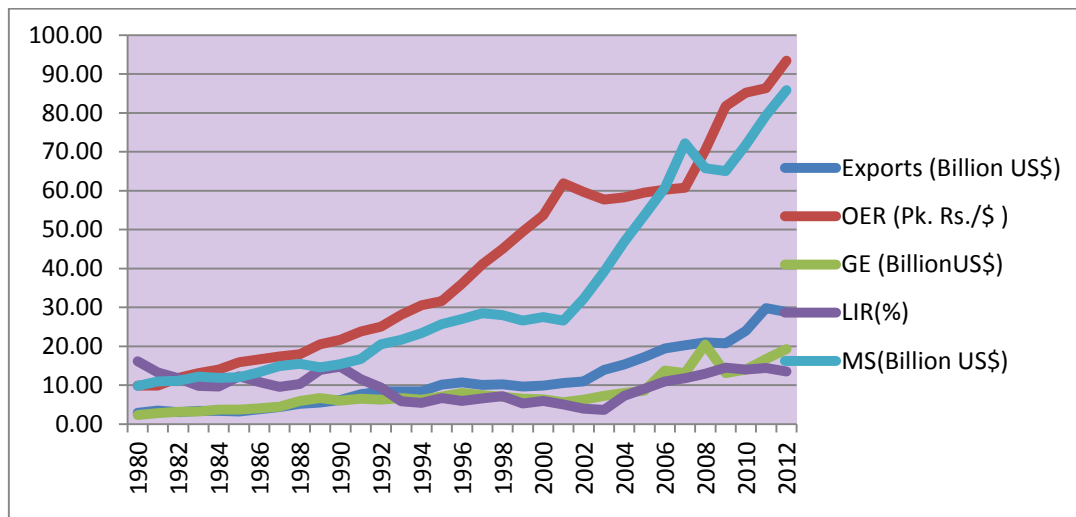
$$\text{Real Exchange Rate} = \frac{\text{Nominal Exchange Rate} \times \text{Domestic Consumer Price Index}}{\text{Foreign Consumer Price Index}}$$

$$\text{Real Government Expenditure} = \frac{\text{Nominal Government Expenditure}}{\text{Consumer Price Index}} \times 100$$

Visual Presentation of Variables under Consideration

FIGURE 2

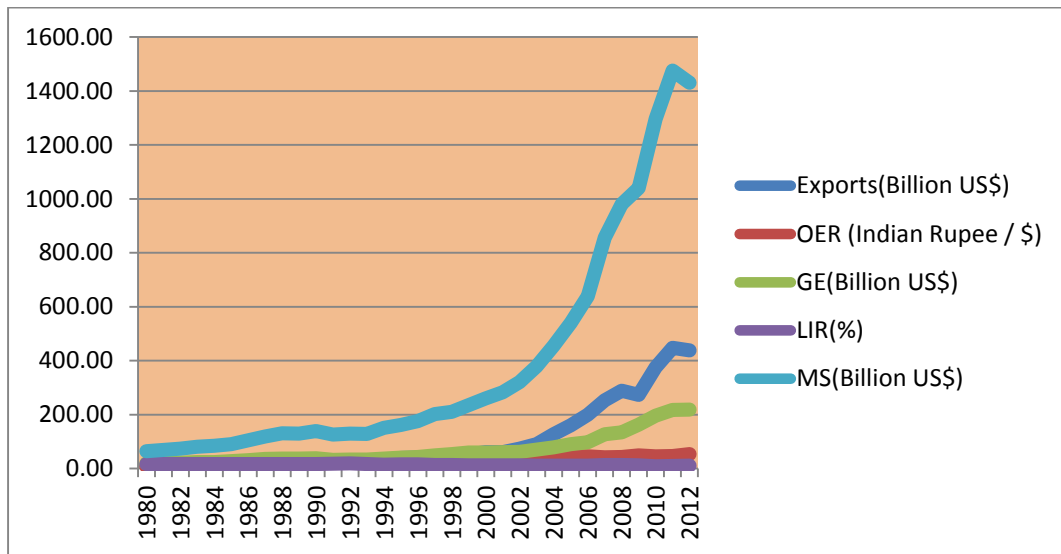
MS, LIR, GE, OER and Exports of Pakistan



The above graph shows dramatic increase in the official exchange rate after 1994 till 2012. Exports of the country continuously grew from 1980 till 2001. During 2001 to 2006 the exports remain stable, after 2006 till 2012 exports of Pakistan sharply improve to 28.83 billion US dollar.

FIGURE 3

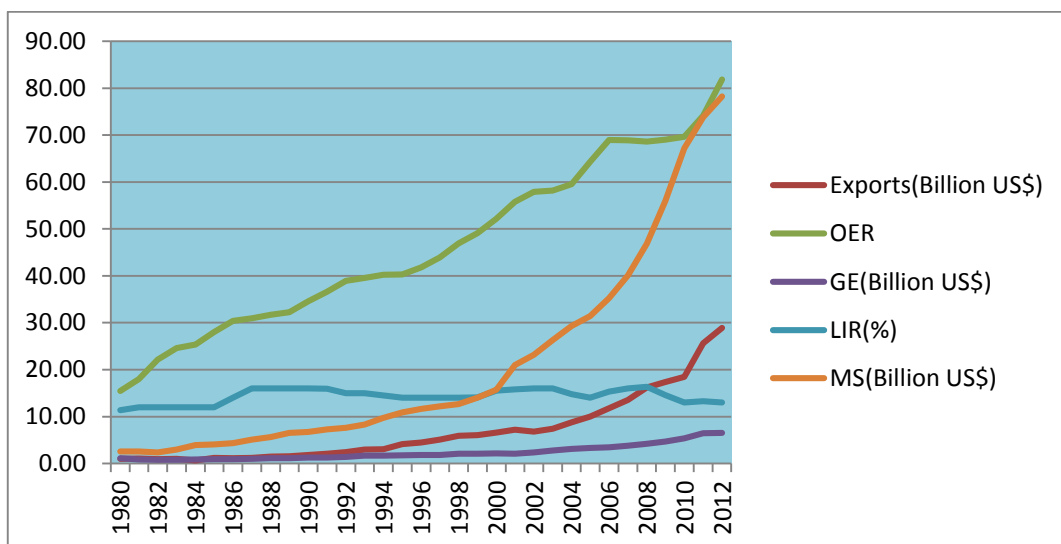
MS, LIR, GE, OER and Exports of India



The above graph indicates that exports of the India was continuously improves with the passage of time till 2010. The Indian export in 1980 was about 11.44 billion US dollar and exports improve to 438.85 billion US dollar in 2012.

FIGURE 4

MS, LIR, GE, OER and Exports of Bangladesh



The above graph shows that money supply of the Bangladesh increases with dramatic pace after the year of 2000. With the improve of government expenditure, lending interest

rate, money supply and the official exchange rate, the exports of the country also shows an upward trend.

DATA ANALYSIS

Multiple regression models have been used to analyze the effect of real exchange rate, lending interest rate, real government expenditure and money supply on the export of three major countries of South Asian.

The model show that 98 percent variation in the export explained by real exchange rate, money supply, real government expenditure and lending interest rate. Real exchange rate and money supply have a positive and highly significant effect on export of Pakistan, where as real government expenditure has a weaker significant positive effect.

TABLE 2

Export Analysis of Pakistan: Model Summary

	β	Sig.	Lower Bound	Upper Bound
Constant	1.07	0.28	-0.96	3.11
RER	0.05	0.00	0.02	0.07
LIR	-0.16	0.03	-0.31	-0.01
RGE	0.10	0.19	-0.05	0.26
MS	0.24	0.00	0.20	0.29
R 0.992			R ² 0.983	
F Sig. 0.000			Durbin-Watson 1.70	

Note. Here; “Sig.” means significance, “ β ” means values of betas.

$$\text{Export} = 1.076 + 0.051 \text{ RER} - 0.165 \text{ LIR} + 0.106 \text{ RGE} + 0.249 \text{ MS}$$

Lending interest rate has a significant negative impact on the export. If one percent increase in lending interest rate will resulted that 0.165 decrease in the export where as one unit increased in real exchange rate will increase the export by 0.051 times. As one dollar increase in money supply and real government expenditure will increase the export by 0.106 and .249 dollar respectively.

TABLE 3

Export Analysis of India: Model Summary

	β	Sig.	Lower Bound	Upper Bound
Constant	42.88	0.26	-34.21	119.96
RER	-0.78	0.05	-1.60	0.02
LIR	-1.43	0.34	-4.50	1.63
RGE	-0.29	0.07	-0.63	0.03
MS	0.34	0.00	0.30	0.37
R	0.998		R ² 0.996	
F Sig.	0.000		Durbin-Watson 1.96	

Note. Here; "Sig." means significance, " β " means values of betas.

$$\text{Export} = 42.880 - 0.787\text{RER} - 1.434 \text{LIR} - 0.297 \text{RGE} + 0.344 \text{MS}$$

As the all significant variables remain unchanged the export will increase by 42.88 billion dollar. Real exchange rate and real government expenditure have a strong negative effect on export of India; whereas lending interest rate has a weaker significant negative effect. Money supply has a positive significant effect on the export. As lending interest rate increased by one percent it will decrease the export by 1.43 times. With the increase by one dollar in real government expenditure will decrease by 0.297 dollar in the export. The export will increased by 0.344 times as the money supply increased by one unit.

TABLE 4

Export Analysis of Bangladesh: Model Summary

	β	Sig.	Lower Bound	Upper Bound
Constant	8.21	0.18	-4.08	20.50
RER	0.13	0.00	0.05	0.22
LIR	-0.44	0.05	-0.91	0.01
RGE	-1.54	0.31	-4.62	1.54
MS	0.17	0.00	0.06	0.29
R	0.992		R ² 0.984	
F Sig.	0.000		Durbin-Watson 1.61	

Note. Here; "Sig." means significance, " β " means values of betas.

$$\text{Export} = 8.213 + 0.139 \text{RER} - 0.448 \text{LIR} - 1.541 \text{RGE} + 0.177 \text{MS}$$

The value of F is 0.000 which is less than the 0.05. It means that this model is overall good. The results revealed that the money supply and real exchange rate have a strong positive effect on the export of Bangladesh. Furthermore, Bangladesh's total exports have a positive and statically significance relationship with money supply and exchange rate. The value of R-square shows that 98 % variation in dependent variables has explains by the selected independent variables. As money supply increase by one unit it improves the export by 0.177 times. The export will increase by 0.139 times with one percent increase in real exchange rate. Lending interest rate has a negative effect on the export by 0.448 times. Real government expenditure has an insignificant impact on the export.

CONCLUSIONS AND RECOMMENDATIONS

The aim of this study is to analyze the effect of currency devaluation on exports of three major economies of South Asian (i.e., Pakistan, Bangladesh, and India) over the period 1980 to 2012. Study concludes that currency devaluation encourages exports of Pakistan and Bangladesh. Lending interest rate significant negative effect in Pakistan and Bangladesh but insignificant in India. Government expenditure encouraged the export of Pakistan while not significant in Bangladesh while depress in India. Money supply also enhanced the export of Pakistan, Bangladesh, and India.

Concerned Governments should ensure that recurring expenditure and capital expenditure are properly managed in such a way which enhance the production capacity of the nations and raise the economic growth. Secondly, should provide the facilities to public and private investment in productive activities to increase the production of goods and service and to control the cost of conducting business as well as to increase the profit. Countries should control the import of consumer goods, encourage the export to increase exports volume and should introduce import quotas for the improvement of gross domestic product. Finally, concerned authorities should manage and use the resources properly in such a way which may assist to develop the economies.

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