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Impact of Exchange Rate Explosive Nature on Trade: Focusing Pakistan

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Abstract
The purpose of this study is to measure the effect of exchange rate instability on the Pakistan Trading activities. This study measure the instability of exchange rate and its effects on trade with the help of regression model. The time series data from the year 1980-2013 has been analyzed. The results shows that exchange rate instability has positive direct relation with the trade. It also shows that rely only on one vehicle currency (USD) has adverse impact on trade as well as on investors decision making power. Traders can protect the economy from the adverse affects of exchange rate instability by trading with the developing countries with low income and by using the policy to not rely only on one currency but to use different currencies while trading with other countries. So for that Pakistan has to show more interest in trading with developing countries to protect country from future exchange rate effects.

Introduction

Theoretical background:

Highly increase in the exchange rate volatility force the policy maker to think about and to find out actual reasons behind this and to protect the future from exchange rate affects. A number of previous studies exists showing that the impact of exchange rate volatility on trade. Chowdhury (1993), Arize (1995), Arize *et al.* (2000) analyzed that exchange rate instability affects the trade of any economy negatively.

Exchange rate volatility can influence performance of any country both in long and short run. In long-run it affects the decision regarding investment. In short-run local investors can be effected from this volatility and also it can effect the balance of payment.

For developing countries it is problematic situation when along with the increase in exchange rate volatility other external problems and shocks occurs. In turn this problematic situation leads to imbalance in the international price that are paid for commodities and also this exchange rate volatility affect the smooth functioning of exchange rate and for developing countries it leads to home currency crises and crashes in stock market as well(Hernández & Schmidt-Hebbel, 2002).And in turn these shocks leads to “speculation”.

Doganlar (2002) analyzed the impact of exchange rate instability on the exports of Asian countries. The study shows that exchange rate volatility have direct impact on trade activities.

In any economy there are both investors risk taker and risk averter. Risk taker always promote and in favor of volatile exchange rate to maximize their profit while risk averter always favor where the expected exchange rate is lower then the actual or the real one.

With the variable exchange rate investors avoid to invest in that specific country this in turn affect the smooth functioning of trade because investors favor to invest in foreign currency to save their future return ultimately this will lead the home currency value to be low and also has adverse affects on trade.

Problem statement:

The above discussion revealed that exchange rate volatility can create severe disturbance for any economy .And like other developing countries recently Pakistan also facing this problem severely. So intention is to investigate that how volatility of exchange rate affecting the trade(export & import) in the economy of Pakistan and in which direction.

Research Gap:

No doubt many studies conducted in the past such as but previous studies did not take a single variable trade(import, export and BOP) i.e Goldberg and Klein (1997), (Ahmad and Ali, 1999) and Ritten berg (1993) .They take in to account several other macroeconomic variables also i.e GDP, inflation to check the affect of exchange rate volatility on these variables as well as trade. But this study is going to capture the recent exchange rate fluctuations which provides substantial gap for research.

Significance of study

This study is an effort and a temporal contribution with respect to Pakistan to investigate that either exchange rate volatility effects the trade in case of Pakistan with if so, then in which extent. This is an important study because environment of Pakistan is more volatile and in the recent time 2013-2014 it is revealed that Pakistani has been devalued. So this is an important study which gives direction to the policy makers to how they set the future strategies to determine the exchange rate in the economy of Pakistan. And also how they improve their strategies to save the economy from the threat of exchange rate instability.

Study of Kumar and Dhawan (1991) on the effect of exchange rate volatility on Pakistan exports shows that exchange rate instability affect exports negatively. Study of Arize et al. (1998) also shows that there is a strong direct relationship between exchange rate and trade.

Research Objectives

The main objective of this study is to analyze the impact of "exchange rate on the trade in Pakistan". The specific objectives for this paper are to:

- To investigate the impact of exchange rate instability on trade
- To check the reasons behind the exchange rate volatility

Research Questions

- In which direction exchange rate instability affects trade?
- How exchange rate volatility affect investors decision making?
- How exchange rate volatility affects the home currency value?
- How external shocks affects exchange rate as well as investors decision making?

The paper follows following sequence: Section II the literature regarding trade and exchange rate instability. In section III data and methodology discussed. Section IV, describe the overall result and their interpretation. Main conclusions and policy implications are discussed in section V. And at last section VI describe further future direction.

Literature Review:

The topic of exchange rate is very much important as said by economist especially for the under developed countries like Pakistan due to high volatility in exchange rate. Many of the researchers analyzed the impact of exchange rate instability on trade to find out relation among them.

Rogoff (1998) analyzed that exchange rate volatility has adverse impact on the trade of any economy. Study of [Arize (1996,1998)] shows that exchange rate volatility have negative effect on trade. Hooper and Kohlhagen (1978) revealed that there is a negative relation between exchange rate instability and trade. Study of Suss and Layni (1986) indicate that exchange rate variability affects the home currency value as well as prices of both exports and imports, which creates huge problem for any economy.

Exchange rate variability affects the prices of goods domestically as well as internationally and as a result prices become high because of unexpected fluctuation in exchange rate stated by Maskus (1986).Due to an increase in volatility, a risk avoider prefer low returns and invest in that activities which provide a known return rather than investing in the activities having unknown risk. Study of Rangrajan (1986) indicate that volatility of exchange rate can affect adversely the smooth functioning of the trade.

It is observed by Broll and Eckwert (1999) that when exchange rate volatility occurs at its peak risk takers try their fully to avail that opportunity by investing in risky activities for higher future gain. It is also find by Rose (2000) that there is negative relationship between trade and exchange rate volatility. Côté (1994) revealed that exchange rate variability has negative effects on trade. [Edwards (1987] observed that too much variability in exchange rate has negative effect on international trade, which In turn badly affect the decisional activities regarding investment. Baldwin and Krugman (1989) stated that the fluctuation in the exchange rate have positive influence on the value of currency but in turn it adversely affects the trade.

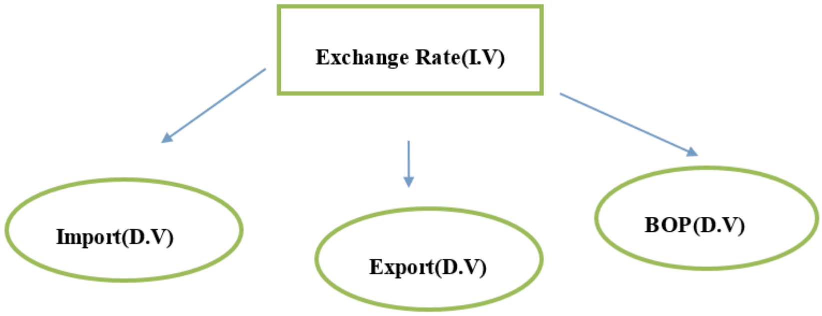
In Pakistani context the study of Mustafa and Nishat (2004) analyze the relationship between exchange rate volatility and trade and the study finds that exchange rate volatility has a negative affect on trade. Study of Grauwe (1998) revealed that there is a negative relationship between exchange rate variability and trade. Akhtar and Hilton (1984) provide evidence that exchange rate variability influence trade negatively. Bautista (1987) observed that when there is a decrease in the exchange rate ultimately the prices of all the exportable as well as importable goods decrease.

Exchange rate volatility gives opportunity to risk takers to invest in the risky activities for higher future gain which in turn increase profitability factor. But an excessive increase in the exchange rate volatility creates problematic situation for any economy. The effect of exchange rate instability on trade highly depends on risk taking capacity of the firm [Broll and Eckwert (1999)].

Methodology:

This part describes the basic model and the data used for this model and also the whole process used to test all the variables.

The Basic Models:
The effect of exchange rate instability on trade is measured by using the data of export, import and balance of payment.



Source of data
The data used in this research is basically secondary in nature. Data for this research is collected from the website. This research used the data of thirty two years from 1980 to 2013 on yearly basis. All the results given below are obtained by using Microsoft excel ,E-views and IBM SPSS Statistics.

Variables
This research basically used four variable in which three are dependent variables that are Balance of payment, Import and export data and one is independent variable that is exchange rate.

Model and estimation of results
This study basically used the regression model to investigate the real relationship between the dependent and independent variables that are used in this study. This research has focused on the factors i.e. the Exchange rate, Export, import and balance of payment. Exchange rate volatility can influence performance of any country both in long and short run. So in this study exchange rate is the main variable to be evaluated with respect to its impact on the trade of Pakistan.
The regression model is as under:

$$\mathbf{EXP=\alpha+ \beta\ (ER)+ \varepsilon}$$
$$\mathbf{IMP=\alpha+ \beta\ (ER)+ \varepsilon}$$
$$\mathbf{BOP=\alpha+ \beta\ (ER)+ \varepsilon}$$

Where EXP represents export of Pakistan (LCU per US$, period average),ER represents exchange rate of Pakistan (LCU per US$, period average),IMP represents import of Pakistan (LCU per US$, period average) and BOP represents balance of payment of Pakistan.

Table 1 shows the descriptive statistics of all the variables including export, import and balance of payment the dependent variables and exchange rate the independent variable.

Table 1: Descriptive Statistics of all Variables

	Exc.	exp	imp	BOP
Mean	1.5409	1.9699	1.8702	-.0998
Median	1.5856	1.9987	1.9198	-.0847
Ste Dev.	.30607	1.6837	.28906	.14249
Skewness	-.260	-.227	-.216	-.241
Kurtosis	-1.212	-.062	-1.226	-.857

Table 2: Determinants of Trade

	Imp	exp	BOP
F statistics	24.484	9.336	47.826
Sig.	.000	.005	.000
DW Statistic	.544	.505	.814
R2	.339	.226	.599
Adj.R2	.416	.202	.587
t statistics	4.948	11.666	6.916
Beta	.658	.475	.774
Coefficient	.261	.622	.360

The value of co efficient for import is (0.261) that is different from 0 because its p-value is 0.000, which is smaller than 0. The value of coefficient for export (.622) is also different from 0 because its p-value is 0.05, which is equal to 0.05. The coefficient for BOP (0.360) is not statistically significantly different from 0 because its p-value is definitely larger than 0.05.

The value of Durbin-Waston for all variables are close to 0 indicates strong positive correlation. The value of R2 of import indicates that round about 40% of the difference or change in import can be predicted from the variable exchange rate. The value of R2 of export indicates that round about 30% of the change in export can be predicted from the variable exchange rate. The value of R2 of BOP indicates that 60% of the change in BOP can be predicted from the variable exchange rate.

The value of beta for the import indicates that with the one unit increase in exchange rate, a .658 unit increase in import. And with the one unit increase in exchange rate, a .475 unit increase in export .And the value of beta for BOP indicates that with the 1 unit increase in exchange rate, a .774 unit increase in BOP. So all this indicates direct relationship between independent and dependent variables.

The F value of import is 24.484.The p-value is very small (0.000), means the independent variables that is exchange rate significantly predict the dependent variable import. The F value for export is 9.336 and its p-value value is equal to(0.005), means the independent variables that is exchange rate significantly predict the dependent variable export. The F value for BOP is 47.826 and its related p-value value is very small(0.000), means the independent variables that is exchange rate significantly predict the dependent variable BOP.

Conclusion and Policy Implications:

The results of this study imply that it creates serious problem for the developing countries like Pakistan to depend only on one currency (USD) and use it as a vehicle currency for trade because it creates lots of problems particularly for imports (Arize,1998) . The study reveals that exchange rate variability has direct impact on trade. In the whole results shows that traders can avoid the economy from the adverse affects of exchange rate volatility by trading with the developing countries and not rely only on one currency but to explore the trade in other countries with the currency of that specific country and it is needed by the policy makers to avail this opportunity to move on with different currencies while trading.

Direction for Further Research:

This study investigate the impact of exchange rate volatility on trade by using yearly data of 32 years. Exchange rate is the key factor that create massive options for the investors to invest in the trading activities for higher future gain. In this study only three main variables are studied import, export and BOP hence there is a ground for further research to investigate the impact of exchange rate volatility on trade along with many other variables. And this study basically based on the yearly data so it also a chance for further research considering weekly or daily data.

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