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The Consequences of Exchange Rate on Trade: A Case Study of Pakistan

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Abstract

This paper attempted to explain the impact of exchange rate volatility on the trade balance that also has a strong bearing impact on the economic growth. This study based on yearly time series data from 1980 to 2014. The preferred variables for the present study are trade balance, Gross Domestic product, investment, Government expenditure and exchange rate in which the trade balance is regressand followed by the regressors. Author used the ordinary least square (OLS) regression technique for the analysis after checking the stationarity of the data series by using augmented dickey fuller (ADF) tests of stationarity. The empirical results indicate the direct association among the Exchange rate and the trade balance. Results provide evidence that in the case of Pakistan as exchange rate goes up the export performance of the country improve in the sense that it increases exports more and import less of the goods.

1.0 Introduction

Trade balance always equal to the payment received for exports from the other nations minus the payments made to foreigners for the imports. Where, the exports are the amount of goods which are supplied to out of the country and the imports are that goods that are demanded by the domestic country. Goods and services that are not produced by the domestic nations are imported from the foreigners to fulfill the demand of the domestic consumers and producers. And the goods which are in excess of domestic demand can be exported to the other nations that have a demand for our exports.

This trade takes place between the two countries from which each one has a specific currency. Through exchange rate of different currencies trade can take place among these nations. As most of the nations of the world are engaged in trade relations with one another same the

Pakistan has also trade relations with most of the countries just like Saudi Arabia, Japan, Iran, United States, United Kingdom, France, and China etc. For trade, each nation has its own local currency so that each country has to give the exporter country in its local or home notes. This was possible through exchange rate so exchange rate has a big source to bring contact on trade between different trade countries.

In the 1929, world suffer in the great depression and after it the 2nd world war completely disturb the economies all over the world. There was a need to make some institution with the aim of reconstruction of economies worldwide, so, in the mid of 20th centaury there were many institution start working on international trade amongst the most important are the Breton wood institutions. World's nations agreed on the agreement which given the name of general agreement on trade and tariff (GATT). World trade organization (WTO) is the

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new form of GATT which became operational in 1995. World trade organization, in the current circumstances covered the trade all over the world. The aim of these agreements is the trade liberalization in this way resources are freely and easily exchanged among the nation and the welfare of the world increase.

Because as the trade increase it lead to increase in GDP which is the market value of all goods and services produced in a country in a specific time usually one year. As GDP increase, it means that the increase in the efficiency of factor of production and also increase in the per capita income which leads to improve the living standard of the individuals of the country. The need for international trade is due to its important effects on nation welfare because each country in the world is not specialized in every field. For the development it is be obliged to see the other country. International trade not only increases the wealth but also increases the education level, increase the health standard and remove the poverty of the people.

Due to increase in per capita income of the people we observe a increase in the purchasing power of people that played a vital role for increasing the demand for imports. As being a developing nation the domestic production that we also exports consists on the cheaper commodities as textile, cotton and very tiny amount of, furnished products. At the same time as being a developing country Pakistan imports consist on lavishness commodities, oil, petroleum and huge quantity of electronics goods. In all situations Pakistan has faced trade deficit because payments for imports are greater than receipts for exports.

Ozark (1973) analyzed the impact of exchange rate uncertainty on trade and found that the exchange rate has negative impact on trade balance. Brendan and cotter (1985) examined that exchange rate uncertainty and exports have positive relation. Oskooee (1993) observed the inverse association among the exchange rate uncertainty and the trade balance in developing countries. Cartel *et al.* (2004) examined a negative impact of exchange rate on trade. Arize *et al.*(2005) suggested the negative and significant impact of exchange rate stability on exports demand.

This study analyzes the consequences of exchange rateon trade in Pakistan. This empirical analysis is based on yearly time series data for the period 1980 to 2014. To see the above situation the chosen variables for the study are

trade balance as a regressand and the agriculture growth rate, investment, Government expenditure , final consumption of consumers and exchange rate as regressors.

2.0 Review of Literature

Johannsen and Martinez (1973) used the econometrics techniques of Standard Gravity approach and analyzed the exchange rate and two margins of trade. The cross sectional data was used to run the estimation. The study has taken different variables as Gross domestic product, NEER (nominal effective exchange rate), corruption, inverse mills ratio and REER (real effective exchange rate) to see the relationship. The result of paper showed positive and significant of exchange rate volatility on trade variation in Nigeria.

Bredin and Cotter (1985) observed nominal and real exchange rate instability and its effect on trade balance. The time series data was used for the analysis. Data was taken for the period 1970 to 2002 and used two equations separately. The main objective of this paper was to show relationship between exports and exchange rate volatility.

Oskooee (1993) explored the association among the exchange rate uncertainty and trade for the third world countries. The author used the cross sectional data and the panel Co integrating technique was employed for the analysis. The analysis has been done for 6 less developing countries. The results of this study concluded the negative and significant impact of uncertainty of exchange rate trade balance.

Clark *et al.* (2004) studied exchange rate volatility and trade flows. This study took data for 1975 to 2000. This study used both real and nominal exchange rates for estimation. The results of this study showed the exchange rate volatility had a negative and significant effect on trade balance.

Arize *et al.* (2005) stated that the impact of real exchange rate volatility on export flow. The cross sectional data was used in the study for the econometric analysis for the period of 1973 to 1996. Multivariate procedure was used to get the co-integration and the error correction technique was employed to find the dynamic estimation of each country in short run. The results showed that exchange rate volatility negatively affect the export demand both in short and long run.

Oskooee and Wang (2008) by using the cross sectional data this empirical research investigated that the impact of exchange rate uncertainty on traded goods between china and U.S. The findings of this study showed that exchange rate uncertainty has a strong on the semi industries. U.S imports from China had negatively related to exchange rate volatility even as the majority of China exports were positively interrelated to exchange rate volatility. A positive relationship was observed between exchange rate uncertainty and imports.

Hayakawa and Kimura (2008) examined the effect of exchange rate volatility on international trade in East Asia. The cross sectional data have been utilized to run the Gravity equation model on selected variables. The result of this study showed that intra East Asia trade was depressed really compared to other regions of East Asia. Exchange rate volatility inversely affects the trade.

Ozturk(2009) examined the impact of exchange rate instability on trade. Many studies had exchange rate in stability affectson trade balance. In many cases, analysis estimation had different and complex to compare toward sample size, model specification and measures of risk. Many studies prove that exchange rate volatility had downbeat forced on trade balance.

Sekantsi (2009) analyzed the impact of real exchange rate uncertainty on the South African exports. He took the data for the period 1995 to 2009 and used the Generalized Auto Regressive Conditional Heteroskedasticity (GARCH) model for estimation of results. Researchers also estimated the co integration among the variables and then the long run coefficients for them. They had found negative relationship among the exchange rate improbability and South African exports.

Alam and Ahmad(2011) analyzed the exchange rate volatility and Pakistan bilateral imports. They took data series from 1982 to 2008 and the ARDL model was employed to run the estimation. They also incorporated the imports from UK, USA, Japan, UAE, Saudi Arabia, Germany and Kuwait. The results demonstrated that in the long run, exchange rate volatility had a negative and statistically significant impact on Pakistan's imports from UK.

Auboin and Ruta (2011) evaluated the affiliation among international trade and exchange rate and currencies. The analysis has been done in two parts, first was to examine the effect of exchange rate volatility on international trade and second to investigate the effect of currencies on international trade. The final result concluded that exchange rate volatility had an adverse impact on trade flows.

Mohammad *et al*. (2011) inspected the impact of exchange rate uncertainty on import. They obtained time series data from 1959 to 2009.The TARCH approach was used for estimation. The final results obtained illustrated an inverse association of exchange rate volatility with imports.

The relationship between real import demand, real national income, and real exchange rate were negatively and significant effect of exchange rate uncertainty. Iran's imports, real national income had positively impact on import demand; Iran's real imports were negative and significant impact on exchange rate.

Mustafa and Nishat (2012) focused on the association of exchange rate and export growth in Pakistan. The panel data of different countries has been taken for the period 1991 to 2012 to run the estimation. The main objective behind the research was to check the effect of exchange rate uncertainty on export growth between Pakistan and other trading partners. Exchange rate uncertainty had inverse and significant impacts on export growth in both short and long run.

Phan and jeong (2015) used the panel data and analyzed the consequence of real exchange rate and domestic country and overseas income on two-sided trade equilibrium for Vietnam and the sixteen trade associates in excess of the period 1999-2012. The analysis has been done by using the panel co-integration techniques as the DOLS and FMOLS to inspect the long-run association among the real exchange rate and bilateral trade. The real exchange rate and the income of the country had an inverse relation with trade balance and the opposite is true in the case of foreign income.

3.0 Data and Methodology

3.1 Profile of the study area

Pakistan is "a developing country with almost 184.35 million populations which is increasing rapidly at 2.0 percent growth rate. It is the responsibility of country to provide all basic necessities and facilities to this

population. When the basic needs like proper calorie intake, health facilities, educational opportunities, and shelter are not fulfilled then many socio economic problems arise like poverty."

3.2 Data sources

The data utilized in present analysis covers a 35-year period (35 annual observations) opening from 1980 to 2014. The foundation of the data comprise a variety of issues of Economic Survey available by the Government of Pakistan, Ministry of Finance, state bank of Pakistan and the various indicators of world development. The preferred variables for the study are trade balance as a regressand and the agriculture growth rate, investment, Government expenditure, final consumption and exchange rate as regressors.

| Variables	Description of variables
TB	Trade balance
AGRG	Agriculture growth rate
EXR	Exchange rate
INV	Investment
FCON	Final consumption
GE	Government expenditure

Table 1:Description of the variables

3.3 Description of Variables

3.3.1 Trade Balance

Trade balance is equal to imports minus exports.The difference between a country's imports and its exports is known as the trade balance. Balance of trade is the major section of a country's balance of payments. Imports, foreign aid, domestic spending abroad and domestic investments abroad are the debit items and the exports, foreign spending in the domestic economy and foreign investments in the domestic economy are the credit items. If imports are greater than exports a country has to face a trade deficit and the inverse is true if the exports greater than imports the trade surplus will exist. And the

following figure shows the different trends of trade balance of Pakistan.
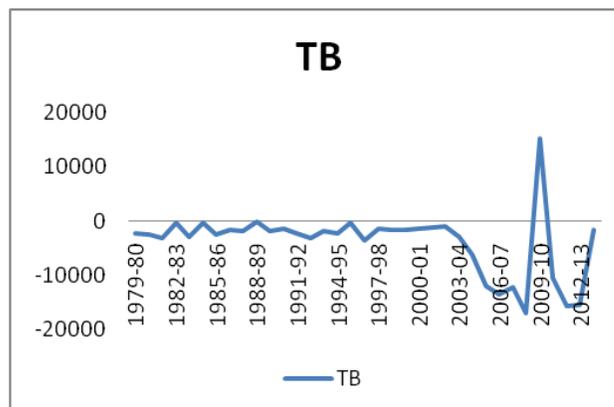

3.3.2 Investment

An asset that is obtained with the anticipation so as to make profits in the future is considered as investment. In an economic wisdom "an investment is the purchase of goods that are not consumed today but are used in the future to create wealth". In finance, "an investment is a monetary asset purchased with the idea that the asset will provide income in the future or appreciate and be sold at a higher price". The following figure shows the trends in investment form 1980-2014.
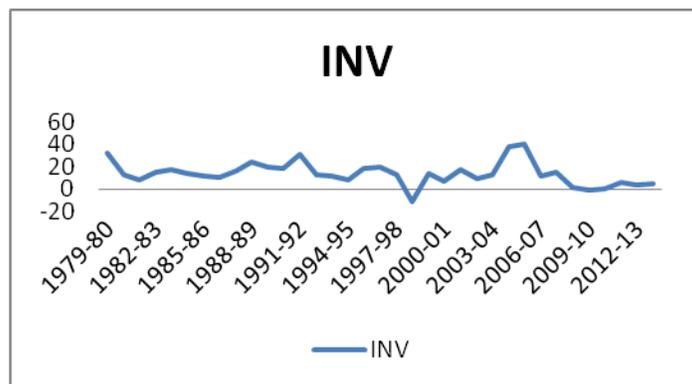

3.3.3 Agriculture growth rate (AGRG)

Agriculture sector is the key important sector in determining the exports volume of the Pakistan's exports. Pakistan's exportable products are basically linked with the growth of the agriculture sector. As the agriculture

growth rate increases the trade balances of the country tend to improves. And the following figure shows the different trends of agriculture growth rate in Pakistan.


AGRIG
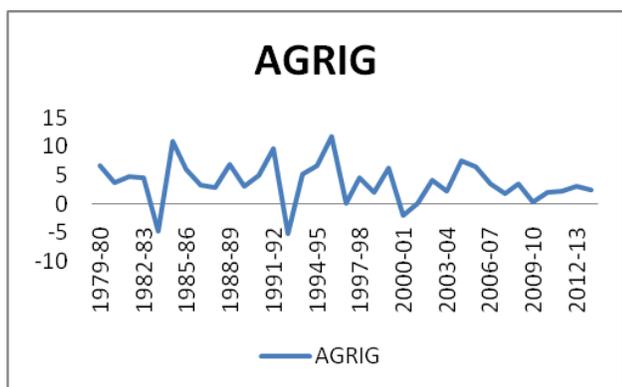
3.3.4 Exchange Rate (EXR)

Exchange rate is the rate at which one currency can be converted to another currency. One currency's value in terms of another currency is called the exchange rate. As exchange rate varies over time it also cast its impact on trade balance of a country. The following figure demonstrates the different tendency of exchange rates in Pakistan.

EXR
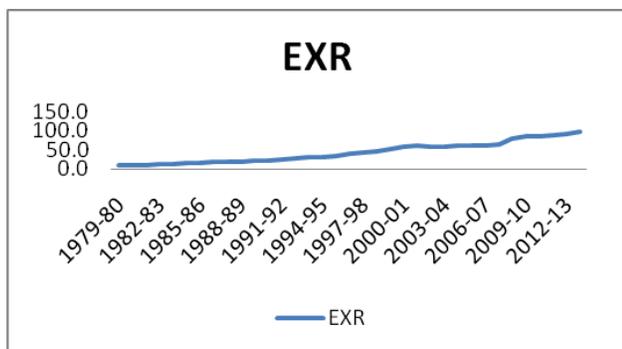
3.3.5 Government Expenditures (GE)

Govt. expenditures made on different goods to promote trade also have an important role in determining the trade balance of any country. And the following figure illustrates the special trends of govt. expenditures in Pakistan to promote trade.

GE
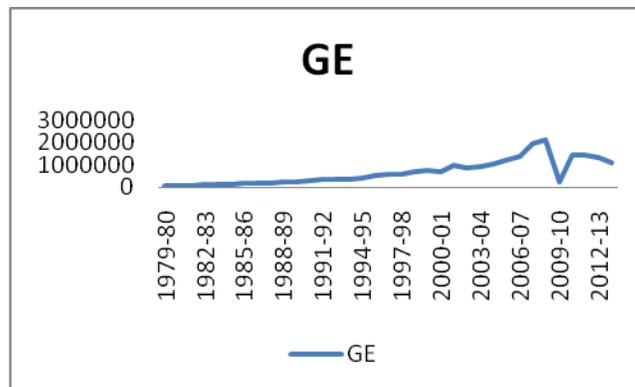
3.3.6 Final Consumption (FCON)

The final consumption that consumers consume on the traded goods is also the most important determinant of the trade balance.

Variables	Description of variables	Expected sign
TB	Trade balance	-----
AGRG	Agriculture growth rate	Positive
EXR	Exchange rate	Positive
INV	Investment	Positive
GE	Government expenditure	Negative
FCON	Final consumption	Positive

4.0 Results and discussion

Econometric analysis is helpful in understanding the relationship among the different variables. Econometric analysis also shows the impact of different explanatory variables and how these variables affect the dependant variables. In the present chapter we will discuss the elementary and the econometric analysis of the data. The descriptive analysis shows the mean, median, maximum

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value minimum value of the data etc. and in the econometric analysis we will analyse the impact of different variables on trade balance.

4.1 The unit root analysis of the data

In statistics and econometrics an Augmented Dickey Fuller test (ADF) is a test for a unit root in a time series data sample. Dickey and Fuller extended their test procedure suggesting an augmented version of the test which includes the extra lagged terms of the dependent variable in order to eliminate the autocorrelation. The lag length of these extra terms is either determined by the Akaike Information Criteria (AIC) or Schwartz Bayesian Criteria (SBC) or by LM test.

Table:3 unit root results based on ADF (augmented dickey fuller)

Variables	ADF Test Results	Trend	Order of integration
TB	-4.814511***	intercept	I(0)
EXR	-3.838909**	intercept and linear trend	I(0)
AGRIG	-7.183324***	intercept	I(0)
INV	-4.014803	intercept	I(0)
FCON	-3.031994*	intercept and linear trend	I(0)
GE	-1.8.887434	with no intercept and trend	I(0)

Source: estimation based on authors own calculations.

Note: ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent

The above table 1 shows the results of the ADF test that indicate that all variables are stationary at level. The

results of ADF unit root test in the presence of intercept and, intercept and trend reported in Table 1 suggest that TB, AGRIG and INV are stationary at level in the presence of intercept. EXR and FCON are stationary at level in the presence of intercept and trend and the GE is stationary with no intercept and trend. The findings of the study provide the justification OLS Approach.

4.2 Correlation analysis

Correlation coefficients show the degree of linear relationship among two variables. A correlation matrix is a table which shows all the possible correlation coefficients between a set of variables. Correlation matrix of the variables of our model is given below which shows all the possible association between the sets of variables.

Table 4: correlation analysis of the data

	TB	EXR	AGRIG	INV	FCON	GE
TB	1.0000					
EXR	-0.1883	1.0000				
AGRIG	-0.0399	-0.1900	1.0000			
INV	-0.2280	-0.1942	0.3534	1.0000		
FCON	-0.2962	0.8944	-0.1359	-0.1391	1.0000	
GE	-0.7034	0.7985	-0.0787	-0.0494	0.8038	1.0000

(Estimation is done by the authors by using e-views 8)

This table shows the correlation of different variables that is the degree of association between them. The results show that there is negative association between trade balance and the exchange rate and the degree of association is -0.18 which shows a strong weak association between these two variables.The degree of association between the trade balance and the agriculture growth rate, investment final consumption and the govt expenditure is negativeand the value of associations are -0.039, -0.22, -0.296 and 0.70 respectively. Its mean that

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any increase in these variables lead to decrease the value of trade balance. The exchange rate and the final consumption are positively related with a coefficient of 0.89. The exchange rate is negatively related to investment and agriculture growth rate with the value of "r" -0.194 and -0.190 respectively. The investment is positively related with agriculture growth arte with the correlation coefficient 0.35. The final consumption and the govt expenditures also have direct relationship with the coefficient of correlation 0.80.

4.3 Descriptive analysis of the data

Elementary analysis of the data performs a very significant in overall understanding of the data. It sets a mind of the researcher and the viewers for the further explanations of the econometric analysis of the data. This gives the uncomplicated and the simple summaries of the data. It is used for the quantitative analysis of the data. The descriptive statistics of our model concerned as following

Table: 5 Descriptive analyses of the data

	Mean	Median	Std. Dev.	Skewness	Kurtosis
TB	-2930.4	-1922	5364.752	0.128004	7.141306
EXR	37.05161	30.9	21.97433	0.393472	1.891643
AGRIG	3.854839	4.1	3.877012	-0.3753	3.403514
INV	15.25516	14.04	10.5092	0.319928	4.17807
FCON	60078.22	51035.73	38371.73	1.348187	3.723848
GE	564033.5	364321	526275.2	1.412862	4.525134

(Estimation is done by the authors by using e-views 8)

In the above table the mean, medial, st.devskewness and kurtosis of the data is presented. The 2nd column represents the mean the 3rd column embodied the median. In the 4th column the st.dev is presented that followed by the skewness and the kurtosis in the 5th and the 6th column of the table.

4.4 Econometric analysis of the data

Table 6: The ordinary least square estimates

Variables	Coefficient	t-Statistic	Prob.
Constant	-2729.51	-2.71595	0.0118
EXR	235.4634***	6.230926	0.0000
INV	-69.744**	-1.94772	0.0628
FCON	0.007061	0.331155	0.7433
GE	-0.01544***	-13.178	0.0000
AGRIG	109.7549	1.140806	0.2648

(Estimation is done by the authors by using e-views 8)
Note: *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent

The table no. 6 represents the ordinary least square results. We estimate the effect of different variables (independent variables) on trade balance (dependent variable).The results of the OLS regression model shows that trade balance are positively affected by the exchange rate. In the case of Pakistan we have observed that we can improve the export performance of the country as exchange rate goes up. In this situation Pakistan can export more and import less of the goods. Our data significantly explain that relationship and the coefficient of trade balance is significant at 1 percent. There is a negative relationship between the trade balance and the investment and the results are significant at 5 percent level of significance. This phenomenon support the fact that as investment rise trade balance tends to go towards the deficit. Ifwe will reduce our exports and the domestic industry will just fulfill the demand of the domestic households than trade balance will go to the deficit. It can also be said that in order to improve the production techniques the investors also imports the latest machines from abroad that will also cause a trade deficit. Same as the govt. expenditures also have an inverse impact on the trade balance. The result also shows that exchange rate and government expenditure are statistically significant to amplification trade balance. The final consumption and the agriculture growth rate also cast a positive impact on the trade balance. Being agriculture based economy we can improve our trade balance by enhancing the agriculture output. Most of the exportable commodities are from the agriculture sector that can contribute more towards exports and the balance of trade tend to improves.

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Table 7: Over All Summary of the above Model

R-Squared	Adjusted R-Squared	Prob(F-static)	Durbin Watson
89.6 %	87.6%	0.000000	2.16

This model explain that the value R^2 in above table is 89.6% which shows that 89.6 % percent variation in trade balance is due to variation in the agriculture growth rate, investment, Government expenditure , final consumption of consumers and exchange rate. F- Statistic is also highly significant which shows that the model is overall significant and good.

5.0 Conclusion and suggestions

This study demonstrates that the exchange rate contains various and special effects on the dissimilar economies like developed and under developed economies. In Pakistan we have check the impact of the agriculture growth rate, investment, Government expenditure, final consumption of consumers and exchange rate on the trade balance of Pakistan. The results of this regression shows that trade balance is positively affected by the exchange rate. In the case of Pakistan we have observed that we can improve the export performance of the country. If exchange rate goes up a country can export more and import less of the goods. Our data significantly explain this fact.The authors will suggest that the country likePakistan should focus more on the export promotion policies that can raise our exports and reduce the trade deficit. The core importance should also be given to the agriculture sector so, it can rise our exports and hence the trade balance. The growth of the industrial sector should also be given more importance that can help in reducing imports. If we focus more on the reduction of Investment goods as imports and form them in the home industry, in this way we improve the trade balance of the country.

References

Amin, T., (2000). Synergistic action of some indigenous plant materials with insecticides against *Tribolium castaneum* Herbst. Unpublished PhD Thesis, University of Rajshahi, *Bangladesh*. 255.

Angioni, A., Barra, A., Coroneo, V., Dessi S., & Cabras, P. (2006). Chemical composition, seasonal variability, and antifungal activity of *Lavandula stoechas* L. ssp. Stoechas essential oils from stem/leaves and flowers. *Journal of Agricultural and Food Chemistry*, *5*, 4364-4370.

Arthur, F. H., Throne, J. E., Simonaitis, R. A., & Zehner, J. M. (1990). Evaluation of chlorpyrifos–methyl plus methoprene as protectants of stored corn: Small bin tests. *Journal of Economic Entomology, 83*, 1114-1121.

Aftab,Z.andAurangzeb(2002).The Long-Run and Short-Run Impact of Exchange Rate Devaluation on Pakistan'sTrade Performance. *The Pakistan Development Review*, 41(3), 277-286.

Ahmad, E.and Ali, A.S. (1999).Exchange Rate and Inflation Dynamics. *The Pakistan Development Review*,38(3), 235-251.

Ahmed,S.,Ara,I.andHyder.K.(2006).How External Shocks and Exchange Rate Depreciation Affects Pakistan's Implication for Choice of an Exchange Rate Regime. *SBP Research Bulletin*, 1(2), 61-88.

Alam, S. and Ahmed, Q. M. (2010). Exchange Rate Volatility and Pakistan's Import Demand: An Application of Autoregressive Distributed Lag Model. *International Research Journal of Finance and Economics*, Issue 48, 7-22.

Azid,T.,Jamil,M.andKausar,A.(2005).ImpactofExchangeRateVo latilityonGrowthandEconomicPerformance:ACaseStudy of Pakistan(1973-2003).*Pakistan Development Review*,44,479-775.

Bayoumi, T. and Lipworth, G. (1998). Japanese Foreign Direct Investment and Regional Trade. *Journal of Asian Economics*, 9(4), 581-607.

Bhatti, R. H. (2001). Determining Pak Rupee Exchange Rate vis-à-visSix Currencies of the Industrial World: Some Evidence Based on National Flow Model. *Pakistan Development Review*, 40, 885-897.

Branson, W.H. and Buiter, W.H. (1983).Monetary and Fiscal Policy with Flexible Exchange Rate, InJ. S. Bhandri and B. H. Putnam (eds.)Economic Independence and Flexible Exchange Rate. MIT Press, Cambridge.

Caballew, Rand Corbo, V. (1988) Real Exchange Rate Uncertainty and Exports: Multi- country Empirical Evidence. [Discussion Paper]No.12/1988.DepartmentofEconomics, Columbia University.

Campa, J. and Goldberg, L.(2005).Exchange Rate Pass-through into Imports Prices. *The Review of Economic andStatistics*,87, 679-690.

Choudhri, E. and Hakura, D.(2006). Exchange Rate Pass-through to Domestic Prices: Does the Inflationary Environment Matter? *Journal of International Money and Finance*, 25, 614-639.

Devereux, M.B. and Yetman, J. (2010). Price Adjustment and Exchange Rate Pass- through. *Journal of International Money andFinance*.29(1), 181-200.

Dickey, D.A. and Fuller, W.A. (1981). The likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root. *Econometrica*, 49, 1057-1072.

Dickey,D.A.,Jansen,D.W.andFuller,W.A.(1991).A Primer on Cointegration with an Application to Money and Income. *Review Federal Reserve Bank of St.Louis*,73,58-78.

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Dornbusch, R.andWerner, A.(1994). Mexico: Stabilization Reforms and No-Growth. [Brookings Papers on Economic Activity], 1:253-315.

Engle, R.F. and Granger, C.W.J. (1987).Co-integration and Error Correction: Representation, Estimation and testing. *Econometrica*, 55, 251-276.

Goldberg, L. S. and Klein, M. W. (1997). Foreign Direct Investment, Trade and Real Exchange Rate, Linkage in Developing Countries. NBER [Working Paper] No.6344.

Javed, Z. H. and Farooq, M. (2009) Economic Growth and Exchange Rate Volatility in Case of Pakistan. *Pakistan Journal of Life and Social Sciences*, 7(2): 112-118.

Johansen,S.(1991).EstimationandHypothesisTestingofCointegrationVectorsin Gaussian Vector Autoregressive Models. *Econometrica*, 59, 1551-1580.

Johansen,S.(1995).Likelihood based Inference in Cointegrated Vector Autoregressive Models. Oxford University Press, NewYork.

Mundell, R. (1963). Capital Mobility and Stabilization Under Fixed and Flexible Exchange Rate. *Canadian Journal of Economics and Political Science*, 29, 475-485.

Mustafa, K. and Nishat, M.(2004).Volatility of Exchange Rate and Export Growth in Pakistan: Structure and Interdependence in Regional Markets. *Pakistan Development Review*, 43, 813-828.

Rebelo, S. and Vegh, C.A.(1995).Real Effects of Exchange Rate Based Stabilization: An Analysis of Competing Theories. NBER Macro Annual. National Bureauof Economic Research(NBER).Cambridge, M.A.

Stock,J.andWatson,M.(1988).Testing for Common Trends. *Journal of American Statistical Association*.83, 1097-1107.

Taylor, J. (2000). Low Inflation, Pass-through and the Perceiving Power of Firm. *European Economic Review*, 44, 1389-1408.

Xing,Y. (2006a).Why is China so Attractive for FDI: The Role of Exchange Rate. *China Economic Review*,17 (2), 198-209.

Xing,Y.(2006b).Exchange Rate Policy and the Relative Distribution of FDI among Host Countries. BOFIT [DiscussionPaper] No.15/2 006. Bank of Finland(BOFIT).

Xing, Y. and Wan, G. (2006). Exchange Rate and Competition for FDI in Asia. *The World Economy*, 29(4), 419-434.

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