Social Science and Humanities: Economics

IMPACT OF GDP, UNEMPLOYMENT AND CURRENT BALANCE ON EXCHANGE RATE: A STUDY FROM PAKISTAN

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http://dx.doi.org/10.26739/2573-5616-2018-3-2-5

Abstract: the purpose of this study is to find the empirical relationship between exchange rate and macroeconomic variable i.e Gross domestic product (GDP), Unemployment (UN) and Current balance account (CB). Annually data is used 1995 to 2016.To find this relationship the ordinary least square technique is used.This is also is used many researcher in literature. The results of this study areunemployment is positively significant at 1% level but current balance is negatively significant at 1% level and gross domestic product found no relationship with exchange rate. This study is help for domestic and foreigner investor and also policy maker for economy of Pakistan.

Key words: ordinary least square, Gross domestic product, Unemployment, Current Balance.

Introduction

Exchange rate is commonly well known as measure of international competitiveness. It's also known as index of competitiveness of currency for every country. It is also inverse relationship between this index and competitiveness exists. The value of this index in any country is less; the currency of this country will be more competitive. Macroeconomic variables like as interest rate, inflation rate, the balance of payment, GDP etc impact on exchange rate continuously. In this study I cover the analysis and investigation of some selected macro-economic variables which accept the impact on exchange volatility in Pakistan. Furthermore increase in flow of foreign direct investment and service such as banking, insurance, education are also effect on exchange rate. For this purposes first investigate the relationship and give a detail picture of variables is presented in this study. Instability in exchange rate of any country can effect the investment in this country adversely. Its create an uncertain environment for investment in country. So economist of this country required that resources of that country should be reallocated among various sectors of the economy of that country.

Exchange rate instability in developing countries like Pakistan is very universal. In Pakistan increase in exchange rate volatility is seen in the recent years. Its significant effects on economist decision. It is also effects on whose participate in foreign exchange market such as trader, investor and firms. It is important to known how exchange effected by the macroeconomic variables. Our paper takes analysis of exchange rate instability in Pakistan by possible macroeconomic variables well known in economic literature. It investigates which macroeconomic variables drive instability in foreign exchange market in Pakistan with the help of GARCH models.

Exchange Rate in Pakistan

For almost 35 years, exchange rate in Pakistan was maintained through a system of fixed. After its existence, the first link of Pakistani rupee was developed with pound due to being member of the authentic area. At a later stage, when role of USA became more noticeable in the world and much of country's fate was politically attached with USA, the currency of that country, dollar was accepted as an important currency in relation to currency of Pakistan.

The rupee was devalued inJune 1955 by 30 %first time. This devaluation of rupee in relation to pound excellentwas made so that it may be brought in line with currencies of other trading partners of Pakistan. Then the nominal exchange rate of Pakistan was kept fixed for about next seventeen years period. It fixed at Rs. 4.76 /1 US dollar. According to this the large number of analysts, there was over valuation of rupee during the time of these seventeen years. The rupee was devalued 58% in Zulfiqar Ali Bhutto. Change in exchange rate with US dollar in 1956 and second time in 1972. When change in exchange rate in second time the new exchange rate of Pak rupee with US dollar is Rs 9.90/1 US dollar. This new exchange rate continues of these two countries till January 1982. The government of Pakistan has changed this system of exchange rate with US dollar on recommendation of IMF. Through this system state bank Pakistan is responsible of exchange rate of Pakistani rupee on behalf of government of Pakistan. Under this system exchange rate is determined on the basis of weighted average of Pakistani currency with other major partners in trader.

The exchange rate history shows us continuously deprecation each year since 1983. It lose 17% in 1996 but gain almost 16% in 1998 over the previous year. In 2002 the Pakistani rupee has appreciated against the US dollar currency. The reasons behind this development in Pakistan since 1998.

GDP Growth Rate in Pakistan

Average annual economic growth rate of Pakistan remained 5.3% since 1947. But the growth rate of per capital GNP remained at level of 2.3 percent per annum due to high growth rate of population.

After the independenceagriculture was the leading sector of Pakistan that contributes towards in economic growth. The share of agriculture sector in GDP was 53.2%. But the end of fiscal year 2003-2004 its gradual decreased and reached at 23.3%.The manufacturing sector is also large contribution in GDP. While the contribution of trade sector in GDP during the period of 2003-2004 has increased from 11.9% to 18.4%. It means the wholesaler and trader is the third largest sector that contributing toward in GDP of Pakistan. Not only is the agriculture sector growth increasing but also the other sector growing with the passage of time. The growth of textile industry has increased more than other sector in Pakistan.

Unemployment in Pakistan

Unemployment, interest rate, inflation rate and exchange rate are the major factor that is important for economic progress in any country. Unemployment and exchange rate issues are heart of Asian economies. Balance of payment problems are also issues for many Asian countries. They go for exchange rate regime to cope this problem. They prefer the flexible exchange rate in country. If the exchange rate is flexible then easy to macroeconomic adjustments for both foreign and domestic shocks.

So the major problem of unemployment of Asian countries as well as Pakistan. Reason behind this problem is mismatch between job seekers and set of jobs. Because of this issue the unemployment is increase day by day in Pakistan.

Exchange rate and unemployment instability together face many problems in Asian developing countries and this is investigating through many variables. When the exchange rate in increased of the country then exports of that country also increased. So that it'spositive and influencing effect on net exports of country.

Current account balance of Pakistan

Current account balance deficit is the most burning issue for politician and economists all over the world for last few years. Current account balance has played an important role in economic development of any country. It indicates the economic performance of any country that help the foreign as well as domestic investors. Current account balance deficit can be caused by some factors lack of domestic saving, government policies regarding imports and exports, overvalued exchange rate, excessive domestic demand and so on. If the current account balance deficit is temporary not a serious problem for an economy and can adjusted easily.

Literature

Exchange rate topic has gained much more importance in Pakistan since the embracing of floating exchange rate patterns. While exchange rate change affected by macroeconomic variables of any country. The purpose of this study is to know about the relationshi p between exchange rate and macroeconomic variables such as GDP, Unemployment and current balance of Pakistan.

Adubi et al. (1991) is finding the impact of price volatility and exchange rate volatility on a agricultural sector trade flow. Bleany et al.(1999) find with a model that if exchange rate of developing countries is fixed to exchange rate of developed countries, the inflationary hopes in developing is reduced. Frey (1999) examined the impact of short run instability in exchange rate on the volume of exports.

Liwang (2000) investigated the impact of exchange rate instability on flow of international trade.Larrian et al. (2001) pointed out the question which exchange rate planning middle income countries adopted. Zhang (2002) analyzed china foreign exchange and investigate their impact on the inflation and balance of trade.Vuletin (2003) Investigate the effect of exchange rate role on fiscal performance between fixed and floating exchange rate.

Colantone (2006) and Yanhui& Wang (2006) provided some evidence that have higher degree of openness is affected more from exchange rate fluctuation in terms of employment.The changes in the exchange rate of the two currencies in such a way that foreign currency with relatively high interest rate depreciates, because high nominal interest rate reflects high expected inflation (Madura, 2000).

Islam &Biswas (2009) investigate the relationshi ps between exchange rate and inflation & GDP in Bangladesh. They find out that acceptance of a successful free exchange rate is in least developed countries like Bangladesh.

Liza Fahmida (2012) identified that adopting the floating exchange rate regime Bangladesh experiences positive impacts on macroeconomic development. She has considered three macroeconomic factors foreign reserve, worker remittance and exports to evaluate the impact of exchange rate. This study concluded that there is significant growth in the fundamental economic variables on the long path of new exchange rate regime.

Danmola (2013) evaluate the impact of exchange rate instability on macroeconomic variables with the help of correlation Matrix, Ordinary least square and granger.Twarowska K et al; (2000) evaluate the major determinants of exchange rate of Poland against the Euro.They detected that current account balance and inflation rate is significant impact on exchange rate.

Mirchandani A. (2013) investigates many macroeconomic variables that impact the variation on exchange rate. The factors included interest rate; inflation rate, current account deficit and the many other factors were observed to correlate with foreign exchange rate.

Ramasamy, R.et al; (2015) analyzed the relationship of exchange rate of three different countries with their macroeconomic variables with the help of technique. They observed that psychological factors like investor confidence dominated economic variables in exchange rate.

Khera, K, et al; (2015) identified the effect of various macroeconomic factors influencing the exchange rate post globalization. This study suggested that summarize imports and to promote FDI to improve the exchange rate.

H0 There is no significant relationship between GDP, Unemployment, current balance and exchange rate.

H1 There is asignificant relationship between GDP, Unemployment, Current balance and exchange rate.

Data Description

For this research the time series secondary data from 1995to 2016 was used. The date is obtained from State Bank of Pakistan, World Bank Development Indicator, Business recorder and also some findings and the information about data was gathered previous report, research paper and official websites.

Data analysis Tool

E-Views 7 statistics application software was used for the empirical analysis of the data and hypothesis testing.

Methodology

To found the impact of macroeconomic variables on exchange rate the multiple econometric regressions is used.This model is also used by Zamer (2017). The model is constructed as follows.

$$REXR = f\ (GDP,\ UN,\ OP)$$

$$REXRt = f\ (GDPt, UNt,\ CBt)$$

The regression equation model is as follows.

$$EXRt = \beta_1 GDPt + \beta_2 UNt + \beta_3 CBt$$

Where,

EXR = Exchange Rate

GDP = GDP per Capita
UN= Unemployment Rate
CB= Current Balance
μ_1 = Error Term.

Shambaugh (2003) analyzed how a stable exchange rate affects on monetary policy. Hoffman (2003) evaluated the stable exchange rate with instable exchange rate. Clark et al. (2004) investigated the impact of exchange rate instability on international trade. Lourenco (2004) evaluate the global picture of exchange business of 33 advance and emerging economics. Coudert et al. (2005) investigate the impact of exchange rate on growth and inflation of ten Asian countries.Egert et al. (2005) investigate the impact of direct and indirect on exchange rate instability via changes in exchange rate rules on export performance. Agha et al. (2005) find the channel that's monetary policy shocks are propagated in Pakistan. Aurangzaib et al.(2005) analyzed the relationshi p about exchange rate, growth and economic performance uncertainty in Pakistan.

Descriptive Statistics

	Mean	Std.Deviation	N
Exchange Rate	50.808057	17.4535816	21
Gross domestic Product	4.614524	2.0369818	21
Unemployment rate	6.363143	1.084302	21
Current account balance	-2.588048	3.9818306	21

Interpretation:

The average change rate of exchange rate is 50.8% and standard deviation is 17.45%. The average change rate of gross domestic product is 4.6% with a standard deviation of 2.03%. Unemployment rate average change rate is 6.36% and standard deviation 1.08%. Current account balance average change rate is -2.58% and standard deviation 3.98%.

Correlations

		exchange rate	gross domestic product	unemployment rate	current account balance
Pearson Correlation	exchange rate	1.000	-.182	.525	-.286
	gross domestic product	-.182	1.000	.127	.150
	unemployment rate	.525	.127	1.000	.427
	current account balance	-.286	.150	.427	1.000
Sig. (1-tailed)	exchange rate	.	.215	.007	.105
	gross domestic product	.215	.	.292	.258
	unemployment rate	.007	.292	.	.027
	current account balance	.105	.258	.027	.
N	exchange rate	21	21	21	21
	gross domestic product	21	21	21	21
	unemployment rate	21	21	21	21
	current account balance	21	21	21	21

Interpretation:

This second table gives details of the correlation between each pair of variables. We do not want strong correlations between the criterion and the predictor variables. The values here are acceptable.

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	current account balance, gross domestic product, unemployment rate[a]	.	Enter

a. All requested variables entered.

This third table tells us about the predictor variables and the Enter method used. Here we can see that all of our predictor variables were entered simultaneously (because we selected the Enter method).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.794[a]	.631	.566	11.5030221

a. Predictors: (Constant), current account balance, gross domestic product, unemployment rate

Interpretation:

A value of 79.4% indicates a good level of prediction and indicates that there is astrong relationshi p between dependent and independent variables.

In the above model the value of R^2 is 63.1% which means that 63.1% of dependent variable -exchange rate is explained through independent variables which are unemployment rate, gross domestic product and current account balance of the country.

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3843.118	3	1281.039	9.681	.001[a]
	Residual	2249.432	17	132.320		
	Total	6092.550	20			

a. Predictors: (Constant), current account balance, gross domestic product, unemployment rate

b. Dependent Variable: exchange rate

Interpretation:

Table ANOVA shows that the F- statistics of the model is 9.68 and p value (.001 < .05) which conclude that econometric model is significant. Individual significance of the variables was determined by their t values. Coefficient analysis of the variables was undertaken by the values of the coefficients of the respective variables

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-30.936	18.411		-1.680	.111
	gross domestic product	-1.662	1.280	-.194	-1.298	.212
	unemployment rate	12.981	2.629	.806	4.937	.000
	current account balance	-2.633	.718	-.601	-3.666	.002

a. Dependent Variable: exchange rate

Interpretation:

For the GDP, t value remained -1.298 and p value (.212 > .05) which show that GDP has no significant impact on exchange rate, hence H_3rejected. For unemployment rate, t value was found 4.937 and p value (.000 < .05) which show unemployment rate has significant impact on exchange rate, H_4also accepted. The t value of currentaccount balance, was found -3.66and p value (.002 < .05) which shows significant impact of current account balance on exchange rate, hence H_5also accepted.

Analysis of coefficient of GDP tells us that there is negative relationship between growth and exchange rate. It further reveals that 1% change in GDP will bring 19.4% change in exchange rate of Pakistan.

Analysis of coefficient of unemployment rate tells us that there is positive relationship between unemployment rate and exchange rate. It further reveals that 1% change in unemployment rate will bring 80.6% change in exchange rate of Pakistan.

Analysis of coefficient of current account balance tells us that there is negative relationship between current account balance and exchange rate. It further reveals that 1% change in current account balance will bring 60.1% change in exchange rate of Pakistan.

Conclusion

An exchange rate is the rate at which one currency exchange with other currency. Exchange rate impact on international trade, free market and help to maintain a balance of trade and balance of capital. In this study to checkthe relationship between GDP, UN, CB and EX annually dataare used.To found this relationship OLS model is used result showed that the variable unemployment is positively significant with exchange rate at 1% level but the variable current balance is negatively significant at level 1%.The variable Gross domestic product is not found the relationship with exchange rate. Positively change mean when the variable value high then exchange rate value against US dollar is also high same direction but the meaning of negatively significant opposite direction when the value of variable is low the value exchange rate is high.

In Pakistan many factors is involved to determine the exchange rate value against US dollar Pakistan is developing country it's political condition is not stable also face the problem of terrorism. So the current account value is low and also having a problem of unemployment.

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