

## **IMPACT OF MACROECONOMICS DETERMINANTS ON EXCHANGE RATE AND INTEREST RATE FLUCTUATIONS IN PAKISTAN**

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### **ABSTRACT**

**Purpose--**The main objective of this research paper is to investigate the effect of specific Macroeconomic Determinants on exchange rate and interest rate fluctuations in Pakistan. Large number of macroeconomic variables effects on exchange rate and interest rate changing pattern, but in this paper we include only inflation rate, exports, imports, gross domestic product and foreign direct investment.

**Methodology/Design--**we use different statistical tools like Descriptive data analysis, Correlation and Estimate equation (least square) to find the linkage between selected variables. All variables includes in this paper are quantitative in nature. Annual observational data includes in this research paper to find out the effect of exchange rate volatility on macroeconomic factors. And its data spans is from (1970) to (2015). The data collection source is (world development indicators).

**Findings--**Findings shows that both of the two dependent variables interest rate and exchange rate fluctuations negatively effects on inflation and Gross domestic product. While interest rates are positivity relates with exports, imports and foreign direct investment. On the other hand exchange rates volatility shows positive relationship with exports and FDI, and imports are negatively links with exchange rates. Findings also suggest that if the exchange rate and interest rate changes continuously it can be leaves negative impact on exports as well as imports.

**Originality/Value--**The developing countries like Pakistan pay less attention on their exchange rate systems, so this study helps policy makers, to develop policy for international trade and investment. This paper also provides contributions for government to determine the money circulations in country.

**Keywords:** Exchange Rate, Inflation, Gross Domestic Products, Imports and Exports, Foreign Direct Investment, Pakistan.

## **INTRODUCTION**

The impact of macroeconomics determinants on exchange rate fluctuations and interest rate changes patterns have become topical issue for both developed and underdeveloped countries. Stable exchange rates of any country attract exports and foreign investment. Exchange rate is the real price of any country which paid when transaction made with other countries. Like many other under developing countries Pakistan has also faces exchange rate fluctuation problems, because the exchange rate regimes in Pakistan are time to time changes not stables.

The value of Pakistani rupee devalued time to time. Firstly when the government of general Zia-ul-Haq changed the exchange rate system into managed float exchange rate system, Exchange rates of any country include the setting regulation and arrangements under which the currencies of different countries effected. Exchange rates management has been a big issue for Policy Makers for a very long time. Azeez et al, (2012). It is stated that stable exchange rates leads to the boast the economic growth. We define exchange rate volatility as the risk in investment decisions which leads to destabilize the macro-economic performance. Exchange rate volatility affects symmetrically on macro-economic variables. Exchange rate volatility has directly effects on Export, imports and FDI.

Exchange rate defines as the prices of one country's currency with relation to the other country, means the required amount of one country's currency which can buy other country's currency units. The main objective of this study to investigate the relationship between exchange rate Fluctuations and macroeconomic factors like, interest rates, inflation, GDP, exports and imports. Volatility of Exchange rates defines as when there are the uncertain conditions on both Goods and Financial Assets. For an economy like Pakistan exchange rate plays a vital role in international trade FDI and GDP. Azid et al, (2005). Higher the exchange rates reduce trade by creating uncertain future conditions along with profits from indirectly. Fallen the exchange rates can increase the price of imports of goods in country. If the foreign participants of trade and investment see volatility in exchange rate they can be move to another country where they found stable exchange rate.

This paper Contributes is to fill the gap on impact of specific macroeconomic determinants on exchange volatility and interest rate fluctuations which data was not earlier studies identified. Like macroeconomic variable effect on interest rate fluctuations. At start for near about 35 years Pakistan exchange rate was fixed peg, when Pakistani rupee links with the pound because of sterling areas member. But when (USA) holds the power and most of the currencies related with US \$ so the Pakistani rupee's fate largely depends on the US\$. The one currency vehicle always creates problems for Pakistani rupee, because most of the time Pakistani rupee was

devalued with respect of US \$.

This study also sees the effectiveness of exchange rates for adjust trade, inflation, FDI, and GDP in Pakistan. Theoretically the relationship between exchange rate and economic growth is positive the devaluation of exchange rate increase economic growth. Depreciation of currency means to reduce value of home currency along with foreign currency. The stabilization of long-term economic growth of country requires stable trade and foreign trade markets. Business enterprises prefers stable exchange rate over unstable exchange rate. Our first section provides literature review which shows how exchange rate can be affected by the different macroeconomic variables. Next section provides the measurement process and different methods of data measurement and at last the findings of all this paper which can be helpful for policy makers to draw flexible policies for international trade and investment. The findings of this study suggest that selected macroeconomic variables are positively and negatively effect on both exchange rate fluctuations and interest rate changes patterns.

## **LITRERATURE REVIEW**

Cassell and Varney (2016) Examined the relationship between exchange rate and macroeconomic variables and economic growth in "LIBERIA" and found that with the devaluation in the domestic country's currency leads to the increase in Exchange rate and increase in the FDI and also reduces volatility among economic growth. This review also suggests that with peg exchange rate achieve less inflation then the floating exchange rate. Controversial views said that the uncertainty between Exchange rates leads lower investments. But the stable exchange rate relates positively with investment decisions. The volatile exchange rate links negatively with trade openness.

Yildirim et al. (2016) Found the impact of exchange rate fluctuations on the macroeconomic performance with respect to fast growing emerging economies, like Brazil, Turkey, Russia and south Africa. The exchange rate fluctuations play crucial role in the development of fast growing economies. It also affects on both monetary policy as well as foreign exchange markets. Here two main views reviewed. First mundell- fleming model suggest that the depreciation in exchange rates leave expansionary impact on economic activities because it can increases exports and decreases imports from country. Second model suggests that through several channels the depreciation in domestic country currency have Contractionary effect on economic activities. Depreciation in exchange rates also leads inflation pressure in economy.

These exchange rates like fixed exchange rate system, freely floating exchange rate system, managed float exchange rate, and pegged exchange rate systems have the significant effects on import and exports inflation and other macroeconomic variables. The Inflation rate has

significant negative relation with exchange rate. The exports can be strongly effect the exchange rate as compare to other macroeconomic variables like interest rate, inflation, and FDI. Because when the exchange rate decreases the export volatility increases. Interest rate is also a big cause of exchange rate movements, because when in domestic level nominal interest rate changes it leads to currency appreciation. Abdoh et al, (2016).

Vikram and Vikram (2015) Analyzed the impact of exchange rate volatility on various macroeconomic variables of Indian economy, Found that most of the variables relates with the exchange rate are has positively related. Exchange rate negatively relates with the inflation, Interest rate, but positively relates with the GDP and FDI inflows. Findings also showed that there is no direct relationship between GDP and Exchange rate. Because most of the variables we select are positively related so these macroeconomic variables strongly affects to the Indian Exchange rates.

Ramasamy and Abar (2015) Investigated the impact of macroeconomic factors on exchange rate. And find that with the upward flow of foreign direct investment across borders cause exchange rate volatility randomly. This study shows that the relationship exists between exchange rate and inflation, balance of payment and interest rate is positive. Researchers also specify that the overall performance of county's economy is affected by the exchange rate. The exchange rate has significant impact on the imports and exports of economy which automatically drops the foreign currency from central banks. In this review the exchange rate could not only affected FDI, imports & exports and BOP but also affects Banking, Insurance, education, and tourism.

Khan et al. (2015) Found the relationship between non-traded goods prices and real exchange rates. The researcher finds out that with the raising in the prices of non- traded good also increases the real exchange rates and also spread the trade deficits. Evidence showed that with the increase in exchange rate also boosts the inflation, the relationship between exchange rate and inflation is long-run equilibrium relation. Trade also affects exchange rates in both negative and positive conditions, the volume of exports and imports effects exchange rates. There is an also a long-run equilibrium relationship between trade and exchange rate. Exchange rate also affects FDI in both directions, and there is no causality between GDP and Exchange rate in either direction. Haseeb and Iqbal () Studied the impact of sectorial exports with relative price and exchange rate volatility in Pakistan. And show that the sharp volatility in prices and exchange rates has significant positive and negative impact on goods of imports or exports. Empirical studies show that exchange rate sharp volatility has significant negative relation with trade counters. Fluctuate exchange rate has significant impact on the level of exports.

Another study conducted to Analyzed the impact of domestic and foreign currency valued

exchange rate volatility on the export and import demand functions. Exchange rate effect the real prices of commodities traded among the countries. Domestic inflation plays a vital role in determining the changing pattern in the prices of traded commodities. The volatility in exchange rates effects directly and indirectly to international trade. The uses of one vehicle currency (U.S \$) can become a serious issue for developing countries. Khan et al. (2014)

Bibi et al. (2014) Noticed the impact of trade openness, FDI, exchange rate, and inflation on economic growth in Pakistan. Uses various econometric techniques and find that FDI, Imports & exports positively relate with GDP and inflation and trade openness negatively affect the GDP. And exchange rate affect gross domestic product positively. There is long-run relationship between these macroeconomic variables.

Another Review conducted by Mirchandani (2013) Analyzed the exchange rate volatility with respect to macroeconomic determinants. Exchange rate affect macroeconomic variables like interest rate, FDI, and inflation, and there is totally opposite relationship existing between exchange rate and interest rate means that with the fall in interest rate also decreases exchange rate. Normally the positive relationship exists between exchange rate and FDI.

Ebaidalla (2013) Investigated the effect of real exchange rate volatility on macroeconomic performance in Sudan. The researcher concludes that fluctuations in the real exchange rate played very critical role in fluctuation in economic growth and FDI inflow in Sudan. Fixed exchange rate enhances FDI inflow and also increases exports in country. While floating exchange rate helps in economic growth and also balance of payments adjustment of any country. Economic growth largely depends on the exchange rate regime used by the country. With stabilization of exchange rate the price uncertainty reduces which leads stable economy.

Danmola (2013) Finds that the volatility of exchange rates influences positively on the Gross Domestic product, foreign direct investment, Trade but negatively influences on the inflation in country. The lower the value of exchange rate of any country shows highly competitiveness of such country's currency. Exchange rate volatility effects positively on trade openness because it increases exports and make country more competitive in international markets and also reduces imports.

Ahmad et al. (2013) Analyzed that both exchange rates Nominal and real has significant positive effect on economic growth. A stable economic growth requires established trade and foreign exchange markets. Exchange rate misalignment effects on economic growth and exchange rate also an important indicator of economic growth. The exchange rate directly affects the economic growth. Researcher also suggests that the stabilization of exchange rate in country is also stabilizing economy growth.

Shaheen (2013) Noticed that exchange rate effects inflation and imports positively, while it affects exports negatively. Researcher also suggests that with the 1% increase in exchange rate 70% increase inflation in Pakistan. And also with 1% increase in exchange rate decreases exports 62% in Pakistan. The value of Pakistani Rupee is undervalued as compare to US \$, this leads to positive impact on exports. While under valuation of Pakistani Rupee leads to imports more costly and effects adverse on balance of payments of Pakistan.

Azeez et al. (2012) Concluded that not only the exchange rate but also the other macro-economic factors effects macro-economic performance of country like investment, consumption, government spending, trade etc. here the volatility of exchange rate represents the Nominal effectiveness of exchange rate. The instability of the exchange rate destabilizes the investment. The volatility of exchange rates affects the aggregate demand and supply in Nigeria, but the effectiveness and consequences heavily depends on the existing economic system. This study shows that the volatility in exchange rate has positively related with the macro-economic performance in both long and short run.

Kogid et al. (2012) Examined the impact of inflation, nominal exchange rate, FDI and capital stock on economic growth of Pakistan. The inflation and exchange rate has significant impact on economic growth of Pakistan. The relation between exchange rate and economic growth has been important factor of economy. Exchange rate showed that how many units of one nation currency can be purchased with one unit of domestic currency. Pakistan uses floating exchange rate because the value of currency devaluate, so people prefers consumption of foreign goods to domestic good. Controversial views about the relation between exchange rate and economic growth. So multiple regression analysis uses to find the relation between these variables and showed there is a negative relation between GDP and Inflation.

Parveen et al. (2012) Studied the various factors which affects the exchange rates. And find out there is a negative relationship between inflation and exchange rate, because when inflation rises it devalued the home currency. The other variables like exports, reserve money, have a long run positive relation with exchange rate. The value of home currency in foreign markets will leaves positive effects on the exchange rate, and the currency supply in the foreign markets impact negatively on exchange rate.

Tarawalie et al. (2012) Exchange rate fluctuation affects effects the prices in both Direct and Indirect Channels. Direct channels include one price base on purchasing power parity theory. Exchange rates can also effects on prices indirectly like demand of goods (export). The researchers reviewed four economies like Ghana, Nigeria, Guniea, Sierra Leonean and finds that inflation leaves negative effects on gross domestic product in these countries, while inflation



relates with exchange rate, and money supply in these economies are positively.

Mahmood et al. (2011) Found that there is the theoretically direct linkage between exchange rate volatility and macroeconomic factors of country. The researchers also suggest that there is positive effect of exchange rate volatility on GDP, growth rate and trade openness, and it will negatively impact on Foreign Direct Investment.

Hussain Javed and Farooq (2009) Found the relation between volatility of exchange rate and economic growth and conclude that with the increase in exchange rates effects export reserve money, manufacturing products positively and imports negatively. Same with the decrease in exchange rate affects exports, reserve money, and manufacturing products negatively and imports positively. They also examine that there is a long-run relationship exists between growth, exchange rates, imports, reserve money and manufacturing products. The relationship exists between exports and exchange rates not in long-run because the exports volume is stumpy in Pakistan. The exchange rate volatility is very sensitive with the domestic economic performance.

Kyereboah-Coleman and Agyire-Tettey (2008) Studied the impact of exchange rate volatility on FDI with respect to Sub- Saharan Africa, and shows that there is a negative relation between real exchange rate fluctuations and FDI inflows. The sharp volatility of exchange rates discourages foreign direct investment. The researcher also finds that not only the exchange rate leaves negative impact on the FDI inflows but also the other factors like political instability, and market size could not play a vital role in Evaluating FDI inflows, because the investors tend to invest in those sectors where the finished goods exported quickly.

Bahmani-Oskooee and Hegerty (2007) Reviewed three groups' data, included one country aggregated trade data and whole world, second category includes trade flows between two countries bilateral data. Last category includes sectorial trade or commodities between two countries. The researcher concludes that floating exchange rates can be a cause of uncertainty in foreign exchange markets. But the theoretical reviews suggest that these uncertainties increases trade flows if traders increases their trade volume to mitigate the effect of decrease future exchange rate. Theoretical studies also suggest that if the volatility in exchange rate increases it may leads opposite effect means that it can increase trade volume.

Lee-Lee and Hui-Boon (2007) Noticed that macroeconomic factors can also linked in both long run and in short run. Macroeconomics factors and exchange rate moves consistent to achieving the equilibrium point in selected economies like Malaysia, Indonesia, and Singapore. In these economies the exchange rate could not only affected by the inflation, FDI, Trade but also the other authorities and market player's plays contributes their roles differently. The

researchers also finds that the international markets in present days face excessive fluctuations in exchange rates as compare to the Breton wood system and the begin of flexible exchange rate system 1973.

Azid et al. (2005) Analyzed the results of volatility in exchange rate on macroeconomic factors and finds that if the exchange rate moves freely it may cause the fast moving of pricing conditions of economy. Real exchange rate has negative relation with the domestic and foreign investor's decisions, because the investors waited for more information regarding real exchange rates changes. When there is the sharp volatility in real exchange rate it can effect on exports of both short-run and in long-run. With the using of floating exchange rate the market forces can moves freely. This review suggests that there is no impact of volatility of exchange rates on manufacturing products, but the sharp increase volatility in exchange rate can cause the decrease the investment levels.

ur Rehman and ur Rehman (2002) Suggested that there is an theoretical relation exist between exchange rate fluctuations and economic growth of Pakistan .Nominal exchange rates can be good for eliminating the changes occurs in purchasing power parity (PPP) and the validity of (PPP) depends on the flexibility of exchange rates. The exchange rate are highly effected by Gross Domestic Product (GDP) Inflation, and Interest rate, because the profitability of multinationals affected by the exchange rates. The exchange rate divides into four classes.

Ranki (2001) Concludes that the Euro exchange rate changes effects inflation rate, but it is tough to give quantitative effects of this measure. The price stability and imports exports activities affected by the exchange rate fluctuations. A fall in domestic country currency will increases price of imports and increase in the domestic country currency will lower the imports price and has effect on foreign exports. Inflation not only effected by the exchange rates but also the money supply, and export prices which we called exogenous factors. The exchange rate effects on inflation with different time lags are significant.(Parveen, Khan, & Ismail, 2012)

## **DATA AND METHODOLOGY**

We use Inflation Rate, FDI, Imports & Exports, GDP, as our independent variables. Exchange rate and interest rate is our Dependent Variable. All the variables are used in this study are Quantitative in nature. It is implied that the fluctuations in exchange rate and interest rates has some effect on macroeconomic variables. So this study has been conducted to check out the effect of macroeconomic factors that makes exchange rate and interest rate volatile. Here we selected the macroeconomic factors that are volatility of exchange rate (VEXR),interest rate (INT) foreign direct investment (FDI),Gross domestic product (GDP) and Export (EXPO) Imports (IMP) and Inflation (INF). We use different tools like Correlation and Descriptive data



analysis tools, (mean, median, standard deviation etc.) and Regression model to check out the level of significance between these variables. This study consists of annual observations and its data collected from secondary source. Its data spans from (1970 to 2015). The variables data included in this paper are sourced from World Development Indicators.

**Variables:**

In this paper we include total seven variables, exchange rate, interest rate, inflation, exports, imports, gross domestic product and foreign direct investment. From which two dependent variables exchange rate and interest rate. Other five variables are independent variables.

**Dependent Variables:**

**Exchange Rate:** Exchange rate has two components Domestic currency and foreign currencies. Exchange rate means how much number of units of one country's currency required that can be used to purchase other country's currency units. Hussain et al, (2009).

**Interest Rate:** Interest rate is the extra amount which a borrower paid for use of cash etc. which he already borrows from a lender. Abdoh et al, (2013)

**Independent Variables:**

**Inflation:** Inflation is a situation or phenomenon when there are the upward movements in prices of any country and purchasing power remains low. Income distribution is also strongly affected by inflation. Vikram & Vikram, (2015).

**Foreign Direct Investment:** Foreign Direct Investment can be explain as when one country invests in other country which may be in money or services, through mergers or acquisitions or any other means is called foreign direct investment. Bibi et al, (2014).

**Gross Domestic Product:** GDP include everything which is produced within country in a specific period of time by local governments, peoples, and also companies (which may owned by foreign citizens) is called Gross Domestic Product. (The Balance.com, Kimberly Amado).

**Exports:** All the goods or services which are produced within country and shipped to another country for different purposes like (re-sell, for use etc.) The government can boosts their exports by provides subsidies through these subsidies the exports can become more competitive in foreign markets. Haseeb & Iqbal, (2014).

**Imports:** Imports define as the all goods or services which are purchases from one country to another country for resell etc. imports are also contributes to lower the financial recourses of any country. Azid et al, (2005).

**Econometric Model:**

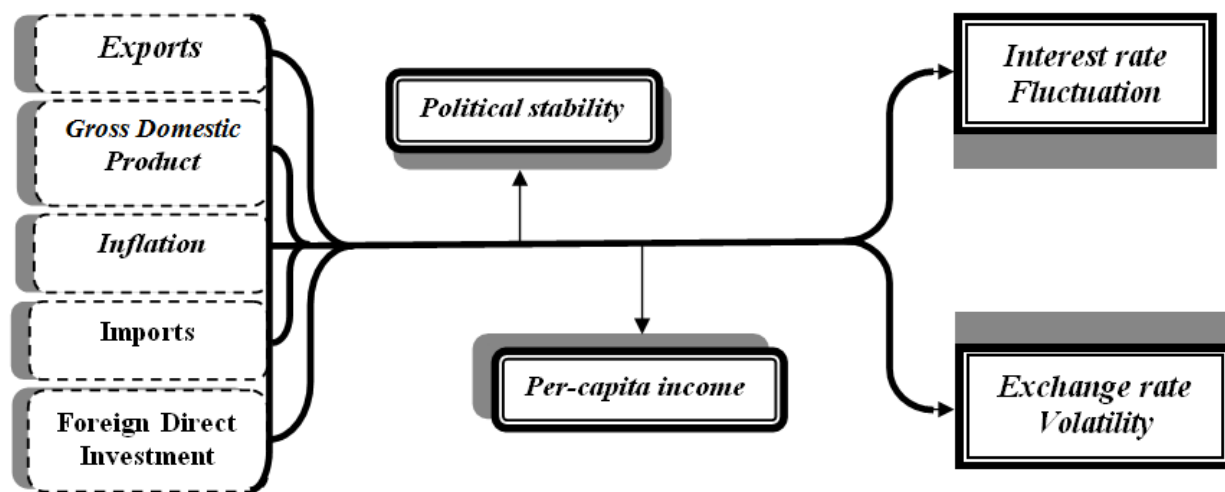
~~$$\Delta ER = \alpha + \beta_1 Inf + \beta_2 Expo + \beta_3 Impo + \beta_4 Gdp + \beta_5 Fdi + \epsilon \longrightarrow \text{eq.1}$$~~

~~$$\Delta INT = \alpha + \beta_1 Inf + \beta_2 Expo + \beta_3 Impo + \beta_4 Gdp + \beta_5 Fdi + \epsilon \longrightarrow \text{eq.2}$$~~

**Descriptions of Variables:**

- $\Delta ER$  = Volatility of Exchange rate
- $\Delta INT$  = Interest rate Fluctuations
- INT = Inflation
- EXPO = Exports
- IMPO = Imports
- GDP = Gross Domestic Product
- FDI = Foreign direct investment

**Theoretical Framework:**



Following table shows that the exchange rate regimes in Pakistan from 1971 to 2009. And also shows the effect of changes in exchange rate regimes on Pakistani rupee.

**Exchange Rate Regimes in Pakistan**

Exchange Rate	Period	Rupee
Fixed Exchange rate	1971-1981	Devalued
Managed Exchange rate Floating Exchange rate	1982-1999	Devalued
Flexible Exchange rate	2000-2009	Depreciated

**Variables Descriptions:**

Exchange rate	Average period per US\$. %
Interest rate	Lending rate %
Inflation rate	Annual %
Exports	% of GDP
Imports	% of GDP
GDP	Annual growth %
FDI	% of GDP growth

**Dependent Variable: Interest rate Fluctuations.**

**I. Table: Results of Descriptive Data Analysis.**

Description of variables	INT	INF	EXPO	IMPO	GDP	FDI
Mean	13.1356	9.1299	13.2382	19.6223	4.8391	0.7486
Median	13.8500	7.8825	13.3590	19.7225	4.7720	0.5223
Maximum	17.5100	26.6630	17.3590	24.0990	11.3530	3.6680
Minimum	6.2500	2.5390	7.1420	12.7890	0.4680	-0.0630
Std. Dev.	2.8704	5.2573	2.5551	2.8187	2.4193	0.8155
Number of observations	46	46	46	46	46	46

Results obtained from descriptive data analysis showed that the mean of interest rate is about 13.1356, with the maximum value of 17.5100 and minimum value which is 6.2500. The standard deviation of interest rate is 2.8704, which is lesser than its mean. The mean value of Independent variables like, inflation, exports, imports, Gross domestic product and foreign direct investment shows, 9.1299, 13.2383, 19.6223, 4.8391, and 0.7486 respectively, all of the selected variables values are greater than from their standard deviations values except FDI.

**Dependent Variable: Interest rate Fluctuations.**

**II. Table: Correlation Results.**

Variables	INT	INF	EXPO	IMPO	GDP	FDI
INT	1.0000					
INF	-0.2299	1.0000				
EXPO	0.6528	0.1186	1.0000			
IMPO	0.2286	0.3029	0.0229	1.0000		
GDP	-0.1482	-0.0793	-0.1576	0.1801	1.00000	
FDI	0.1321	0.0957	0.3374	0.1093	-0.1233	1.00000

Results obtained from correlation table 2 shows that the relationship between interest rates which is our dependent variable is negatively relates with inflation and Gross domestic product which are our independent variable, means that there is an inverse relationship between all of them. If inflation and GDP decreases it can increases interest rates. Other three independent variables like Exports, imports, and foreign direct investment are positively influences on interest rate fluctuations.

**Dependent Variable: Interest rate Fluctuations.**

**III. Table: Estimate Equation.**

Variables	Coefficient	Std. Error	t. Statistic	Prob.
C	-1.8191	2.3755	-0.7658	0.4483
INF	-0.2350	0.0538	-4.3693	0.0001
EXPO	0.8030	0.1116	7.1907	0.0000
IMPO	0.3906	0.1018	3.8339	0.0004
GDP	-0.1777	0.1145	-15461	0.1299
FDI	-0.4511	0.3496	-1.2903	0.2044
R-Squared	0.6577			
F-statistic	15.3700			
Prob (F-Statistic)	0.0000			

*Significance level is 5% and 15%.*

In Table 3 we use estimate equations to check the significance levels of independent variables on dependent variables. We found that inflation, exports, imports, and GDP are significantly related with interest rates with the values of 0.0001, 0.0000, 0.0004, and 0.1299, respectively. Only FDI shows insignificant relationship with interest rate fluctuations.

The R2 value is 65% which shows that interest rate strongly related with the most of selected variables.

**Dependent Variable: Exchange rate Volatility**

**IV. Table: Results of Descriptive Data Analysis.**

Description of variables	ER	INF	EXPO	IMPO	GDP	FDI
Mean	38.3030	9.1299	13.2382	19.6234	4.8391	0.7486
Median	26.5945	7.8825	13.3590	19.7255	4.7720	0.5223
Maximum	102.7690	26.6630	17.3590	24.0990	11.3530	3.6680
Minimum	4.7610	2.5390	7.1420	12.7890	0.4680	-0.0630
Std. dev.	30.3764	5.2573	2.5551	2.8187	2.4193	0.8155
Number of observations	46	46	46	46	46	46

Results obtained from descriptive data analysis showed that the mean of exchange rate is about 38.3030, with the maximum value of 102.7690 and minimum value which is 4.7610. The standard deviation of exchange rate is 30.3764, which is lesser than its mean. The mean value of Independent variables like, inflation, exports, imports, Gross domestic product and foreign direct investment shows, 9.1299, 13.2383, 19.6223, 4.8391, and 0.7486 respectively, all of the selected variables values are greater than from their standard deviations values except FDI.

**Dependent Variable: Exchange rate Volatility.**

**V. Table: Correlation Results.**

Variables	ER	INF	EXPO	IMPO	GDP	FDI
ER	1.0000					
INF	-0.1012	1.0000				
EXPO	0.2677	0.1186	1.0000			
IMPO	-0.2214	0.3029	0.0229	1.0000		
GDP	-0.3311	-0.0793	-0.1576	0.1801	1.00000	
FDI	0.4494	0.0957	0.3374	0.1093	-0.1233	1.00000

Correlation analysis in table 5 shows that the relationship among exchange rate volatility and inflation rate, imports and Gross domestic product is negative, -0.1012, - 0.2214, -0.3311 respectively. These variables effects inversely on exchange rate volatility. Exports and foreign direct investment shows positive relationship with exchange rate volatility. Findings suggest that if the exports and FDI of any country increases it can also increases exchange rate volatility vise and versa.

**Dependent Variable: Exchange rate Volatile:**

**VI. Table: Estimate Equation.**



Variables	Coefficient	Std. Error	t. Statistic	Prob.
C	70.7513	34.6848	2.0398	0.0480
INF	-0.6617	0.7855	-0.8423	0.4046
EXPO	1.2842	1.6305	0.7876	0.4356
IMPO	-2.0678	1.4876	-1.3899	0.1722
GDP	-2.9798	1.6725	-1.7816	0.0824
FDI	15.4811	5.1050	3.0324	0.0042
R-Squared	0.3483			
F-statistic	4.2770			
Prob. (F-Statistic)	0.0032			

*Significant level of 10 %*

In Table 6 we use estimate equations to check the significance levels of independent variables on dependent variables. We found that inflation, exports imports, and are insignificantly related with exchange rate with their values of 0.4046, 0.4356, and 0.1722, respectively. FDI and GDP show significant relationship with exchange rate fluctuations. The R2 value is 34% which means other macroeconomic variables also effects exchange rate strongly which are not included in this paper.

## CONCLUSION

From the above discussion we able to say that exchange rate and interest rate pattern changes affected by the macroeconomic variables. These patterns play a vital role in the development of country's foreign trade. In Pakistan these macroeconomic variables effects exchange rates and interest rates differently from time to time. Our dependent variable interest rates shows significant relation with inflation, exports, imports, and GDP. Only foreign direct investment shows insignificant relation with interest rates. It means that this selected macroeconomic variable has enough influence interest rate patterns. Next dependent variable which is exchange rate significantly relates with FDI and GDP. Inflation rate, Exports and imports are insignificantly relates with exchange rate volatility. Finally we conclude that Pakistan want to revise its international trade and investment policy. One currency vehicle like US % use should be ignores, and make flexible changes in both domestic and international trade according to Pakistan's current scenario.

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