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Is Exchange Rate Volatility Influenced by Macroeconomic Variables ? In Context of Pakistan

Isbat Alam[1], Lu Shichang[1], Sobia Naseem[2] and Muhammad Mohsin[3]
[1]College of Business Administration, Liaoning Technical University, Xingcheng 125105, China.
[2]School of Economic Management, Shijiazhuang Tiedao University, Shijiazhuang, Hebei, China.
[3]School of Business, Hunan University of Humanities, Science and Technology. Loudi 417000, China.

(Corresponding author: Isbat Alam)
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ABSTRACT: The main objective of this study is to investigate the existence of relationships between Real Exchange rates (EXR) and macroeconomic variables against the US dollar in Pakistan. In this study, the real exchange rate is dependent variables and some other macroeconomic variables are independent variables. To investigate this relationship, the ordinary least square regressions (OLS) techniques are used. This technique was also applied by Mohsin (2018). The result indicates that the consumer price index (CPI), the current account balance (CAB) and foreign direct investment (FDI) both are positive significant 1% at a level. But the gross domestic product (GDP) and trade openness (OP) both are negative significant at 1% level. Lending interest (LI) shows no significant relation to the exchange rate (EXR). Other the result of the ARCH LM test shows serial correlation does not exist and to scrutinize the heteroskedasticity ARCH test has utilized, this test indicates that heteroskedasticity does not exist. This pragmatic study is useful for foreign investors and exports growth of a country.

Keywords: OLS, ARCH-LM test, Macroeconomic Variables, EXR.

I. INTRODUCTION

"Exchange rate" is the value of one currency to another. In marginally different perspectives, it expresses the quotation of the national currency concerning foreign ones. Consequently, the exchange rate is a factor of conversion, a ratio or multiplier, depending on the conversion of direction. It is understood that if the exchange rates can move freely, it might turn out to be the highest fast-moving price in the economy, bringing foreign goods all together with it. The globalization era and the economic liberalization, the exchange rate shows significant starring title roles in international trade and also financing like the small open economy in Pakistan. Because these are the exchange rates, movement affects the multinational profitability and increase the exposure of exchange to financial institutions and enterprises. A stable and perpetual exchange rate might be useful for financial institutions and enterprises in performance evaluation of investment, hedging and financing and, therefore, decreasing their financial and operational risk. Exchange rate Variations might have a major effect on the fundamental of macroeconomic factors such as price, unemployment, interest rate, wage, and output levels. Exchange rate instability words set in plain the insecurity in the international transaction together in financial assets and goods. The exchange rate is forwards observing modelled comparative assets costs that redirect unpredicted variants in relative supply and demand of foreign and domestic currencies. Thus volatility in exchange rate imitates negotiators' expectancy of variations in money supply features, incomes and interest rate. Management of exchange rates has been an up-to-date issue between policymakers and academics for a long period. This predominantly on-going at what time the Gold rate usually distorted in the 1930s and consequent development of the Britton wood system adjustment of peg from the 1940s. The espousal concluded that adjustable exchange rates are known using the developing nations in 1970. These reform structures booming out in the 1980s by way of stimulating crises of currency in the developing economy in the 1990s. Exchange rate flexibility is accomplished by variation of making its exchange rate. It is the main focus in the argument due to its influence on the outcomes of business by way of partners of nation business would be preferred on the stability of exchange rate to instability ones. It has been acknowledged in the former studies by Mohsin *et al.,* (2018) that comparatively, maintaining the constant exchange rate is significant in increasing the economic growth [14]. However, in the emerging market, the currency crises are more frequent because the developing nation's nominal currencies might not produce predictable and fixed exchange rates and might diverges their parity level, flagging technique moves for currencies speculation. Even the Asian economies are generally preferenced on managed floating exchange rates system; even in the existence of the pegging system, the exchange rate volatility varies of each currency Alba and Papell (1998) [2]. Mahmood and Ali (2011) measured Exchange rate volatility encourages risk and uncertainty in investment decisions making with disrupting influence on the performances of macroeconomic [25]. Mordi (2006) investigates almost the private concerns sector about the exchange rate instability because the exchange rate fluctuations influence the investment or investors concentration which is developing the reasons for capital gains or losses [26]. Exchange rate volatility consistently effects through macroeconomic variables. Aliyu's (2009) investigated that exchange rate appreciations affect the increase and decrease of import and export [3]. Although exchange rates depreciation and appreciation highly affected economic growth and trade of the importing and exporting countries. Depreciation in the exchange rate has negatively affected the developing countries' Iyeli and Utting (2017) [10]. Juhro and Phan (2018) address that instability of exchange rate in profit of the traders, uncertainty and risk in commodities value, increasing transaction costs and inflation could

occur due to the exchange rate fluctuation [12]. In this study, the researcher will determine the association between macroeconomic variable and exchange rate fluctuations in responses to these factors. I will ascertain which variable is correlated more close with fluctuations of the exchange rate. Hypothetically, the relationships between exchange rate fluctuation and macroeconomic variables are pre-planned. In this research, I will point out this relationship, whether embracing it accurately in empirical or not. Spaced out from this introduction, the rest of the parts, this paper is planned as well as follows: part two emphasizes the empirical review and literature while part three is related to methodology employees. Part four focuses on expansively analyzed, finding and discussions. The last part represents recommendations, conclusions and summary.

Significance of the study. The important key suggestion of the study is to identify the influence of macroeconomic variables on the exchange rate for further prediction of the exchange rate. This updated study will be useful for Pakistan's as well as for foreigner investors, companies, commercial banks, individuals, foreign currency exchangers, investment policy management and organizations etc. to predict the exchange rate through utilizing the macroeconomic variables.

The objective of the study. To investigate the relationships of macroeconomic variables and a real exchange rate of Pakistan (PKR) against the US dollar.

II. LITERATURE REVIEW

The literature review plays an important role in recognizing the background of being the conducted research study. It is also responsible for the problematic direction and eradication of the prospect of unnecessary reiteration of determinations. Additionally, valuable skilled information on research study is achieved from the preceding research descriptions. The important key objective of this fragment is to evaluate the interrelated review of the literature. Bhutt et al. (2014) found that the inflation rate and interest has higher influence on the exchange rate variation while current account and the gross domestic product has a low effect on the exchange rate variation. Jilani *et al.* (2013) reported that evidence is not clear about the relationship between economic growth and exchange rate since it does fluctuate from economy to economy [11]. This study determines the association between economic growth and exchange rate. According to this paper, results conclude there are significant and positive relationships between the growths rate of Pakistan and the exchange rate in the long-term. According to Naseem *et al.,* (2018, 2020), the exchange rate impact on the economic growth rate significant and the relationships is positive with economic growth [17, 18].

Consequently, high exchange rate must be well conserved in demand to increase the economic growth. Hakkio (1980) explains that the fisher relationships indicate variations in the real interest rate are causes due to the variation in the nominal interest rate [7]. A real interest rate change attracts foreign and domestic investments opportunity. If the real interest rate US is high compare to external real interest rates, the marketplace will be expected the real exchange rate to depreciates. Variation of the real interest rate was the maximum impact of nominal interest rate and dollar. The earlier study of Aftab *et al.,* (2012) shows that volatility in the exchange rate has a negatively influence export, however foreign income has impacted negatively on the exports and, through this relationship also holds for the long-term [1]. Iqbal *et al.,* (2011) point out that the existence of positive influence of exchange rate instability on trade openness and GDP growth rate [24]. While negatively influence of exchange rate instability on FDI is founded. Rafiq et al. (2019) explain that the future expectation of depreciation or appreciations of currency is closely connected to the future probability of inflation in one nation comparative to another nation. Recently Oforegbunam and Nnneka (2014) describe that the exchange rate is an active factor, the key factors manipulating its realization existence the subsequent: supply of money, the balance of payment, interest rate and inflation rate [19]. Analysis of these factors' impact on the exchange rate essentially takes into description their interdependence, the linkage among them, which is eventually indications of currency depreciation or appreciation. Honohan and Lane (2004) explained that depreciation in exchange rate is documented through more quickly hooked on inflation rather than sort out exchange rate appreciations [8]. West (2003) described that fluctuation in the exchange rate is useful in the future for economic variables such as per price, money, interest rate and incomes [23].

The exchange rate prediction can be helpful for the macroeconomic fundamental indicator. Barkoulas *et al.* (2001) reported almost the influence of exchange rate variation on trade flows and volume inconsistency. Volatility in exchange rate discourages the trade expansion and minimizes its inducements [4]. Guo (2008) found a proportional study and carried out exchange rate appreciation and increases in Russia GDP while it decreases GDP in China and Japan [6]. The findings of Suliman (1996) indicate that no common trends are existent between investment growth, output growth and fluctuation of the exchange rate. Recently rapid expansions of the studies that examine the special effects of exchange risk on bilateral imports and exports around the globe for both developing and developed countries [28]. Schnabl (2009) found exchange rate instability negatively influence on growth rate in both East Asia and emerging European countries. This negative impact of growth rate also has been connected with instability in macroeconomic and exchange rate [22]. Oskooee *et al.* (2014) reported that volatility in the exchange rate has a negative effect the China and UK trade on an individual at the level [27].

The hypothesis of the study.

H0 = There are no significant relationships between real exchange rate and macroeconomic variables (CAB, GDP, LI, OP, FDI and CPI)

H1 = There are significant relationships between real exchange rate and macroeconomic variables (CAB, GDP, LI, OP, FDI and CPI)

Data Descriptions. For this study, secondary time series data was used from 1995 to 2019 and deliver 25 series of observations. All of the variables utilized in this study in the nature of quantitative. The data set is obtained from World Bank Development Indicator, State Bank of Pakistan, Business recorder, and also some information and findings related to data was collected from the former report, official website and some research papers.

Data Analysis Tool. E-views 10 statistical application software was utilized for hypothesis testing and empirical data analysis.

III. METHODOLOGY

The econometric multiple regression techniques is used to establish the influence of macroeconomic variables on the exchange rate. This statistical model is the sequence of developing an association between some of the variables in the mathematical form of the

equation, which indicate that how a variable statistically relates to other some of the variables. This type of model is also used by Hussain (2016) [9]. The statistical model is as follow:

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 1X4 + \beta 2X5 + \beta 2X6 + \varepsilon \quad (1)$$

Where:

Y = Exchange Rate against dollar (EXR)
β0 = Constant
X1 = Current Account Balance (CAB)
X2 = Gross Domestic Product (GDP)
X = Lending Interest (LI)
X4 = Trade Openness (OP)
X5 = Foreign Direct Investment (FDI)
X6 = Consumer Price Index (CPI)
ε = Error Term

The above equation (1) can be written as

$$Y = \beta 0 + \beta 1CAB + \beta 2GDP + \beta 3LI + \beta 4OP + \beta 5FDI + \beta 6CPI + \varepsilon \quad (2)$$

Therefore, in equation (2), "Y" indicate the dependent variable of EXR, and "β0" represents the sing of constant "β1" is the coefficient of the explanatory variable of (CAB), "β2" is the coefficient of the second variable of (GDP), "β3" represent the coefficient of a third variable (LI), "β4" represents the coefficient of forth variable of (OP), "β5" represents the coefficient of a fifth variable (FDI), "β6" is represent the coefficient of last variable (CPI).

IV. EMPIRICAL FINDINGS

Table 1: Descriptive Statistics of Exchange Rate (EXR).

	EXR	CAB	GDP	LI	OP	FDI	CPI
Mean	75.4084	-2.02332	890.5392	11.4108	-3.51937	1.71E+09	86.27393
Median	61.93	-1.90988	908.1	10.5	-4.84	1.33E+09	64.23501
Maximum	154.95	4.823228	1482.4	20	2.912995	5.59E+09	172.91
Minimum	31.64	-9.20432	454.28	5.75	-11.9187	3.08E+08	30.33286
Std. Dev.	29.82916	3.317666	372.2988	3.85457	4.411706	1.47E+09	48.50693
Skewness	0.7248	0.138035	0.191165	0.449113	-0.07499	1.4982	0.476905
Kurtosis	3.135155	2.967535	1.494927	2.541467	1.871851	4.471404	1.661504
Jarque-Bera	2.207927	0.080488	2.511897	1.059439	1.34918	11.60776	2.813881
Probability	0.331554	0.960555	0.284806	0.58877	0.509365	0.003016	0.244891
Sum	1885.21	-50.5831	22263.48	285.27	-87.9842	4.27E+10	2156.848
Sum Sq. Dev.	21354.7	264.1657	3326553	356.585	467.1156	5.20E+19	56470.13
Observations	25	25	25	25	25	25	25

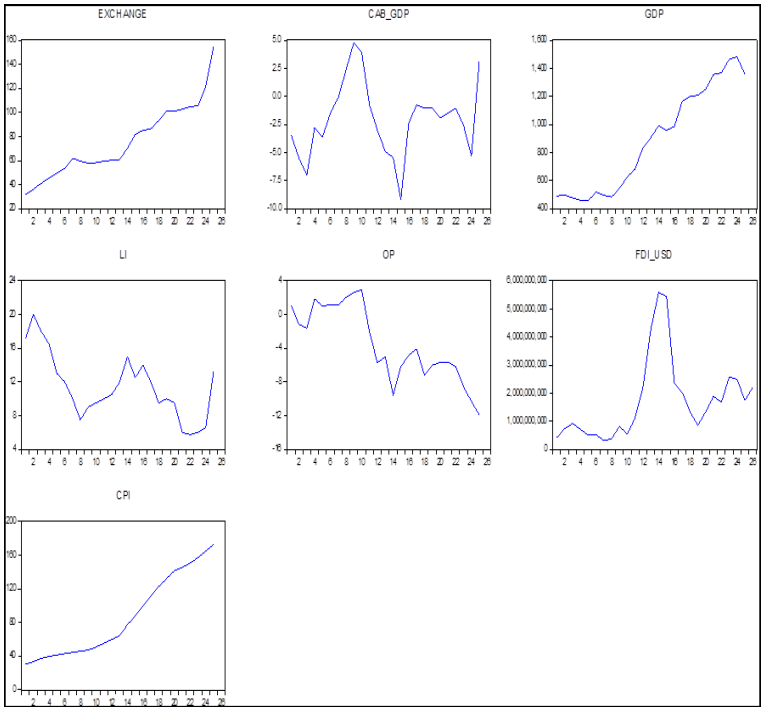
Table 1 represents the descriptive statistic outline of all nominated variables. The descriptive statistic result shows the observation numbers, means, maximum, minimum value, standard deviation, kurtosis and Jarque-Bera test.

H0 = The data is normally distributed
H1 = The data is not normally distributed

In this case of EXR, CAB, GDP, OP and CPI, the Jarque-Bera is insignificant. The null hypothesis accepts to it means that data is not distributed normally. In the case of FDI are significant to indicate that data is not distributed normally. The result of Skewness and Kurtosis represent that distribution is equilibrium these same result also found with Salamat *et al.,* (2019) [21].

Graphically Representation of Data

The above correlation matrix table outline correlation with all variables. The EXE has a positive correlation with all variable except LI and OP have negative but moderate with FDI. CAB has a moderate positive correlation with OP, negative moderate with LI, and there is a correlation with GDP and CPI. GDP has a negative correlation with OP and LI, positive with CPI and moderate with FDI. OP has a negative correlation with FDI, CPI and positive moderate with LI. FDI has a moderate correlation with CPI and no correlated with LI. CPI has a negative correlation with LI according to Fuzzy firm rules.



Correlation Matrix

Table 2: Pearson Correlation.

Variables	EXR	CAB	GDP	OP	FDI	CPI	LI
EXR	1						
CAB	0.1915282	1					
GDP	0.9053469	-0.031705	1				
OP	-0.8044652	0.2864168	-0.8781405	1			
FDI	0.2770143	-0.5374308	0.4393245	-0.636368	1		
CPI	0.9602768	0.07344725	0.973277	-0.825753	0.2910404	1	
LI	-0.5408284	-0.4274785	-0.5479659	0.2394382	-0.0147779	-0.55813	1

Multiple Regression Analysis:

Table 3: Regression Equation (OLS).

Variables	Coefficient	Std. Error	t-Statistics	Prob.
CPI	1.072134*	0.10738	9.984505	0
CAB	1.795063*	0.36798	4.878151	0.0001
GDP	-0.095711*	0.01545	-6.19484	0
LI	-0.406046	0.362294	-1.120765	0.2771
OP	-2.309887*	0.616121	-3.749079	0.0015
FDI	3.72E-09*	1.09E-09	3.414908	0.0031
C	61.9246*	8.75433	7.073596	0
R-squ	0.984988		Mean dep var	75.4084
Adj R-squ	0.979984		S.D. dep var	29.82916
S.E. of reg	4.220118		Akaike info criterion	5.949099
Sum square resid	320.5691		Schwarz criterion	6.290384
Log-likelihood	-67.36374		F-statistic	19.68449
Durbin-Watson stat	2.145259		Prob(F-statistic)	0

*** significant 10% ** significance 5% * significance 1%

In the above table, we found the associations of the exchange rate with macroeconomic variables. The outcome shows Consumer Price Index (CPI) is positive significant 1% at level; Current Account Balance (CAB) significant positively at 1% level, Gross Domestic Product (GDP) is significant negatively 1% at level, Lending Interest (LI) is insignificant, Trade Openness (OP) negatively significant 1% at the level. Foreign Direct Investment (FDI) is positively significant 1% at the level. The coefficient value determent (R-squared) is 98.49%. It means that 98.49% of the variation of the dependent variable with regression equations. The F-statistics value is 19.68449, which is significant at 1%, which indicate the model is good and appropriate better.

Serial Correlation LM test: The Table 4 LM test result shows that the P-value is 0.6763 (67%), which is so greater than 5% (P>0.05) which indicate that we accept the Alternative Hypothesis (H1) and the model is free from same autocorrelation result also found with Naseem *et al.* (2019) [18].

H0 = there is no serial correlation

H1 = there is serial correlation

Table 4: Breusch-Godfrey Serial Correlation LM Test.

F-statistic	0.258396	Prob. F(2,16)	0.7755
Obs*R-squared	0.782222	Prob. Chi-Square(2)	0.6763

Heteroskedasticity ARCH Test:

Table 5: Heteroskedasticity Test: ARCH.

F-statistic	0.376231	Prob. F(2,20)	0.6912
Obs*R-squared	0.833955	Prob. Chi-Square(2)	0.659

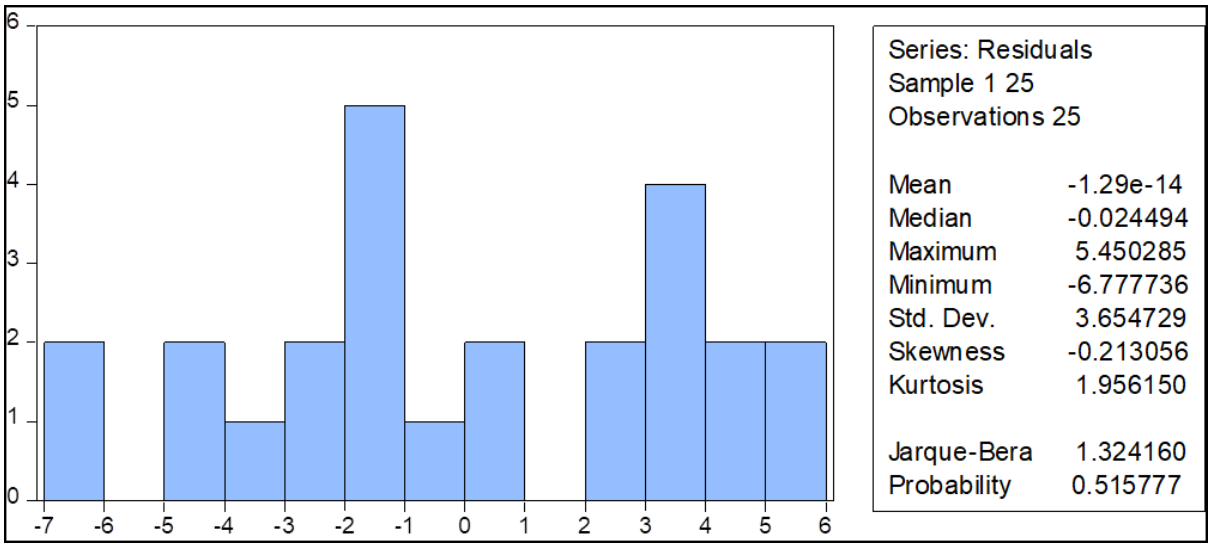
H0 = there is Heteroskedasticity

H1= There is homoscedasticity

In the above table, we found that the R-squared value is insignificant; it means there is homoscedasticity. And accept the null hypothesis.

Residual Normality Test:

The Residual Normality test result shows the Jarque-Bera value which is 1.324160, with the probability value of 51%, which means it's greater than 5% of significance at level. So, the normality distribution of the null hypothesis cannot be excluded. The Jarque-Bera result indicates that error terms are normally distributed through.



V. CONCLUSION

The exchange rate is one of the utmost significant determinant economic growth levels of a country. The exchange rate has a vital role in leveling the country trades which are critical for each economic market in the world. Pakistan's economy is a developing economy, and the exchange rate with the US dollar is very significant for foreign trades. To examine the association between macroeconomic variable and exchange rate the Ordinary Least Square (OLS). Consumer Price Index (CPI) is positive significant 1% at level; Current Account Balance (CAB) significant positively 1% at level, Gross Domestic Product (GDP) is significant negatively 1% at level, Lending Interest (LI) is insignificant and show no significant relations with the exchange rate, and Trade Openness (OP) negatively significant 1% at the level and Foreign Direct Investment (FDI) are positively significant 1% at the level. The GDP and OP are forced the exchange rate negatively it means that this variable value decreases the exchange rate is going up, but in case of CPI, CAB and FDI are vice versa. To switch volatility of exchange rate for economy boost essential be valuate and look at the variable macroeconomic significance.

REFERENCES

[1]. Aftab, M., Abbas, Z., & Kayan, F. N. (2012). Impact of exchange rate volatility on sectoral exports of Pakistan:an ARDL investigation. *Journal of Chinese Economic and Foreign Trade Studies, 5*(3), 215-231.

[2]. Alba, J., & Papell, D. (1998). Exchange rate determination and inflation in Southeast Asian countries. *Journal of Development Economics, 55*, 421-437 , http://dx.doi.org/10.1016/S0304-3878(98)00043-1v.

[3]. Aliyu, S. U. (2009). Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth in Nigeria: An Empirical Investigation. *Research Journal of International Studies,* (11), 4–15. https://mpra.ub.uni-muenchen.de/16319/.

[4]. Barkoulas, J., Baum, C., & Caglayan, M. (2001). Exchange Rate Effects on the Volume and Variability of Trade Flows. *Journal of International Money and Finance, 21*(4), 481-496, https://econpapers.repec.org/scripts/redir.

[5]. Bhutt, S. K., Rehman, M. u., & Rehman, S. U. (2014). Analysis of Exchange Rate Fluctuations: A Study of PKR VS USD. *Journal of Managerial Sciences, VIII*(1), 41-60.

[6]. Guo, J. (2008). "The Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth: A Comparative Analysis for Russia Japan and China". *Research Journal of International Studies*, 98–111.

[7]. Hakkio, C. S. (1980). Expectations and the forward exchange rate. *National Bureau of Economic Research Working Paper NBER Working Paper No. 439*, 1-43.

[8]. Honohan, P., & Lane, P. (2004). Exchange rates and inflation under Emu: an update. IIIS,. *National bureau of economic research, Discussion Paper No., 31,* 1–19.

[9]. Hussain, A., Sabir , H. M., & Kashif, M. M. (2016). Impact Of Macroeconomic Variables On Gdp: Evidence From Pakistan. *European Journal of Business and Innovation Research, 4*(3), 38-52.

[10]. Iyeli, I. I., & Utting, C. (2017). Exchange Rate Volatility And Economic Growth In Nigeria. *International Journal of Economics, Commerce and Management, V*(7), 853-895, http://ijecm.co.uk/.

[11]. Jilani, S., Sheikh, S. A., Cheema, F.E.A., & Shaik, A.U.H. (2013). Determinants of National Savings in Pakistan: an Exploratory Study. *Published by Canadian Center of Science and Education, 9*(5), 254-262.

[12]. Juhro, S. M., & Phan, D. H. (2018). Can Economic Policy Uncertainty Predict Exchange Rate And Its Volatility? Evidence From Asean Countries. *Buletin Ekonomi Moneter Dan Perbankan,, 21*(2), 221-268, DOI: https://doi.org/10.21098/bemp.v21i2.974.

[13]. Mahmood, I., Ehsanullah, M., & Ahmed, H. (2011). Exchange Rate Volatility & Macroeconomic Variables in Pakistan. *Business Management Dynamics, 1,*(2), 11-22.

[14]. Mohsin, M., Naiwen, L., Majeed, M. K., & Naseem, S. (2018). Impact of Macroeconomic Variables on Exchange Rate: An Evidence from Pakistan. *Advances in Time Series Data Methods in Applied Economic Research, Springer Proceedings in Business and Economics,*, 325-333.

[15]. Mohsin, M., Naseem, S., Muneer, D. S., & Salamat, S. (2019). The Volatility of Exchange Rate Using GARCH Type Models with Normal Distribution: Evidence from Pakistan. *Pacific Business Review International, 11*(12), 124-129, http://www.pbr.co.in/.

[16]. Naseem, S., fu, G.l., Mohsin, M., Rehman, M.Z.U., & Baig, S.A. (2018). Volatility of pakistan stock market:

A comparison of Garch type models with five distribution. *Amazonia Investiga, 7*(17), 486-504, http://www.udla.edu.co/revistas/index.php/amazonia.
[17]. Naseem, S., FU, G.L., Mohsin, M., Aunjam, M. S., Rafiq, M.Z., Jamil, K., *et al.* (2020). Development of an inexpensive functional textile product by applying accounting cost benefit analysis. *industria textila, 71*(1), 17-22, DOI: 10.35530/IT.071.01.1692.
[18]. Naseem, S., Fu, G.L., ThiLan, V., Mohsin, M., & Rehman, M.Z.U. (2019). Macroeconomic Variables and the Pakistan Stock Market: Exploring Long and Short-Run Relationships. *Pacific Business Review International, 11*(7), 62-72, http://www.pbr.co.in/.
[19]. Oforegbunam Thaddeus, E., & Nnneka, , A. (2014). Exchange Rate, Inflation and Interest Rates Relationships: AnAutoregressive Distributed Lag Analysis. *Journal of Economics and Development Studies, 2*(2), 263-279.
[20]. Rafiq, M.Z., Jun, J.C., Naseem, S., & Mohsin, M. (2019). Impact of Market Risk, Interest rate, Exchange rate on Banks stock return:Evidence from listed Banks of Pakistan. *Amazonia Investiga, 8*(21), 667-673, http://www.udla.edu.co/revistas/index.php/amazonia-investiga.
[21]. Salamat, S., Lixia, N., Naseem, S., Mohsin , M., Rehman, M. Z.U., & Baig, A. S. (2019). Modeling Cryptocurrencies Volatility Using Garch Models: A Comparison Based On Normal And Student's T-Error Distribution. *Entrepreneurship And Sustainability Issues, 7*(3), 1580-1596, http://doi.org/10.9770/jesi.2019.7.3(11).
[22]. Schnabl, G. (n.d.). Exchange Rate Volatility and Growth in Emerging Europe and East Asia. *Open Econ Rev,, 20*(4), , 565-587, DOI: 10.1007/s11079-008-9084-6.
[23]. West , K. (2003). Monetary policy and the volatility of real exchange rates in New Zealand. *National Bureau of economic research working paper number 10280,* 1–32.
[24]. Iqbal, M., Ehsanullah, M., & Habib., A. (2011). . Exchange rate volatility and macroeconomic variables in Pakistan. *Business Management Dynamics, 1*(2), 11-22.
[25]. Mahmood, I., & Ali, S. (2011). "Impact of exchange rate volatility o macroeconomic performance of Pakistan". *International Research Journal of Finance and Economics,64,* 54-65.
[26]. Mordi, C. (2006). Challenges of exchange rate volatility in economic management in Nigeria;in dynamics of exchange rate in Nigeria Central Bank of Nigeria Bullion. *Journal of Finance and Economics, 30*(3), 17–25.
[27]. Oskooee, M. B., Hegerty, S., & Zhang, R. (2014). "Exchange-rate risk and UK-China trade:evidence from 47 industries". *Journal of Chinese Economic and Foreign Trade Studies, 7*(1), 2-17, http://dx.doi.org/10.1108/JCEFTS-04-2013-0011.
[28]. Suliman, O. (1996). Economic Growth, Investment, and Exchange Rate Changes in a Poor-Capital Economy. *Managerial Finance, 22(5)*, 41-47, http://dx.doi.org/10.1108/eb018562.
[29]. Zamir, M., Amin, A., Ullah, S., & Khan, U.S. (2017). Exchange Rate Volatility in Pakistan and Its Impact on Selected Macro Economic Variables. *Scientific Research Publications*, 167-187.

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