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Impact of Real Effective Exchange Rate on Balance of Trade: A Case Study of Pakistan

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Abstract- Primary aim of this paper is to indicate the impact of the real effective exchange rate (REER) on balance of trade (BOT) in Pakistan by applying time-series analysis from 1981 to 2015. The literature of independent variables suggests correlation and co-integration between these variables. The first step is to proceed to the ARDL model established on directing a unit-root test for the variables one by one deciding their level of alliance or integration. The outcomes of unit root test indicate that each variable in this analysis is integrated of order "0" and "1" which shows that few of the variables are stationary at level while some are stationary at the 1st difference. Such results suggest us to apply Autoregressive Distributed Lags (ARDL) model & Error Correction Mechanism (ECM). The outcomes of bound testing indicate that the model has a long-run and the short-run affiliation of dependent variable with independent and control variables. The investigation indicates the significant and positive relation among BOT and REER in long run with control variables e.g. gross domestic product (GDP), foreign direct investment (FDI) and foreign exchange reserves (FER). It means that misalignment in the real effective exchange rate (REER) is the cause of deficit in the balance of trade (BOT) in short run and long run. Near about 75% exports of Pakistan depends upon agricultural goods i.e. raw cotton, textile items, leather and sports equipment etc. Pakistan should diversify its trade to consumer goods, chemical items, electrical & electronic items and capital goods. This investigation also reveals that in Long Run a significant relationship between real effective exchange rate (REER), deterioration in terms of trade (TOT) and foreign debt by applying in which a channel "trade to exchange rate" found having uni-directional causality and running actively, by indicating the significant positive relationship between balance of trade and the real effective exchange rate (REER) in long run. The increase in the volume of global trade gets changes day to day with new dimensions.

Keywords: real effective exchange rate (REER), Error Correction Mechanism (ECM), Autoregressive Distributed Lags (ARDL), terms of trade (TOT), balance of trade (BOT)

I. INTRODUCTION

Pakistan is a developing country with a remarkable growth rate in the region. Economic theories justify that there is an association between Balance of Trade (BOT) and rate of exchange in developing economies. The trade balance is called favorable when exports are higher than imports. The positive trade balance is being called surplus and negative is recorded as a deficit. The surplus in trade balance means country's exports are more than its imports whereas deficit in trade is converse of it. The balance of trade (BOT) is influenced by the indicators of the exchange rate, trade agreements, and prices of manufactured goods at home, tariff & non-tariff related barriers and state of trade cycle at domestic and world market. This study focuses on policy prescription to see, how much real effective exchange rate (REER) impact trade performance.

Pakistan is suffering from the persistent deficit in trade balance for the last three decades but in 1990's it was experienced 4.5% of gross domestic product (GDP). Some of the studies on trade deficit by applying cross-country data, but as in case of Pakistan, are not usually involved in such cross-country investigations (Jawaid & Raza, 2012). The basic aim of the investigation is to study the impact of the real effective exchange rate (REER) on balance of trade (BOT) both in long-run and short-run as well as to explore other determinants incase of Pakistan.

AbuDalu et al., (2014) studied the association among the real effective exchange rate (REER) and economic growth and development as a remarkable subject, from descriptive (positive) and policy prescription (normative) point of view as well. Most of the under-developed nations who fix their exchange rate implicitly or explicitly to the currency of other nations (i.e. US dollar), they experience

inflation rate higher than the other countries. Such economies often face a persistent deficit in their current account (BOT) and eventually devaluate their currencies. Consequently, contraction (recession) and inflation are invited and put the economy into the practice of devaluation, causing harmful effects on BOT and economic growth. A sustainable economic growth is accompanied by a huge volume of exports and high rate of investment.

Enriquez et al, (2015) investigated in their study 'Shifting Tides: The World Economic conditions for 2015–25' that World trade scenario and policies have a greater impact on global trade, growth, and economic activity. The main purpose of policies regarding trade is to upgrade local output, export promotion measures, protection to consumer and domestic industries etc. Pakistan needs such commercial policies, i.e. exchange control, the structure of tariff and quota, import control that enhance economic growth and improve the trade balance. Szczurek, (2005) studied that high volume of exports give rise to a surplus of the current account (BOT), resulting appreciate domestic currency generally unless State Bank interfere in the foreign exchange market and forms foreign reserves. Real effective exchange rate appreciated due to the irregular interference of State Bank results in inflation whether its intervention maintains fix exchange rate. Szczurek, (2005) further studies that due to free capital mobility in the world, Real Exchange rate also appreciates. Sharp economic growth invites inflow of foreign capital. Most of the investors of industrial nations try to gain high returns by diversifying their investment portfolio. Capital inflow pressurizes the nominal exchange rate to be appreciated. For example, when investors of other countries plan to purchase securities (prize bonds and stocks as well); the demand for the currency of growing market will rise, because the local currency of active market is obtained. Simply, we can say that sustainable economic development (accompanied by economic growth) give rise to currency appreciation and improve the standard of living while currency is sharply depreciated due to the failure of economic development.

Danmola et al., (2013) studied that for recovery in the balance of trade the competency of exchange rate devaluation has been an issue over a long period of time which provide meaningful advantage to the policymakers and economists. It is purposed by the Keynesians economists, spending switching presumes that actual (real) decline makes to a greater extent cut-throat to locally produced exchanged goods. After decline or devaluation in currency, the imports of the economy decrease and government accentuate the domestic firms and when domestic production increases the exports of the nation will also increase. Hence, encouraging exports and discouraging imports are attested on switching affect presumption. Shahbaz, Islam, & Jalil, (2010) investigation advocated the development in a country out of eight is only originated in the balance of trade. Furthermore (Bahmani & Niroomand, 1999) studied that the devaluation in currency leads to development in the trade balance. The matter whether or not behind devaluation balance of trade will get improved and will become more significant in indistinguishable crisis (banking and currency crisis) in 1990's. It is not possible to amend either by application of the effective fiscal policy or exchange rate policy like devaluation (Grubel, 1979). On the contrary, it is demonstrated that the depreciation can boost a nation's balance of payments but it is not being developed by the trade balance. It indicates that capital brings prosperity. So it can be declared that the instrument of reduction should be monetary in type and it must include the portfolio stock arrangement (Iyoboyi and Muftau, 2014).

Pakistan should develop its beneficial trade policies and also make adjustment mechanism with its trading partners, but nothing has been in this regard consequently trade gap is widened. So it can be the research question for scholars "what to do?" in this regard (Mohammad, 2010). The deficit in the trade balance happens when country's imports exceed than exports. Pakistan since its independence is facing continuously deficit in the balance of trade (BOT) except three years which were the very satisfactory situation for the developing economies like Pakistan. The percentage of increase in BOT is much deteriorated (Aurangzeb and Anwar, 2012). Pakistan is facing deterioration in terms of trade and deficit in trade balance for a long time which is the adverse situation for the economy of Pakistan. The policymakers and economists should take effective steps to cop up this devastating situation. "Only three fiscal years in which trade balance was a surplus in the entire history of Pakistan" shows poor economic performance.

II. A CASE OF PAKISTAN

Pakistan is persistently facing a deficit in the trade balance in the era of global trade which is showing questionable trade performance. The continual deficit in the trade balance is may be harmful to an economy especially of developing countries like Pakistan. Historically, only three years has been observed when Pakistan's trade balance was in surplus. Since 1947 only for three years, Pakistan celebrated the surplus in the balance of trade. Firstly, in the period of 1951-52 Pakistan attained foreign exchange by exporting a large quantity of raw material. Secondly in 1971-72, when Pakistan made devaluation in its currency and impose a high rate of tariff by importing luxuries, at that time provide facilities to domestic exporters in the form of subsidies and bonuses. Due to the efforts of Government the volume of imports was discouraged. Thirdly, the balance of trade was in surplus by Rs.28.934 billion in 2003. Different economic policies, reforms, and strategies were adopted to improve the balance of trade but all in vain.

In 2015, Pakistan's trade deficit was Rs.180.8 billion, while it has been widened in the year of 2016 by PKR 242 billion till the month of September. Exports are of value PKR 161.3 billion which is fall of 10.3% and imports increased to 403.3 billion which are about 11.8%.During the period of 1957 to 2016, the average of Pakistan's trade deficit was 28948.29 PKR million. In June 2003, highest trade surplus in the history of Pakistan was PKR 6475 million. But in June 2016 trade deficit reached at its highest (i.e. 294469 PKR million) ever in the history of Pakistan (Pakistan Bureau of Statistics).

RESEARCH HYPOTHESIS

HYPOTHESIS 1**:** There is no short-run impact of the real effective exchange rate on the balance of trade in Pakistan.

HYPOTHESIS 2**:** There is no long-run impact of the real effective exchange rate on the balance of trade in Pakistan.

III. LITERATURE REVIEW

A part of international finance reviewed in which the worst terms of trade were examined that influence the trade balance (Mcpheters & Stronge, 1982), they give experimental computations with proofs and intuition study which help the reflection that worst the terms of trade and boost a trade balance of economies but it happens at the time when the Marshall-Lerner assumptions are satisfied. Previous research of (Galfason & Risager, 1984; Merguez, 1990; Mohsen, 1986; Warner & Kreienin, 1983) computed the price docility that is significant in supporting the reflection of the decline in conditions of trade that present favorable trade balance.

Two authentic studies that concentrated on US divergent practice from predicted resilience, (Mcpheters & Stronge, 1982) exercise cross-spectral inquiry through which computed that the United States relished a favorable balance of trade before trail (lag) of 2 years i.e. influenced over price volatility. (Mcpheters & Stronge, 1982) is additionally denounced by (Haynes & Stone, 1982) investigated the US terms of trade and trade balance are associated precisely. The computations bring that decline in the terms of trade cannot hike the trade balance favorably for the era in which it is investigated by the (Mcpheters & Stronge, 1982).

Commonly theories of global trade confront the interruption by governments of economies which are as a result of corresponding interest groups and extensive pressure on the groups of local industries. These industries can vastly damage by the imports, so in order to preserve the global trade do intense efforts (Limao & Venables, 2001) international trade is considered as an opportunity for foreign investment. But in other words (Chaisrisawatsuk & Chaisrisawatsuk, 2007) theoretical assumption of study is that international trade and foreign investment are twins like the producers who get benefits of the comparative edge of price with the application of vertical alliance between the global economies. Ciesilk, (2007) investigated that two directional linkage exists among foreign direct investment (FDI) and international trade. Hence it is difficult to analyze that which type of commodities is directly influenced by inwards & outwards as well foreign direct investment (FDI) if these are exchanged globally. Past investigations indicate that there is solid relationship among global trade and foreign direct investment (FDI), but it is a substantial association in the industrial sector.

Some of the studies explore that the trial in domestic industries, as well as international market, will be excessively increased because of the increase in global trade (Chaisrisawatsuk & Chaisrisawatsuk, 2007). Further imports and exports can put stress on local manufacturing sector and they try comprehensive efforts to safeguard their trade potential (Limao & Venables, 2001). The volume of trade can be enhanced at the individual level and internationally. At micro stage government can increase the volume of trade by initiating a numerous agreements and at a macro stage the small producers can boost the international trade and foreign direct investment (FDI) through the intra industry trade of commodities i.e. industrial equipment's, raw materials and substitute of their goods between them (Chaisrisawatsuk and Chaisrisawatsuk, 2007). The openness of global trade enhances the movement of cheaper goods and services but the invitation of investment gives the improved scenario for the hope of effective resources. Only the economies enjoy the international market benefits and vast global trade which have the durable competitive benefit (Chaisrisawatsuk and Chaisrisawatsuk, 2007). Zakaria, (2014) investigated empirically in this paper by applying time-series analysis from 1981 to 2008 that trade liberalization stimulates exports, imports and improve the balance of trade; in case of exports exceed over imports. Other variables like terms of trade (TOT), real exchange rate, foreign exchange market fluctuations and foreign & domestic incomes affect imports, exports and balance of trade in expected directions. In addition to it, trade liberalization also stimulates income and price elasticity of imports, exports and trade balance.

FACTORS AFFECTING BALANCE OF TRADE (BOT)

From past investigations, it is studied that tariff, transportation cost, terms of trade, inflation rate, foreign direct investment (FDI), Gross Domestic Product (GDP), and effective exchange rate are the roots that deficit the trade balance in developing economies. Past study examines that there exists a negative or inverse relationship between trade and terms of trade and similar relation exists among tariff and trade. The volume of trade declined in responsiveness of increase in terms of trade. When an economy increase its terms of trade (TOT) by 10 percent it reduces the trade size by 44 % (Calderon et al, 1999). Transportation price has also a negative relationship with the trade volume. If the span of the trade route between countries increases it lead high cost of transportation and resist volume of trade. Developed countries also face the situation of trade deficit like developing economies due to the following determinants which are similar in industrialized and developing countries and numerous research studies agree upon these determinants (variables) (Calderon, Chong, & Loayza, 1999).

Exchange rate, foreign direct investment and gross domestic product (GDP) are the common roots that decline the trade balance (Falk, 2008). Tamirisa, (1999) studied that the previous investigations show that the foreign direct investment (FDI) has an inverse relationship with the balance of trade (BOT). Due to rise in foreign direct investment (FDI) exports increased but imports do not significantly affect. The rise in foreign direct investment (FDI) leads the international trade barriers to increase day by day. Gross domestic product (GDP) and trade balance have direct or positive relation if per capita income increases and exports also increase. The real effective exchange rate (REER) also has a positive and significant impact on trade volume. The volume of exports (sales) depends upon economic position and size of the economy.

THE REAL EFFECTIVE EXCHANGE RATE (REER)

Mismanagement of effective exchange rate is such a situation where the real exchange rate varied from its ideal condition. When currency depreciation from its desired value is accorded as under 'evaluation', yet when appreciates from its desired perception, it is accorded as 'under evaluation'. Usually the over evaluation is expected advantageous for the economic prosperity of nation but in fact, the under evaluation of nation is more desired for the economy's activities of an economy (Razin & Collins, 1997). Asma & Nabeela, (2011) investigated, in Long Run a significant relationship between exchange rate, deterioration in terms of trade (TOT) and foreign debt by applying Johnson Approach, in which a channel "trade to exchange rate" found having uni-directional causality and running actively. In association to the balance of trade to real effective exchange rate (REER), exchange rate policy is an important issue. Normally, in the experimental survey and in the framework of Marshall Learner condition and J- curve thought it was vastly investigated the devaluation. Rincon, (1999) studied the association among real exchange rate and Balance of Trade (BOT) in Colombia and various approaches applied to investigate the significance of Marshall Learner condition. The real exchange market is very significant in an economy. Pakistan's Forex market is small as compared to the emerging economies and it is required to expand it by policy work substantially. Empirical analysis of market efficiency from the period of 2006 to 2013 shows

for Pakistani rupee against Australian dollar, yen, US dollar, Euro and Swiss franc taking monthly data on spot & forward exchange rate in which results were found that forward exchange rate predicts future exchange rate very closely (Bashir, R., Shakir, R. & et al., 2014).

Behmani & William, (2013) investigated in their study whether outcomes of the previous investigations greet the Marshall-Learner condition. Bahmani et al., (1999) investigated the condition of Marshall Lerner (ML) of advanced and underdeveloped economies for the time span of 1960- 1992. They researched that the previous investigations in which it was investigated, if the aggregate of price elasticity of the net exports and import products are higher than 1 then the total balance of trade will be improved. But if it is observed that imports and exports price are rigid, then the fast variation in the real exchange rate can ruin the balance of trade in short period of time. Rincon, (1999) investigated the positive and a significant relationship among real exchange rate (RER) and trade balance in Colombia. He applied various approaches to investigate the significance of the Marshall Learner condition & Bicker-dike Robinson-Metzler's (BRM) theorem and Johansen & Juselius for the Marshall Learner (ML) perception in the economy of Colombia. This study will check the relation among real exchange rate test and balance of trade (BOT). Husain & Farooq, (2007) studied that the volume of economic activities is very responsive to continue distortion of real effective exchange rate(REER).

Rom Past studies researchers investigate the conditions of trade, tariff, GDP, the real effective exchange rate and FDI are the roots that deficit the trade balance in less develop economies (Calderon et al., 1999). Foreign Direct Investment (FDI), Gross Domestic Product (GDP) and the Real Exchange Rate (RER) are very common roots which deficit the current account (Falk, 2008). Akbostanci, (2002) investigated that in the beginning the devaluation in currency become the reason of the low level of balance of trade but after a time span depreciation in currency boost the balance of trade (BOT) and shows the J shape. To show the relation among trade balance and the real effective exchange rate, the J-curve is significant. (Liu, Fan & Shek, 2006) investigated the similar (Akbostanci, 2002) relation among the balance of trade (BOT) and real exchange rate (RER) in the economy of Hong-Kong. Except all of these (Onafowora, 2003) investigated the significant relation in which the countries of Asia among their mutual trade of USA, Thailand, Japan, Malaysia and Indonesia.

Ito, Isard & et al., (2014) studied that when foreign investors pursue high returns by diversifying their portfolio and purchase Prize bonds, stocks, and local currency, it leads to capital inflow in the emerging market and nominal exchange rate of that region is appreciated. Shirvani & Wilbratte, (1997) studied the relationships among trade balance in the nations of Japan, Germany, UK, Italy, USA and France which are known as nations of G7. The conclusion of this study shows the volatility in the rate of exchange for a short run that the Marshall-learner condition is not significant, yet after two years volatility of exchange rate can raise the trade balance. Steven, B. Kamin, and John H. R., (1997) investigated the positive and long run relational impact between output and Real Exchange Rate (RER) on the basis of applying VAR model for analysis and concluded that real devaluation leaves contractionary effects on economic growth and leads to high rate of inflation in Mexico. Further, substantial changes in the economic structure of Mexico and its financial position qualify future application of concluded result to target competitive exchange rate.

Rizwana et al., (2014) investigated empirically, the relationship between the efficiency of forwarding and spot exchange rate with reference to Pakistan's Economy. They used monthly data from the Central bank of Pakistan & KIBOR rates from July 2006 to December 2013, in which they found that forward exchange rate does not reflect fully the entire information available. Due to market inefficiency, speculators may get benefits because of volatility. Foreign exchange market of Pakistan is smaller as compared to emerging economies and comprehensive policy work is required.

FOREIGN DIRECT INVESTMENT (FDI)

Many of the multinational corporations studied the contradiction relationship among the foreign direct investment (FDI) & international trade, and numerous latest investigations on global trade check are growing (Blonigen, 2005). The restrictions on trade boost the foreign direct investment (FDI).When restrictions i.e. transportation cost and tariff etc. increased then trade volume reduces and firms replicate the same plant in international markets to overcome the problem of trade deficit. Such type of investment in various countries which are used to increase trade volume is called as horizontal Foreign Direct Investment (FDI).The horizontal foreign direct investment (FDI) is the close substitute of global trade. But on another way cost of production is also a crucial factor, so in order to handle the issue of cost of production; producers divide production process into different phases. The phase in which huge labor is

needed is done in developing economies where wages are comparatively small and the phase in which extensive capital, expertise and modern technology are required inserting in industrialize economies. Such an investment is known as Vertical Foreign Direct Investment (FDI).Such investment creates potential contingencies for global trade. Experts are of the opinion that vertical foreign direct investment (FDI) is used for both types of economies and is mostly operated in developing and developed where cost minimization is basic objective, while horizontal FDI is done in industrialized economies (Aizenman & Noy, 2005).

Many modern studies concluded the relationship between inflow of the foreign direct investment (FDI) and trade (Do and Levchenko, 2004; Rose and Spiegel, 2004; Rui, Norman, & Luis, 2005). The significant situations which are studied from the previous investigations are that if the foreign direct investment (FDI) boosts then global trade size improves positively. If foreign direct investment (FDI) increases then economic growth and factors of production are also increased. Portes & Rey, (2005) investigated in their study, the positive relationship between the global trade and financial openness. They investigated that Foreign direct investment (FDI) and international trade can test (verify) the same gravity regression model. (Aviat & Coeurdacier, 2004) further investigated the methodological technique of (Portes & Rey, 2005) and studied the tradition of global trade in assets and goods. The benefits of economies of scale are greater than the commodities produced domestically. Due to this benefit the foreign direct investment (FDI) that is encouraged. The decrease in trade cost foreign direct investment (FDI) is discouraged. The prosperity period of foreign direct investment (FDI) was 1990's when the trade restrictions (tariff and transportation cost etc.) were higher (Neary, 2009).

Every business organization tries to raise the demand for its products. The result of another investigation shows that if the benefits of the products increase then their demand for that product also increases (Brainard, & Riker, 1997). (Lael Brainard, A theory of Multire - National Companies (MNCs) and trade with a trade - off among closeness & consolidation, 1993). As mentioned in above study, there are significant factors through which demand for domestic production may be increased. Cost of production can be controlled by earning goodwill in the society, customer and brand locality, easy approach to markets and specifically designed features of product for particular market scenario. (Rene and Leo, 1998) studies that if the above - mentioned components are achieved strongly then the demanded products may also grow. The increasing demand of products couldn't be met by a sole firm that's why demand for the identical type of commodities composed by the other business organizations also increased, but not manufactured in the host economy. In such situation, some goods are produced in this economy. Hence due to this reason FDI and exports boost-up.

Fontangne, (1999) studied that from the last decades following are the reasons due to which foreign direct investment (FDI) increased amazingly.

- The transparent and easy process of transport and communication, better information, and technology, small firms merger with successfully running firms and improvement in existing weak firms to be profitable firms.
- Acceptance of global trade between the industrialized economies, make useful efforts to be a part of European trade, and the very critical sector of global trade is like telecommunication that is decontrolled due to international trade competition.
- The governments of developing economies try to enhance arrival of foreign direct investment (FDI). In previous two decades, the percentage of FDI in developing economies increased drastically and now foreign direct investmentis 1/3rd of the total foreign direct investment.

TABLE OF STUDIES

Sr.No	Author Name/Journal	Reseah Question	Dependent Variable	Independent Variables	Model	Result
1	Sulman D Muhammad	Determinants of balance of trade	Trade Balance	FDI, REER, Foreign Income, Domestic Household Consumption	Regression	FDI, REER, Domestic household consumption have +ve impact and foreign income has –ve impact

2	Aurangzeb Anwar ul Haq	Factors affecting trade balance in Pakistan	Trade Deficit	FDI,GDP,ER,REM	Multiple Regression	GDP, FDI, REM have +ve impact but ER has –ve impact
3	Mohsin Abbas	Effect of trade deficit on the economy of Pakistan	Trade deficit	GDP,FDI,ER	OLS method of regression, Histogram	+ve relationship
4	Razin & Colline	Real exchange rate misalignments and growth	Economic Growth	ER	Simple Regression Model	ER has +ve impact oneconomic growth
5	Cesar Calderon Alberto Chong Norman Loayza	Determinants of current account Deficit in developing countries	Current account deficit	Public and private savings, External Savings, NI and ER	Reduce Form approach	Public and private savings, NI, External Savings have –ve but ER has +ve impact
6	Falk	Determinants oftrade deficit	Trade deficit	FDI, GDP,RER	Multiple Regression	FDI, GDP, &RER have a +ve impact on trade balance.
7	Akbostanci, E.	Dynamics of the trade balance	BOT	REER	Simple Regression	J-Curve
8	Behmani	Effectiveness of Marshall Learner condition	Trade Balance	MarshallLearner Condition	t-test ARDL	If $Ex + E_M > 1$ Then MLC is effective.
9	Husain Javed	Impact of exchange rate volatility on economic growth in Pakistan	Economic Growth	ER volatility	Simple Regression	ER volatility has a +ve impact on economicgrowth.
10	Sarbapriya Ray	An Analysis of determinants of Balance of Tradein India	Balance ofTrade	FDI, REER, Foreign Income, domestic consumption	OLS	FDI and foreign income have a positive impact but REER and domestic consumption have -ve impact.
11	Aurangzeb Khola Asif	An Analysis of determinants ofBalance of	Determinants of Current account deficit: A comparison between Asia andEurope	GDP, IMP, EXP, INF, INC	Regression OLS, co-integration	INF in Pak and INC in Bangladesh has -ve impact butt all other IV have +ve impact

The Real Effective Exchange Rate (REER)

The theoretical background of the Real Effective Exchange Rate (REER) is a proportion of prices of non-tradables (Pn) to tradables (Pt) i.e. e= Pn/Pt. When prices of tradable goods increase relative to prices of non-tradable goods, Real Exchange Rate (RER) is depreciated. However, practically it is difficult to predict

the exact empirical measure of the Real Effective Exchange Rate (REER) because classification of tradable & non-tradable commodities is cumbersome to determine. Even if anyone is intimated with consumption & production trends, the distribution can be irrational and selection procedure is non-transferable from one economy to another (Henry, 2001). Due to this logic, policymakers and economists often depend upon the Real Effective Exchange Rate (REER) that is occupying by the index ratio of local and foreign consumer rates, to proximate the Real Effective Exchange Rate (REER) (Henry C. and Longmore R., 2003).

The Real Effective Exchange Rate (REER) is commonly can be measured as:

$e=(r/r^*).(P/P^*)$

Here 'r' is the local exchange rate depicted in terms of international currency, r^* is a compound of the trading partners exchange rate, P is a local rate index & P^* is an external rate index.

On basis of the purchasing power parity (PPP) theory, the local exchange rate should be regulated to satisfy for any variation in related prices or exchange rates of trading allies. Thus, the real effective exchange rate must last in equilibrium (Henry and Longmore, 2003).

Uninterrupted escapes from the equilibrium value because of unsatisfactory nominal exchange rate volatility from time to time used to explain internal and external fluctuations, liability and growth potential. The real effective exchange rate (REER) is thus normally considered a great pact of thought in expressing the criteria of source quota and zonal achievement.

Two vast techniques typically applied to demonstrate impact of the real effective exchange rate (REER) variations on present account. First, the elasticity approach influence that an indebtness or slump in the real effective exchange rate (REER) should outcome in higher or lower levels of imported and exported goods. This concluded that imported goods would have become low-priced/ expensive whereas the exports will have become almost high- priced/ cheaper. The trend in response to these fluctuations may be executed will build upon the corresponding elasticity's linked with exported and imported goods i.e. an economy relies massively on imports of intermediate products, i.e. there is non-availability of close alternative; devaluation in the nominal or ostensible rate of exchange may not arouse fluctuations in imports because the price elasticity of demand is very low. This concept is summarized in the Marshall-Lerner (ML) condition, that depicts the devaluation in the currency will have a positive impact on an economy's balance of trade if the sum of elasticity's of its imports and exports is larger than one. The contrary influence if sum of elasticity's of exports and imports is less than one.

Dornbusch, (1988) also studied that the proportionate impact of modifications to the Real Effective Exchange Rate (REER) on current account relies on the size to which the domestic demand can alternate from tradable goods to non-tradable goods, as well as the local economy's capacity to generate further output to accommodate export's demand. The absorption approach depicts that the current account is identical to the disparity between domestic output and local absorption originating from the public and private consumption expenditures and investment expenditures as well. Devaluation in currency upset the present account precisely through its consequences on the real output and absorption. While on contrary, devaluation affects indirectly the income elasticity's absorption.

Real-Exchange Rate Adjustment Effects on Trade Balance

Krugman (1999), and many other authors, studied that the current account (BOT) positions need a degree of real exchange rate (RER) regulation to protect a sustainable debt pathway in a medium-term basic scenario (i.e. real appreciation (depreciation) would strengthen (deteriorate) the ratio of balance of trade (BOT) position to GDP computed in U.S. dollars. Similarly, Lane and Milesi-Ferretti (2007) studied an endogenous complication in that BOT over GDP is calculated in U.S. dollars, where currency depreciation causes both the dollar GDP per capita to fall and real exchange rate (RER) is to depreciate, called the cost effect. This is why, without computing for probable revaluation in medium-term, the BOT over GDP could need extensive real exchange rate regulation (adjustment) to have the external rate on a continuous path at gross route (baseline) scenario. To regulate a real effective exchange rate (REER) adjustment in the BOT dynamic, we presume that BOT (current account) related variables and GDP growth rates-WEO forecasts are measured by keeping the REER (XT) uninterrupted at time period T over the baseline scenario (medium- term).

Moreover, we indicates a standard REER ($XT*$), i.e. that position of the REER which meet that the BOT over GDP at time T (which will probably be revalued when exchange rate moves to real effective exchange rate) is identical to the current value of future balance of trade (which will vary proportionally to trade semi-elasticity's, when XT improves to $XT*$), in addition to it the capital transfers, net current and external rate of return prong (differential) that having the revalued exchange rate level on a stable path tentative on WEO projections (Marola, 2016).

Foreign Exchange Reserves

Hussain, (2016) investigate that basic aim of holding foreign exchange reserves (FREX) is to make global trade payments and an obstacle against exchange rate risk. It means foreign exchange reserves affect partially to Balance of Trade. In addition to it, these are used for monetary management and as a tool for exchange rate determination. The State Bank of Pakistan (SBP) should contain sufficient amount of foreign exchange reserves to stabilize the real effective exchange rate (REER) which can erode the competitiveness of Pakistan's exports.

Hence it is justified to include foreign exchange reserves in the study to explore the real effective impact of exchange rate on balance of trade (BOT) in Pakistan.

IV. DEPICTION OF VARIABLES

There are two main variables of study balance of trade (BOT) and real effective exchange rate (REER) included. Some control variables are also added in the study. The depiction and functional relation of these additional variables with the model are as follows:

Foreign Direct Investment (FDI)

Foreign Direct Investment is an inflow of capital, assets, money etc. from foreign individuals and companies for business interests. It is considered an important source of developing productive capacity, building up physical capital, creating employment opportunities and enhancing the technical skills through the transfer of technology. It develops world integration for trade (Jaferri et al., 2012).

Foreign Direct Investment (FDI) is directly or indirectly linked with a trade balance of a country. Hence, it is justified to include FDI as a control variable in the study.

Gross Domestic Product Per Capita (PCGDP)

Gross Domestic Product (GDP) is a total output of a country produced within its geographical boundaries during a year. Kohli, (2004) has been studied for Switzerland that real GDP has significant relation with terms of trade of a country. GDP per capita is included in this study, which is calculated as PCGDP=GDP/Population.

It is obvious that terms of trade have a positive impact on trade balance. Except this, terms of trade also influence real effective exchange rate when trade deficit or surplus is corrected. Hence, it is a requirement of the study to include GDP per capita as a source variable.

Foreign Exchange Reserves (FER)

Foreign exchange reserves (FER) are the foreign currencies held by the state bank. They are also called foreign reserves or foreign currency reserves. There are seven reasons for holding reserves by banks. But the most important and significant reasons for including FER in this study are as follows:

1. Countries also prefer foreign exchange reserves (FER) to maintain the value of their currencies at a stable rate.
2. The countries having floating rate of exchange use Foreign Exchange Reserves (FER) to maintain the rate of their currencies lower than the dollar.
3. Foreign Exchange Reserves are used to maintain liquidity to face an economic crisis.

Model Specification

$$BOT = \alpha_0 + \alpha_1 (REER) + \alpha_2 (FDI) + \alpha_3 (GDP) + \alpha_4 (FER) + \mu 1$$

Endogenous variable: BOT
Exogenous variable: REER
Control exogenous variables: FDI, GDP and FER

Where
BOT: Balance of trade
REER: Real Effective Exchange Rate
FDI: Foreign Direct Investment
GDP: Gross domestic product
FER: Foreign Exchange Reserves
&
μ1: Disturbance term

BOT in this model is a dependent variable which is going to be predicted. REER is main independent variable whereas FDI, FER, and GDP are control variables, which are to be utilized for prediction of BOT. α_0, α_1, α_2, α_3 and α_4 are coefficients, quantities or multipliers. These define the extent of dependent variable BOT which happened due to following independent variables (REER, FDI, FER and GDP). By keeping all exogenous variables identical to nil then μ1 is the disturbance (error) value to have.

DATA SOURCES
Data has been collected from the following sources:

- World Development Indicators (WDI) data bank.
- Statistical Bureau of Pakistan.
- Economic Survey of Pakistan.
- Trading Economics
- State Bank of Pakistan (SBP).

V. METHODOLOGY

This investigation is consists on time-series analysis. Normally it has been found that time- series data exist with the problem of non-stationary. There are different methods to check out the stationarity problem i.e. modern approach and a traditional one. The correlogram is a traditional method to test stationarity in data, whereas Augmented Dickey-Fuller (ADF) and Philips Peron test of the unit root is modern.

For Multiple Linear Regression (MLR) analysis it is mandatory that nature of the time series data should be stationary. In case of the non-stationary data statistical test becomes inappropriate and provide misleading inferences. The non-stationarity in variables gives spurious regression estimation (Granger and Newbold, 1974). Therefore, it justifies for the Augmented Dickey-Fuller test of unit root to check the stationarity of data. Co-integration focuses on a short run and long-run relation among the investigated variables i.e. real effective exchange rate (REER) and other control variables of study like Foreign Direct Investment (FDI), Foreign Exchange Reserves (FER) and Gross Domestic Product (GDP).

Unit Root Test

Unit root test is applied with the help of Augmented Dickey-Fuller (ADF) test to check it for the existence of unit root under the alternative hypothesis. It is done to check whether time series data is stationary around the requirements including the intercept rather than trend term. The 2nd step involves the constant term and trend term as well.

Augmented Dickey-Fuller (ADF) Test

Augmented Dickey-Fuller (ADF) was developed by the two American statisticians named David Dickey& Wayne Fuller in 1979. This test is applied to check the presence of unit root, in an autoregressive model, that can cause a misleading statistical inference. Augmented Dickey-Fuller (ADF) test is simplest and an appropriate technique to check out for a unit root for time series data. This study also consists of time series data and the dependent variable of study may be autocorrelated. Hence it is justified to apply ADF test for the specified problem.

The ADF test has three main versions:

1. Test for a unit root

$$\Delta X_t = \delta X_{t-1} + \varepsilon t \quad 4.1$$

2. Test for a unit root with constant

$$\Delta X_t = \alpha_o + \delta X_{t-1} + \varepsilon t \quad 4.2$$

3. Test for a unit root with drift & deterministic, time trend

$$\Delta X_t = \alpha_o + \alpha_{1t} + \delta X_{t-1} + \varepsilon t \quad 4.3$$

The Augmented Dickey-Fuller (ADF) is transformed the form of the Dickey-Fuller (DF) test which is used to regulate whether the variables of study are stationary or not. In order to sort out the problem of autocorrelation in data, the test is modified as Augmented Dickey-Fuller (ADF) by applying on lagged endogenous variables. This would depict the following test:

$$\Delta Xt = (\rho-1)\, Xt\text{-}1 + \alpha 1 \sum \Delta\, Xt\text{-}1 + \varepsilon t \quad 4.4$$

The accurate value for n number of lags is determined by frequently originated (produced) information criterion like the Akaike Information Criteria (AIC).

ARDL Bound Testing Approach

To inspect the long run and the short run relationship among Balance of Trade (BOT) and Real Effective Exchange Rate (REER), it has not been focused on traditional cointegration techniques like Engle & Granger (1987) and Johansen & Juselius (1990) co-integration techniques. This investigation used latest and advanced method to check whether the long-run relationship among the variables of study exists or not by using autoregressive distributive lag model (ARDL) of bounds testing technique introduced and refined by Pesaran et al., (2001). i.e. the ARDL approach is suitable if the variables of study have an unclear order of integration. For example, purely I(0) & I(1) or I(0) / I(1) which are not adequate in traditional techniques. Moreso and as reported by Haug (2002), ARDL testing technique is more acceptable and gives better outcomes for the small size of the sample and the long run and short run parameters being predicted simultaneously.

The ARDL representation of the Impact of Real Effective Exchange Rate on Balance of Trade in the long run and short run can be constructed as:

$$\begin{aligned}\Delta \text{ Log LBOT} =& \alpha 0 + \beta 1 \log (\text{BOT})\ t\text{-}1 + \beta 2\ (\text{REER})\ t\text{-}1 \\ &+\beta 3\ (\text{FDI})\ t\text{-}1 + \beta 4\ (\log \text{GDP})\ t\text{-}1 + \beta 5\ (\text{FER})\ t\text{-}1 \\ &+ \sum \Delta\ (\log \text{BOT})\ t\text{-}1 + \sum \Delta\ (\text{REER})\ t\text{-}1 \\ &+ \sum t\Delta\ (\text{FDI})\ t\text{-}1 + \sum t\Delta\ (\text{PCGDP})\ t\text{-}1 \\ &+ \sum \Delta\ (\text{FER})\ t\text{-}1 + \varepsilon t \end{aligned} \quad 4.5$$

$$\begin{aligned}\Delta \text{ Log SBOT} =& \alpha 0 + \beta 1 \log (\text{BOT})\ t\text{-}1 + \beta 2\ (\text{REER})\ t\text{-}1 \\ &+\beta 3\ (\text{FDI})\ t\text{-}1 + \beta 4\ (\log \text{GDP})\ t\text{-}1 + \beta 5\ (\text{FER})\ t\text{-}1 \\ &+ \sum \Delta\ (\log \text{BOT})\ t\text{-}1 + \sum \Delta\ (\text{REER})\ t\text{-}1 \\ &+ \sum t\Delta\ (\text{FDI})\ t\text{-}1 + \sum t\Delta\ (\text{GDP})\ t\text{-}1 \\ &+ \sum \Delta\ (\text{FER})\ t\text{-}1 + \varepsilon t \end{aligned} \quad 4.6$$

Where α_0 is drift, ε_t is the error term, β_1, β_2, β_3, β_4, and β_5 are long-run coefficients, Δ is the 1st difference driver and p &q are flawless lag lengths (maybe of same or different). Where; Log BOT, REER, FDI, log GDP and FER are a log of the balance of trade, real effective exchange rate, foreign direct investment, and a log of GDP per capita and foreign exchange reserves respectively. The flawless lag choice in the unrestricted ARDL model consists on SC and AIC criterion.

Further F-statistic is to compare with critical values of Narayan (2005), were originated of a small sample size between 30 to 80 observations. One set presumes that all the variables of the model are I (0) while another set presumes that all variables are I (1). If the computed F-statistic increases the upper demanding value, then H_1 is accepted. If the computed value of F-statistic falls below the lower critical

value, it means there is no cointegration present in the data. Lastly, if the value of F-statistic falls within upper and lower bound then the result become inconclusive.

If there is a clue of the long run& short-run relation (i.e. co integration) among variables, lifted to the long run & short run coefficients which are expressed in the following equations:

$$\text{Log LBOT } t = \alpha 0 + \sum (\log \text{BOT})_{t-1} + \sum (\text{REER})_{t-1} + \sum (\text{FDI})_{t-1} + \sum (\log \text{GDP})_{t-1} + \sum (\text{FER})_{t-1} + \varepsilon t \quad 4.7$$

$$\text{Log SBOT } t = \alpha 0 + \sum (\log \text{BOT})_{t-1} + \sum (\text{REER})_{t-1} + \sum (\text{FDI})_{t-1} + \sum (\log \text{GDP})_{t-1} + \sum (\text{FER})_{t-1} + \varepsilon t \quad 4.8$$

The lag selection criterions in ARDL model are; Schwarz Bayesian Criterion (SBC) and Akaike Information Criterion (AIC) to estimate the selected model by Ordinary Least Square (OLS). The ARDL model designation of the long run and short-run direction can be derived by developing an Error Correction Model (ECM) in the following pattern respectively:

$$\Delta \text{ Log LBOT} = \alpha 0 + \sum \Delta (\log \text{BOT})_{t-1} + \sum \Delta (\text{REER})_{t-1} + \sum i\Delta (\text{FDI})_{t-1} + \sum i\Delta (\text{LOG-GDP})_{t-1} + \sum \Delta (\text{FER})_{t-1} + \psi \text{ECM}_{t-1} + \varepsilon t \quad 4.9$$

$$\Delta \text{ Log SBOT} = \alpha 0 + \sum \Delta (\log \text{BOT})_{t-1} + \sum \Delta (\text{REER})_{t-1} + \sum i\Delta (\text{FDI})_{t-1} + \sum i\Delta (\text{LOG-GDP})_{t-1} + \sum \Delta (\text{FER})_{t-1} + \psi \text{ECM}_{t-1} + \varepsilon t \quad 4.10$$

ECM is the error correction term, defined by the following equations in long and short-run respectively:

$$\text{ECM } t = \text{Log LBOT } \alpha 0 - \sum (\log \text{BOT})_{t-1} - \sum \beta (\text{REER})_{t-1} - \sum 3 (\text{FDI})_{t-1} - \sum \beta 4 (\text{LOG-PCGDP})_{t-1} - \sum \Delta (\text{FER})_{t-1} \quad 4.11$$

$$\text{ECM } t = \text{Log SBOT } \alpha 0 - \sum (\log \text{BOT})_{t-1} - \sum \beta (\text{REER})_{t-1} - \sum 3 (\text{FDI})_{t-1} - \sum \beta 4 (\text{LOG-PCGDP})_{t-1} - \sum \Delta (\text{FER})_{t-1} \quad 4.12$$

All the coefficients of short-run identities (equations) are relative to short run dynamics of the model's convergence to equilibrium and ψ indicates the speed of adjustment.

UNIT ROOT TEST

In order to eliminate autocorrelation and test the stationarity of the variables in model a unit root test Augmented Dickey-Fuller (ADF) is applied and checked the data at1st difference for converting series of data to be stationary**.** The (ADF) test is used to check whether variables have a unit root ornot.

Results obtained from ADF-test for unit root at 5% level of significance for all variables has been shown below:

Table 1 Augmented Dickey-Fuller Tests for Unit Root

Variable	t-statistic	p-value
FDI	-2.948404	0.0045
LRER	-2.948404	o.2388

FER	-2.948404	0.5422
BOT	-2.948404	0.2500
LGDP	-2.951125	0.7704

Source: Author's Computation

The results of above table 1 showing that almost all variables of study dependent (BOT) and independent (i.e. FDI, RES, LEER, LGDP) are not stationary at 5% level of significance as their p-values are not less than 0.05.

FIRST DIFFERENCE TEST

The findings of ADF unit root test at 1st difference is shown in table: 2 depicts that variables LGDP (Log of gross domestic product), balance of trade (BOT), Log of real effective exchange rate (Log RER), foreign direct investment (FDI) and foreign exchange reserves (FER) are stationary at1%, 5%and 10% level of significance.

Table 2 Augmented Dickey-Fuller Tests at First Difference

Variable	t-statistic	p-value
D(LGDP)	-2.951125	0.0053**
D(BOT)	-2.951125	0.0000***
Variable	t-statistic	p-value
D(LGDP)	-2.951125	0.0053**
D(BOT)	-2.951125	0.0000***

Source: Author‟s Computation

An order of integration has been observed in past investigations and from the results of table 2 in this study. As, after applying ADF-test it is found that all variables are identical in conclusion, so ARDL co-integration test will be applied. Hence results of a bound test of co-integration are as follows:

ARDL MODEL OF BALANCE OF TRADE IN LONG RUN

Bound Testing

To check the existence of long-run relationships among endogenous variable (Balance of Trade) and exogenous variables (real effective exchange rate, foreign direct investment, gross domestic product per capita and foreign exchange reserves) bound testing technique was applied and following results were attained as under:

Table 3 Results of Bound F-testing of Balance of Trade

Critical Values Bound			F-Calculated
Significance	Lower Bound I(0)	Upper Bound I(1)	
10%	2.45	3.52	7.613735
5%	2.86	4.01	
2.5%	3.25	4.49	
1%	3.74	5.06	

Table 3 indicates the results of bound testing technique to see the long- run relationship between the variables by applying the method of Pesaran et al., (2001). The critical value from a Pesaran table of upper bound is 4.01 and 3.52 at 5% and 10% level of acceptance or significance respectively. Where the computed F-test statistic (F-Calculated=7.613735) is greater than the upper bound value at 5 percent and 10 percent level of drift or acceptance applying restricted intercept**.** Hence, according to F-statistic, the

alternative hypothesis is accepted and null hypothesis is rejected and elucidated that co-integration exist. The F-calculated statistic shows that the model is a good fit and the long-run relationship is there between variables.

Co-integration and Long Run Form

After indicating bound testing results, it is concluded that long-run relationship exists between variables. ARDL technique is used, in which lag length is selected through auto-selection on the base of Akaike Information Criteria (AIC). The outcomes of long-run have been shown in table 4.

Table 4 Estimate Long Run Coefficients by using ARDL technique BOTEquation

Variable	Coefficient	Standard Error	T-Ratio (Prob.)
REER	-0.004598	0.025229	-0.182234(0.8570)
FDI	-1.872434	0.973399	-1.923604(0.0669)
GR	1.918002	0.991720	1.934016(0.0655)
FER	0.165641	0.077858	2.127483(0.0443)
C	0.405894	3.059223	0.132679(0.8956)

Table 4 indicates that real effective exchange rate (REER) has a most important factor which severely impacts the balance of trade. REER impact on BOT is negative at 1% level of significance while the coefficient of REER is - 0.004598, which shows that 1% increase in real effective exchange rate brings 0.45 % decrease in the balance of trade in the long run. The t-value of the real effective exchange rate is -0.182234**,** which indicates the negative significant effect on BOT in Pakistan.

The variable foreign direct investment is significant at 5% level of significance and the coefficient of FDI is -1.872434, which shows that 1% increase in FDI, brings 1.8% decrease in the balance of trade in the long run. Whereas t-value of FDI is -1.923604, this indicates its negative significant effect on the balance of trade (BOT). The results are different with previous literature regarding the positive relation between FDI and BOT (Falk, 2006).

The coefficient of LOG-GDP per capita (GR) is 1.918002, which shows that 1% gain in GDP per capita leads 19% increase in BOT in the long run. Whereas t-value of GDP per capita is 1.934016, which indicates that there is thepositive significant impact on BOT. The results of the empirical analysis revealed that GDP per capita is positively influenced the balance of trade in Pakistan. GDP per capita play a vital role to improve the balance of trade duringlong-run in Pakistan (Anwar et al., 2012).

The coefficient of FER is 0.165641, which shows that 1% increase in FER brings 16% improvement in Balance of Trade (BOT) in Pakistan during a long run. Whereas the t-value of FER is 2.127483, this indicates the positivesignificant impact on the balance of trade in Pakistan.

Error Correction Representation of ARDL Model

The outcomes of Error Correction Model (ECM) for the balance of trade are represented in Table 5. Partially, the coefficients in ECM are insignificant, except for FER and Log GDP per capita.

Table 5 Error Correction Representation for the Selected ARDL Model BOT Equation

Variable	Coefficient	StandardError	T-Ratio	Probability
D(ER)	-0.081278	0.033740	-2.408904	0.0244
D(FDI)	-0.701463	0.474436	-1.478520	0.1528
D(GR)	0.358304	0.148844	2.407238	0.0245
D(RER)	0.278312	0.036996	7.522783	0.0000
D(RER(-1))	-0.064012	0.049355	-1.296980	0.2075

ECT	-0.374626	0.135716	-2.760361	0.0111

Cointeq = BOT - (-0.0046*ER -1.8724*FDI -1.9180*GR + 0.1656*RER +0.4059)

The Error Correction Term (ECT) indicates the convergence in long-run from short-run with a change of (1/0.374626*12) 32 months in the real effective exchange rate (REER), foreign direct investment (FDI), GDP per capita and foreign exchange reserves. In short-run FDI, GDP per capita and foreign exchange reserves have inverse (negative) impact. While real effective exchange rate (REER) has a positive impact on the balance of trade (BOT) in short-run.

Results of R-Squared

Table 6 R-Squared Result of Balance of Trade Equation

R-Squared	Adjusted-R Squared
0.892575	0.850539

In table 6, the value of R-squared is 0.892575, which indicates that 89.25% variation in the balance of trade (BOT) is due to real effective exchange rate, foreign direct investment (FDI), GDP per capita and foreign exchange reserves (FER).

Results of Diagnostic Tests of Balance of Trade Equation

Table 7 Diagnostic Tests of Balance of Trade Equation

Test statistic	LM Version	F Version
Serial Correlation	1.023018	F(2,21)0.3767*
Normality	0.802768	Not applicable*
Heteroscedasticity	2.482907	F(9,23)0.0379*

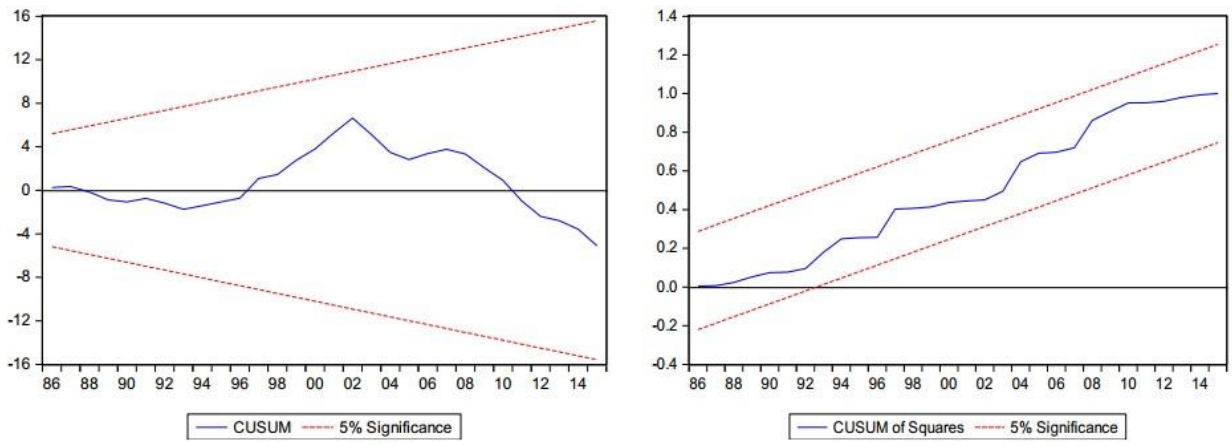
*Indicates 95% level of confidence interval

Table 7 indicates the different diagnostic tests to investigate the validity of ARDL model. The outcomes show the absence of heteroscedasticity and serial correlation in the model. While the value of LM and F Version is more than 0.05, which indicates to reject the null hypothesis and the alternative hypothesis is accepted. The results also show that error term is normally distributed and the problem of heteroscedasticity is not found.

Stability of the Model

It is important to investigate the strength of ARDL model after exercising all the proper diagnostics because an unstable model is not suitable for investigating the circumstances. To check the stability of the model, CUSUM & CUSUMSQ tests (Hashem M., & Pesaran, 1997) are used which redevelop Durbin, Brown, and Evans (1975), both of these tests drawn the cumulative summations & sum of squares of residuals across time-trends. Strength of the model confirms that the null hypothesis is accepted against the alternative hypothesis which means all coefficients are within the limitations at 5% level of significance. Therefore, both the tests depict that the model is stable and reject the alternative hypothesis. In the graph CUSUM & CUSUMSQ values exist with critical bounds, it indicates that model is stable.

Diagnostic Graphs for Stability of Total Crime Equation (CUSUM &CUSUMQ)



In the above graph straight line represents critical bounds at 5% level of significance, while the disturbance line within the analytical bounds shows the cumulative amount of Recursive Residuals and the cumulative amount of squares of Recursive disturbances for the strength of ARDL model.

VI. CONCLUSION

Real Effective Exchange Rate has a significant positive impact in short run and a long run on the balance of trade (BOT) in Pakistan. The investigation concludes that +ve real effective exchange rate (REER) improves the balance of trade by boosting up exports and lowering the imports. It has also +ve relation with GDP. When domestic industry promotes the import substitutes, exportsrise and BOT improves.

It is elucidated that except REER all other exogenous variables have a significant impact on the trade balance at 5% level of significance. Gross domestic product (GDP) has a direct and significant relationship with the balance of trade. The result indicates that there are two ways relation between BOT and GDP. An increase in GDP cause improvement in BOT but the balance of trade also has also a positive impact on GDP. Pakistan's GDP is very low because the government is not using domestic resources properly. In order to boost up GDP, the government has to take serious steps for proper utilization of natural resources with a healthier combination of modern technology. Pakistan is persistently facing trade imbalance because of higher imports than exports. Hence policymakers should suggest such strategies which encourage the local producers to manufacture import substitutes. Establishment of domestic industry automatically boosts exports and BOT will be improved.

The finding of this study concludes that FDI has a positive and significant impact on the balance of trade. An increase in FDI leads to boost exports which improve the balance of trade. There is a number of benefits which a host country enjoys. When FDI comes in country living standard improves, employment opportunities increase, and labor and technical staff learn management expertise by the foreign managers. The main important advantage of FDI for developing countries like Pakistan is to build international relations for trade.

There are many reasons of accumulating foreign exchange reserves but the basic aim of holding foreign exchange reserves (FREX) is to make global trade payments and an obstacle against exchange rate risk, which means foreign exchange reserves affect partially to Balance of Trade. In addition to it, these are used for monetary management and as a tool for exchange rate determination. The SBP should contain sufficient amount of foreign exchange reserves to stabilize the real effective exchange rate (REER) which can erodethe competitiveness of Pakistan's exports.

VII. LIMITATIONS OF THE STUDY

Every research has some boundaries which grant the research scholars to interpret the outcomes within due parameters. This investigation has also some limitations regarding the weakness of data and other paradigms such as:

- This investigation only deal with the Pakistan to manipulate the research, other nations can also be included to understand the global device of relation between trade balance and the Real Effective Exchange Rate (REER).
- The data of 57 years is handy but here is selected small sample range which is finite and

manageable. The entire time span which is included in analysis is of 35 years (1981-2015).

- The one independent variable (REER) is used in this study but more variables (i.e. GDP, FDI & FER) are also incorporated to enhance the data size (population size).
- Only quantitative data is incorporated in study and qualitative data is not considered.
- The data which is used in the analysis is collected from the official website of World Development Indicators (WDI) data bank where as further graphical or relative data is collected from State Bank of Pakistan (SBP) Statistical Bureau of Pakistan, and Trading Economics of Pakistan which are trustworthy but may not be effective.

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