TRADE DEFICIT

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ABSTRACT

The favorable trade balance is a good indicator for developing economies. But the correction of trade deficit through depreciation of exchange rate is a misdirected policy tool. This study clears this misperception by measuring the elasticity of exports, imports and balance of trade with respect to real exchange rate in Pakistan. Further, it also investigates whether trade elasticities are sensitive to different trade regimes and exchange rate policies during time period from 1982 to 2019. The Johansen et al., (2000) structural break cointegration technique is applied for analysis. The results reveal that devaluation is not good for boosting the demand of exports but it increase the demand for imports and ultimately deteriorate the trade balance. Therefore, study rejects the existence of J-curve in Pakistan. Therefore, exchange rate policy can do nothing on the structure. In fact, the need for a devaluation is the inefficiencies in the structure of the economy.

JEL Classifications: F10, C13, C22

Keywords: Imports; Exports; Trade balance; real exchange rate; Marshall-Lerner condition, Cointegration; Structural Break

1. INTRODUCTION

Improvement in trade balance is one of the indicators of economic progress which further creates employment and economic growth. Developing countries earns foreign exchange through trade and overcome its deficiency of capital and technological advances by importing them. Trade policy differs from one country to another and they mainly depend upon the country's specific needs, objectives and socio-economic characteristics. Since 1970s most of the developing countries are emphasising to adopt the trade policies which are more toward the export promotion and far from the import substitution policies.

Devaluation[1] is necessitated only when policy weakness leads to a loss of reserves. It takes on a harsher form when central banks refuse to recognise the will of the market and spends reserves to preserve an artificial value of the exchange rate. Ill-informed popular debate appears to hold to the notion that the purpose of a devaluation is to devalue to improve the trade balance and as they say "improve competitiveness."

There is an old debate on whether exchange rate depreciation impacts the trade balance positively or not. We will summarise that here.

The impact of an exchange rate depreciation on trade balance has not been widely endorsed. The studies in the area of depreciation can be divided into two groups. The first group of studies [Goldstein and Khan (1978), Balassa *et al*., (1989), Gupta-Kapoor and Ramakrishnan (1999), Narayan (2004), Gomes and Paz (2005), Rahman and Islam (2006), Soleymani and Saboori (2012), Bahmani-Oskooee and Zhang (2013) and Musawa (2014)] supports the view that depreciation is successful in improving the trade balance and demand for exports and imports are responsive to exchange rate. Whereas, the second group that do not lend support to the effectiveness of depreciation in resolving the trade deficit problem (see Miles (1979), Rose (1991), Yazici (2006), Bahmani-Oskooee and Kutan (2009), Galebotswe and Andrias (2011), Bahmani-Oskooee and Gelan (2012) and Ayen (2014)]).

Elasticities reflect the structure of the economy. The main objectives of this work is to estimate the import and export elasticities with respect exchange rate to investigate the existence of J-curve Phenomena. In the absence of J- curve phenomena we would easily conclude that exchange rate policy can do nothing on the structure.

Following the introduction, the rest of the paper is organised as; Section 2 reviews the existing empirical literature about Pakistan's foreign trade and exchange rates in order to record the response of exports and imports to change in income, relative prices and exchange rate. Section 3 presents a brief history of the trade regime in Pakistan and discuss the strategies and measures followed in the process of trade liberalisation. Theoretical framework and econometrics methodology are discussed under Section 4 and Section 5. Data and construction of variables are reported in Section 6. Section 7 and 8 provides the empirical results.

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[1]In this study devaluation and depreciation will be used interchangeably and market based flexible exchange rate system followed by SBP from July 2000.

2. REVIEW OF EMPIRICAL STUDIES ON THE DEMAND FOR IMPORTS AND EXPORTS IN PAKISTAN

In the field of international economics, income and price elasticities are useful in determining the trade flows. Income elasticities measures how the trade flows respond to change in GDP and price elasticities access the impact of changes in relative prices, tariffs and/or exchange rates on trade flows. These elasticities are especially critical to the Pakistan economy because of rising trade deficit. In case of Pakistan, there is a vast amount of the literature focuses on the role of exchange rates in affecting the trade balance or, more specifically exports and imports both at aggregated and disaggregated (commodity wise, industry wise and country wise) level. Here we are reviewing the studies that measures the elasticities at aggregated level. The Table 1, 2 and 3 provides the elasticities of import, export and balance of trade with respect to exchange rate, prices and income. Instead, they vary depending on their sample period, data frequency, empirical methods and modelled macroeconomic variables. Conclusions of these studies exhibit no common pattern regarding the role of exchange rates in determining trade flows. The studies those are in the favour of devaluation includes; Hasan and Khan (1994), Khan and Aftab (1995), Bahmani-Oskooee (1998), Aftab and Aurangzeb (2002), Rehman and Afzal (2003), Afzal and Ahmad (2004), Kemal and Qadir (2005), Baluch and Bukhari (2012), Saeed and Hussain (2013), Bano *et al*. (2014), Hasan and Khan (2015), Faridi and Kausar (2016), Khan *et al*. (2016), Khan (2016) and Ishtiaq *et al*. (2016). They argued that devaluation will result in expenditure-switching from importable products to domestically produced goods. This caused changes in the composition of expenditures within the country. Hence, the currency devaluation appeared to be a reasonable way to improve a country's trade balance in the long run. On the other hand, Akhtar and Malik (2000), Atique and Ahmad (2003), Felipe *et al*. (2009), Aslam and Amin (2012), Shahbaz *et al*. (2012), Khan and zaman (2013), Shah and Majeed (2014), Khan *et al*. (2016), Shahzad *et al*. (2017), Yasmeen *et al*. (2018) argued that currency devaluation further deteriorated trade balance.

In case of export demand, except the study of Ishtiaq *et al*. (2016) the range of real exchange rate elasticity lies between -0.80 to -0.30, it means that with the devaluation of exchange rate, Pakistan export demands do not increase in a significant way. On the other side, world income has positive impact on export demand contrary to the result of Afzal and Ahmad (2004). For import demand, the range of real exchange rate elasticity lies between -0.24 to -0.78 (excluding the study of Khan (1994) and Yasmeen *et al*. (2018)). It means that depreciation of real exchange rate decreases the import's demand at low rate. Whereas, increase in domestic income would boost the demands of foreign product. Again real exchange rate depreciation will not lead to improve the balance of trade its ranges between -1.51 to -0.02.

Beside the exchange rate there are other factors behind the persistent trade balance and limits the role of exchange rate policies to correct the trade balance. Such as (1) Most of Pakistan's imports consist of capital and intermediate goods. This dependence makes import demand relatively inelastic and unresponsive to exchange rate policies. (2) Agricultural goods have inelastic supply and most of Pakistan's exports are consisting of agricultural goods. Therefore, export demand may be less sensitive, in term to its prices and the world income and depreciation policy did not have much effect on the export volume. (3) Low Value addition in Pakistan's exports due to low development of industrial sector, Pakistan has not yet expanded her product range in favour of technology-intensive products.

Table 1

Pakistan Import Demand Elasticities

Author (s), Years	Data Period	Y_d	RER or REER	NER	PM/PD	PM	PD
Khan (1994)	1983Q1 - 1993Q3	2.13	0.78				
Aftab and Aurangzeb (2002)	1980Q1 - 2000Q4	0.91			-0.87		
Afzal and Ahmad (2004)	1960-2003	3.19		-2.27	-5.26		
Kemal and Qadir (2005)	1981-2003		**-0.52**				
Felipe *et al*. (2009)	1980-2007	0.91	-0.24				
Baluch and Bukhari (2012)	1971-2009	1.22			-0.53		
Bano *et al.* (2014)	1980-2010	0.69		-0.53	0.710		
Khan *et al.* (2016)	1981-2010	1.40	-0.34				
Ishtiaq *et al.* (2016)	1970Q1-2012Q4	1.22	-0.78				
Khan and Majeed (2018)	1978-2016	2.16			-1.57		
Yasmeen *et al*. (2018)	1980-2016	1.13	0.23			-0.37	

Note: Bold figure represents the insignificant coefficient.

Table 2

Pakistan Export Demand Elasticities

Author (s), Years	Data Period	Y_f	RER or REER	NER	P_X/P_f	P_X	P_f
Khan (1994)	1983Q1 - 1993Q3	1.63	-0.32				
Aftab and Aurangzeb (2002)	1980Q1 - 2000Q4	2.11			-0.62		
Atique and Ahmad (2003)	1972-2000	2.93	-0.39				
Afzal and Ahmad (2004)	1960-2003	-3.78		0.04	2.92		
Kemal and Qadir (2005)	1981-2003		-0.66				
Felipe *et al.* (2009)	1980-2007	1.41	**-0.34**				
Khan *et al.* (2013)	1981-2010	1.28	-0.86				
Bano *et al*. (2014)	1980-2010	0.96	-0.30		0.10		
Khan *et al*. (2016)	1982-2015	1.11	-0.42		-0.06		
Ishtiaq *et al.* (2016)	1970Q1-2012Q4	1.73	0.31				
Yasmeen *et al*. (2018)	1980-2016	2.23	-0.80			-0.44	

Note: Bold figure represents the insignificant coefficient.

Table 3

Pakistan Balance of Trade Elasticities

Author (s), Years	Data Period	Yf	Yd	RER or REER
Rehman and Afzal (2003)	1972Q1-2002Q4	2.86	-1.82	-0.89
Aslam and Amin (2012)	1980-2008	3.03		-0.31
Shahbaz *et al.* (2012)	1980Q1-2006Q4			-1.02
Saeed and Hussain (2013)	1985-2010	3.45	-2.42	-0.02
Shah and Majeed (2014)	1980-2011		-2.34	-1.51
Faridi and Kausar (2016)	1972-2014			-0.09
Khan (2016)	2005Q1-2014Q4	-0.01	-0.97	0.024
Ishtiaq *et al*. (2016)	1970Q1-2012Q4	1.68		0.92

3. HISTORY OF TRADE REGIMES IN PAKISTAN

Trade policy differs from one country to another and they mainly depend upon the needs, objectives and socio-economic characteristics of the country. As far as Pakistan is concern, number of trade policies have been introduced by various governments during

the last 73 years. The trade policies are designed to (i) reduce the trade deficit (ii) confirm the accessibility of necessary goods and (iii) protect the sectors that are national priorities. Generally, Pakistan's trading policy is composed of various sub-polices such as exchange control policy, the import licensing policy, the export promotion policy and the tariff policy, managed by various government ministries and departments.

As the aim of this study is to analyse the import and export elasticities with respect to exchange rate under different trade regimes. These elasticities are linked with the appreciation and depreciation of currency which is happened under flexible exchange rate regimes. Therefore, this study will undertake the trade policies that are implemented after the adoption of flexible exchange rate i.e., after 1982. Trade policies after 1982 can be divided into three periods i.e., 1980s, 1990s and 2000s [the information on trade policies and exchange rate policies are taken from Zafar (1997), Bader (2006), Hina and Qayyum (2019), various trade policies and FBR year Books]

3.1. Trade Policy in 1980s

The economic liberalisation started in Pakistan when she adopted a flexible exchange rate policy. In 1982 Pakistan rupee was delinked from the US $. Before that the rupee/dollar exchange rate was fixed and appreciation of the US $ in 1980-81 had reduced the competitiveness of Pakistan's export in the international market. The floating exchange rate policy helped the import liberalisation process by allowing the government to eliminate restrictions without running into balance of payment problems because the exchange rate was set by the market force. Import bans were removed from 122 products in 1986, and a negative list was established in the country. In 1987-88, 124 products and in 1988-89, 162 products were removed from the negative list. The negative list consisted of items banned for religious or security reasons, luxury consumer goods, and product banned to protect selected industries. For many imported products, the government started ratification that is to replace quantitative restrictions with tariffs. Quantitative restrictions were still the dominant type of protection as one- third of all imported items were subject to quantitative restrictions.

3.2. Trade Policy in 1990s

During this period country faced serious political instability and government changed frequently. But the process of trade liberalisation was continued due to the pressure of various donor and international financial institutions. During the late 1980s and 1990s, more emphasis was given to decentralisation and deregulation of many state-owned enterprises, and national financial institutions, liberal export and export policies, participation of the private sector in domestic markets and import and export business, removal of many market distortions, removal of subsidies on various agricultural inputs (fertilisers, insecticides, agricultural machinery, etc.), softening the restrictions on the foreign investment, etc. previously the private sector was not allowed to export rice and raw cotton ,and government institutions had full control of the rice and cotton export business. Because of the economic situation in the country, the private sector was allowed to participate in the export of rice, raw cotton, fruits and vegetables, etc. the private sector was given various incentives, such as a facility of duty draw back to exporter of fresh fruits and vegetables, 25

percent freight subsidy on air and sea freight on national carriers for exporters of fruits and vegetables, cut flowers, fresh fish products, etc. The Export Financing Scheme was further extended and packed Basmati rice (brand name), fruits, vegetables, animal casings and mushrooms were included in the list of edible items for this scheme. Licensing requirements for import of goods not on the negative list have been abolished in July 1993. In the same year the government began a three-year program to reduce maximum tariffs from over 90 percent to 35 percent. However, Pakistan has been unable to meet this schedule and also achieve the goal of reducing its overall fiscal deficit because of central government's fiscal dependence upon customs revenue. The tariff structure has been further modified under the conditions of WTO (1995). In the 1995-96 maximum tariffs were set at 65 percent, well above the original target of 45 percent, and have remained at that level in the 1996-97. Pakistan had reduced its negative list of banned import items from 215 categories of products in 1990 to 68 in 1996.

New industrial zones, export processing zones and dry ports have been established in the country. However, the government still fixes the support prices of many agricultural commodities and prices are not determined by the market forces.

In 1990s from 1991 to 1998 the Pakistan rupees had devalued by four times. First time in July 1993, second time in October 1995, third time in October 1997 and fourth time in June 1998.

The reason of first time devaluation in Pakistan was that the government of India took decision of massive devaluation of Indian rupee, that in turn raised the Indian textile export to 30.2 percent in rupee terms and 19.5 percent in dollar term in May 1993, thus the exporters of the textile sector in Pakistan had been demanding for devaluation of rupee by at least 10 percent to maintain their products competitive with India. This devaluation immediately effects on the price of petrol. It increased from Rs 11.31/litre to Rs 14.40/litre showing a rise of 27.32 percent. Whereas the main argument from the government in favour of second time devaluation was the India had depreciated its currency by 14 percent and if Pakistan does not follow the same pattern, it will lose foreign markets. The another reason was that devaluation will make exports more competitive, that is cheaper and thus increase in the volume of exports and foreign exchange earnings. But again government failed to achieve her goals because Pakistan had always imported more than its exported. Some exporters said that import price may go up by 25 percent to 30 percent, which encourages smuggling.

The reason for the third time devaluation was that our export to Europe have decreased by about 10 percent to Japan by 20 percent and to South East Asian countries by 55 percent. The exports of Pakistan were decline due to the appreciation in the rupee against the European and Japanese currencies through the link with the dollar.

The main argument from the government in favour of forth time devaluation was that, on 28th May government had done nuclear test which hit economy very badly because after the test the step of freezing foreign accounts lost the thrust the nation on government. This devaluation hit the imports of capital good, raw material for industries and the import of military equipment.

3.3. Trade Policy During 2000- 2019

The main focus of trade policy after 2000s is to enhance the trade openness and promote the industrial growth. Therefore, government taken various steps in lowering the cost of doing business by (i) eliminating the restriction on imports of more than five year old machinery; (ii) reducing the of maximum tariff rate to 25 percent (iii) set up Pakistan export finance guarantee agency to facilitate SMEs in private sector.

The government started a steady program of tariff reduction by adopting a "top down" approach, thus bringing down the top rate and also reducing tariff on imports of intermediate inputs and raw materials. Tariff reforms were initiated in early 1990s, at the behest of international financial institutions. The number of tariff slabs was reduced over the years. In the 1980s the total number of tariff slabs was 42, which were reduced to 10 in 1993, 6 in 2015, 5 in 2016 and 4 in 2017.

The average tariff rate was reduced from 65 percent in 1989-90 to 45 percent in 1997-98 to 17 percent in 2002-03 and to 15 percent in 2015-2016.

The 2006-07 Trade Policy changed several import rules such as government organisations was allowed to import directly, without recourse to the Ministry of Commerce.

In 2007-08 government of Pakistan had reduced tariffs to zero on a number of items. It aims to encourage export-led growth. In this period government eliminated tariff rates on raw materials, parts, and components used in manufacturing. But government also increased tariffs on poultry meat and welded stainless steel pipes to defend local industry against imports.

Recently announced National Tariff Policy (NTP) 2019-24 has two guiding principles i.e., strategic protection and competitive import substitution. Strategic protection will be offered to industry in the infancy stage to lower the cost of doing business and is planned to be time-bound and phased out to encourage competition. Competitive import substitution is going to be encouraged under the NTP 2019-24. NTP is designed to eliminate inconsistencies in the tariff structure by simplification of tariff slabs, gradual reduction in tariffs on raw material, intermediate goods and machinery. Moreover, cascading tariff structure will be adopted where tariffs will increase with stages of processing of a product.

On the side of exchange rate policy, flexible exchange rate system was finally achieved in July 2000. With the implementation of flexible exchange rate policy, exchange rate volatility increased dramatically and depreciated PKR from Rs.57.5 to Rs. 60.9 per US dollar. During 2001 to 2003, nominal exchange rate against dollar appreciated by 6 percent and foreign exchange reserves increased by 398 percent (from $ 2146 million to $ 10693 million). This was because of substantial transfer of worker remittances through formal banking channels. It induces the SBP, to purchase US $ 8.3 billion from foreign exchange market to control the excess liquidity. In 2007-2008 global financial crisis had slowdown the global demand and fall in commodity prices hurt the Pakistan's economy through trade imbalances, and significant reduction in remittances and capital inflows. Pakistan rupee depreciated by 14 percent against US $ in 2008 (from Rs.68.28 to Rs. 78.03 per US dollar). Rupee is appreciated by 7 percent in 2014 because the elected government had relied mostly in borrowing loans from international financial institutions and friendly countries to build up foreign exchange reserves. Pakistan rupee

has faced the massive depreciation in 2018 and 2019 due to IMF's condition for a market-based exchange rate mechanism, which limited the intervention of state bank.

Based on the above information, this study is going to estimate the trade elasticities for three different trade regimes that is 1980s restricted trade regime, 1990s is moderate trade regime where the process of trade liberalisation gets started and the maximum liberalised regime i.e., 2000s. These trade regimes are decided based on the top tariff rate, simple average tariff rate of all products and number of slabs. The information is provided in the Table 4 below.

Table 4

Trade Regimes and the Exchange Rate Regimes

Period	Top Tariff Rate	Simple Average Rate (%)	Slabs	**Trade Regime**	**Exchange rate Regime**
1980s	120	65	42	Restricted	Flexible but managed Regime
1990s	90	47	10	Process of liberalisation starts	Flexible but managed Regime
2000s	30	18	5	Liberalised	Flexible Regime

4. THEORETICAL FRAMEWORK

The impact of devaluation on the trade balance is examined by the import demand and export demand functions. The demand for imports usually relates changes in the quantity of imports to changes in domestic income (Y_d) and real exchange rate (*RER*). Using Cobb- Douglas functional form the import demand function is specifies as

$$Import = A_1 RER^{\alpha}{}_1 Y_d{}^{\alpha}{}_2 e^u \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (1)$$

Taking logarithmic transformation to linearise equation (1) as

$$Ln\ Import = \ln A_1 + \alpha_1 \ln RER + \alpha_2 \ln Y_d + u \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (2)$$

Where α_1 and α_2 are exchange rate and income elasticities. It is expected that depreciation of currency decreases the import demand $\alpha_1 < 0$ and increase in domestic income increases the demand for imported products therefore, $\alpha_2 < 0$.

The estimation of the demand for exports usually relates changes in the quantity of exports to changes in foreign income (Y_f) and real exchange rate. Using Cobb- Douglas functional form the export demand function is specifies as

$$Export = A_2 RER^{\beta}{}_1 Y_f{}^{\beta}{}_2 e^v \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (3)$$

Taking logarithmic transformation to linearise equation (1) as

$$Ln\ Export = \ln A_2 + \beta_1 \ln RER + \beta_2 \ln Y_f + v \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (4)$$

Where β_1 and β_2 are exchange rate and income elasticities. It is expected that depreciation of currency leads to increase the exports of country $\beta_1 < 0$ and increase in foreign income also increases the demand for domestic exports therefore, $\beta_2 < 0$.

Investigation of Marshall-Lerner (ML) enables us to explore whether the real depreciation is going to correct the balance of trade deficit or further deteriorate it. The ML condition suggests that the sum of total export and import elasticities must be greater than one if depreciation is to have a favourable impact on the trade balance. Moreover, it

is found that for most countries, even when the conditions are satisfied in the long run, in the short run the price elasticities of export and import demand are inelastic, and this may be one of the factors explaining the j-curve.

The impact of real exchange rate on balance of trade is usually estimated by regressing the trade balance on real exchange rate, foreign country's real income and real domestic income i.e.,

$$\text{Ln } \textit{Trade Balance} = \ln A_3 + \gamma_1 \ln RER + \gamma_2 \ln Y_f + \gamma_3 \ln Y_d + \varepsilon \quad \ldots \quad \ldots \quad (5)$$

Where γ_1, γ_2 and γ_3 are exchange rate and income elasticities. It is expected that depreciation of currency leads to improve the trade balance that is γ_1 should be positive and increase in foreign income and decrease in domestic income would be in the favour of trade balance so the expected sign for also γ_2 is positive and γ_3 is negative.

5. ECONOMETRIC METHODOLOGY

The long run elasticities will be estimated by using cointegration procedure to avoid the spurious regression. If all variables are integrated of same order than it is preferable to use Johansen and Juselious (1992) method of cointegration analysis, otherwise, in case of *I*(0) and *I*(1) explanatory variables, the bound test by Peasran *et al.* (2001) based on Autoregressive Distributed Lag (ARDL) model is another option. Both of these approaches does not counter the structural break , therefore, Johansen *et al.*, (2000) structural break cointegration will be employed in the presence of structural break in the series.

5.1. Cointegration Methodology with Structural Break

The cointegrated vector autoregressive model with no breaks under Johansen's specification is presented as follows:

$$\Delta z_t = \Pi z_{t-1} + \mu + \sum_{i=1}^{k-1} \Gamma_i \Delta z_{t-i} + \varepsilon_t \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (6)$$

Where Z_t is ($k \times 1$) dimensional vector of *I*(1) variables, μ is deterministic component, $\varepsilon_t \overset{ii}{\sim} N(0,\Sigma)$ is ($k \times 1$) vector of normally distributed random error terms. *i* is the lag length. $\Gamma_i = -(I - A_1 - \ldots\ldots\ldots - A_l)$ is short-run dynamic coefficients. $\prod = -(I - A_1 - \ldots\ldots\ldots - A_l)$ is ($k \times k$) matrix containing long-run information regarding equilibrium cointegration vectors.

The number of cointegrating vectors (r) are determines by rank of $\prod$ matrix. If $0 < rank\,(\prod) < k - 1$ then it is further decompose into two matrices i.e. $\prod = \alpha\beta' : \alpha$ is ($k \times r$) matrix contains error correction coefficients which measures the speed of adjustment to disequilibrium. β' is ($r \times k$) matrix of $r(\prod)$ cointegrating vectors. The rank of $\prod$ matrix in Johansen and Juselius (1990) cointegration methodology is measured by likelihood ratio trace and maximum eigenvalue statistics. The cointegration relationship among the variables occur only when $0 < rank \prod < k$.

The deterministic part μ plays an important role in cointegration analysis, it is consists of μ_1, $\prod_1 t$ constant and trend term in the long-run cointegrating equation and μ_2, $\delta_2 t$ are drift and trend of short-run vector auto regressive (VAR) model.

According to the deterministic components five distinct specification along critical values has been discussed Johansen (1991, 1995). If series have quadratic trend then reduce rank involve the combine matrix $(\prod,\prod_1) = \alpha(\beta', \gamma')'$ of the following cointegrated VAR model.

$$\Delta z_t = \Pi z_{t-1} + \Pi_1 t + \mu_1 + \sum_{i=1}^{k-1} \Gamma_i \Delta z_{t-i} + \varepsilon_t \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (7)$$

In the presence of q number of structural breaks, divide the sample according to the position of structural break. For each sub-sample the VAR(p) model is chosen , such as

$$\Delta z_t = \Pi z_{t-1} + \Pi_j t + \mu_{1j} + \sum_{i=1}^{k-1} \Gamma_i \Delta z_{t-i} + \varepsilon_t \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (8)$$

The parameters of the stochastic components i.e., Π, Γ_i and Σ are the same for all sub-samples, whereas the parameters of deterministic trend Π_j and μ_{1j}may change between sub-samples. A cointegration hypothesis can be formulated in terms of the rank of either Π alone or in combination with $\Pi_1, \ldots, \Pi_q$. i.e.,

$$H_l(r): rank\left(\Pi, \Pi_1, \ldots, \Pi_q\right) \leq r \quad \text{or} \quad \left(\Pi, \Pi_1, \ldots, \Pi_q\right) = \alpha \begin{pmatrix} \beta \\ \gamma_1 \\ \vdots \\ \gamma_q \end{pmatrix}'$$

A related hypothesis arises in the case of no linear trend but a broken constant level as

$$H_c(r): rank\left(\Pi, \mu_1, \ldots, \mu_q\right) \leq r \quad \text{and} \quad \left(\Pi, \Pi_1, \ldots, \Pi_q\right) = 0$$

The asymptotic distribution of the trace test is different in the presence of structural break. The critical values depends on the location of break ($\lambda = T_b/T$) and on ($k - r$), where k is the number of variables and r is the cointegrating rank being tested. Estimation is performed on JMulti and Eviews Software.

6. DATA AND CONSTRUCTION OF VARIABLES

This study has considered the annual data from 1982 to 2019. The data are obtained from International Financial Statistics (IFS). The description and the measurement of variables are as follows:

The visualisation of nominal and real exchange rate of PKR against US $ is depicted in Figure 1. Rise in NER and RER shows the depreciation of nominal and real exchange rate respectively. From 1980 to 2001 both lines follow the same direction but after that NER and RER have been moving in opposite directions as the SBP started pursuing a policy of intermittently fixing the exchange rate even as crises happened. It indicates that domestic prices are increasing relative to foreign prices and offsetting the impacts of NER depreciation. In the past few years, despite of significant amount of nominal depreciation, real depreciation has not occurred, in fact RER has moved in opposite direction. Clearly SBP exchange rate policy was standing against the market. SBP should not try to use reserves to fix the value of the exchange rate except to deal with very short-term disorderly conditions. Otherwise,

currency crises or attacks happen if the SBP attempts to use reserves to hold the exchange rate against the market.[2]

Table 5

Description of Variables

Variables	Description	Measure	Source
IM	Real imports measured in billion Rs.	nominal imports value is deflated by domestic price index of import (2010=100)	IFS
EX	Real Exports Measured in Billion Rs.	nominal exports value is deflated by domestic price index of export (2010=100)	IFS
TB	Trade Balance	It is the difference between real export and real imports, and divided by real GDP in order to control for scale effects. For log transformation, the figures are transformed by adding 1 minus the minimum value in order to avoid logs with null values.	IFS
Y_d	Real GDP of Pakistan	the nominal GDP is deflated by the GDP deflator to obtain the real GDP	IFS
Y_f	Real GDP of USA is used as a proxy for foreign country income	the nominal GDP of US is deflated by its GDP deflator to obtain the real GDP of foreign country	IFS
RER	Real exchange rate	$(RER = \frac{NER * P_f}{P_d})$, where NER is nominal exchange rate Pakistan rupee (PKR) per unit of US dollar (US $), Pf and Pd are the price level in domestic and foreign country which is measured by using CPI of the respective countries.	IFS

As Figure 2 shows this flawed exchange rate policy has also showed up in the trade balance. While Pakistan as a developing country had a trade balance but in as exchange rate policy took on an increasing anti market stance, imports started to grow and exports more or less stagnated to lead to a widening trade balance. The imports grew faster than the exports and have almost been always higher than the exports.

From econometric perspective all series are following random walk model with drift and there is a break around 1998 and 2000 in each series.

[2] PIDE's Knowledge Brief No. 7:2020, Pakistan's five currency crisis by Nadeem ul Haque and Hafsa Hina.

Fig. 1. Nominal and Real Exchange Rates in Pakistan

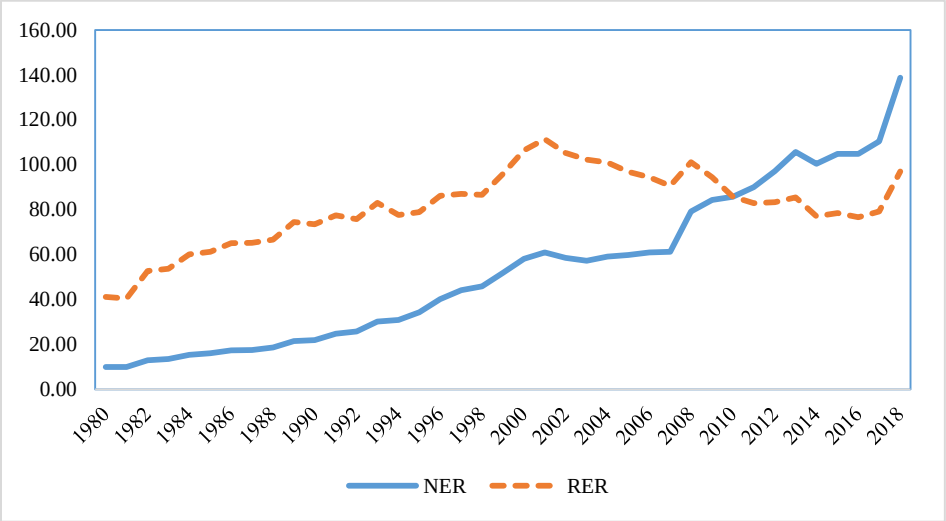
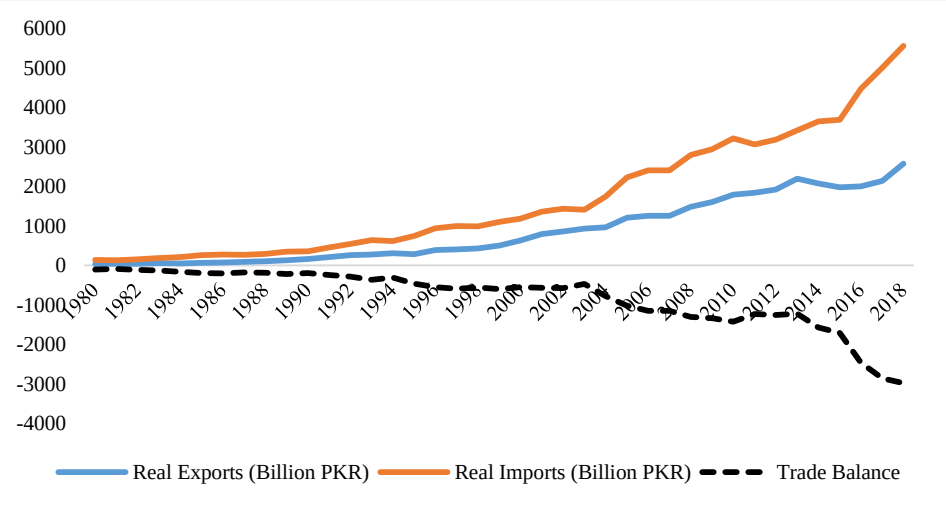


Fig. 2. Imports, Exports and Trade Balance



7. EMPIRICAL RESULTS

All variables are transformed into natural log (denoted by small letters) to get the direct estimates of elasticities from the regression model. The preliminary element for cointegration analysis is to investigate the order of integration of each series. The existence of unit root is investigated by using augmented Dickey-Fuller (1981) (ADF) statistic and Zivot and Andrews (1992) statistic. The later unit root test, tests the null of unit root against the break-stationary alternative hypothesis and it choose the break period endogenously. The results for ADF and Zivot and Andrew unit root test are presented in Table 6a and Table 6b. Accordingly all variables are integrated of order one and each series has a break around 1998.

Table 6a

Unit Root Test at Level of Series

Variables	Lags	ADF Test Statistic	Zivot and Andrews Test		Order of Integration
			Test Statistics	Break	
im	0	-1.90	-3.78	1995	I(1)
ex	0	-0.86	-3.55	2001	I(1)
y_d	0	-2.17	-4.16	2000	I(1)
y_f	1	-1.23	-1.23	2003	I(1)
rer	0	-2.36	-3.53	1999	I(1)
tb	2	-2.20	-3.73	2001	I(1)

Table 6b

Unit Root Test at First Difference of Series

Variables	Lags	ADF Test Statistic	Zivot and Andrews Test		Order of Integration
			Test Statistics	Break	
Δim	0	-6.58***	-6.54***	1995	I(0)
Δex	0	-7.31***	-9.36***	2001	I(0)
Δy_d	0	-6.54***	-8.11***	2000	I(0)
Δy_f	0	-4.09***	-4.86***	2001	I(0)
Δrer	0	-3.00***	-3.52***	1999	I(0)
Δtb	1	-8.07***	-8.72***	1999	I(0)

Johansen *et al*., (2000) structural break cointegration is an appropriate estimation methodology to estimate the long-run and short-run relationship among the variables. Initially we introduce two break point in 1998 and 2000, but 2000 structural break appeared insignificant. Therefore, the dummy variables for break point 1998 is introduced in the analysis as $D_{1998,t} = 0$ (t = 1982, ..., 1998); = 1 (t = 1999, ..., 2019) and $D_{1998,t-k}$ will be introduced in VECM.

8. ESTIMATES OF TRADE ELASTICITIES

This section first provides the short run and long run estimates of import and export demand function for the entire sample 1982 to 2019 after that regime wise elasticities will be presented.

8.1. Results of Import Demand Function

The short run and long run elasticities of import demand function are based on three variables real imports (ln *im*), real exchange rate (ln *rer*) and real domestic income (ln y_d) , as specified in Equation (2). The optimal lag length of the VAR model is one period which is suggested by using the usual information criteria (AIC, SIC, HQ, FPE). The residual of the VAR(1) passed the diagnostic test of no serial correlation, no heterosedasticity at 5 percent level of significance.

After selecting the lag length of VAR model, another fundamental issue is the suitable treatment of deterministic components such as drift and trend term in the cointegrating and the VAR part of the vector error correction model (VECM). Most of the series in our analysis, exhibit a linear trend in the level of the series. Therefore, we introduce intercept term

unrestrictedly both in long run (cointegrating part) and short run (VAR) model while performing cointegration analysis (Hina and Qayyum, 2015). Table 7, presents the trace statistic after adjusting by factor (T-kl)/T to correct the small sample bias.

Table 7

Johansen et al., (2000) Cointegration Test Results

Null Hypothesis	Alternative Hypothesis	$H_c(r)$	0.05 Critical Value ($\lambda = 0.5$, $q = 2$)		
			90%	95%	99%
r = 0	r > 0	111.47[a]	36.99	12.85	42.85
r ≤ 1	r > 1	24.91	21.93	26.44	27.17
r ≤ 2	r > 2	7.67	11.05	43.46	16.69

Note: "[a]" indicates the rejection of null hypothesis.

The trace test shows that the null hypothesis of no cointegration (r=0), is rejected, but fails to reject the null of one cointegrating vector at 5 percent level of significance. Therefore, import demand function is found to be cointegrated with one cointegrating vector. The result of VECM is presented as.

$$\begin{bmatrix}\Delta im_t\\ \Delta rer_t\\ \Delta\, y_{d_t}\end{bmatrix} = \begin{bmatrix}0.07\\ 0.05\\ 0.17\end{bmatrix}\left[\begin{bmatrix}1 & -0.47 & -2.21\end{bmatrix}\begin{bmatrix}im_t\\ rer_t\\ y_{d_t}\end{bmatrix} + \begin{bmatrix}0.70 & 4.81\end{bmatrix}\begin{bmatrix}D1998_{t-1}\\ c\end{bmatrix}\right] + \begin{bmatrix}0.04 & -0.05 & 1.07\\ -0.21 & 0.04 & 0.45\\ -0.04 & 0.10 & -1.92\end{bmatrix}\begin{bmatrix}\Delta im_{t-1}\\ \Delta rer_{t-1}\\ \Delta\, y_{d_{t-1}}\end{bmatrix}$$

The associated t – values are given as

$$\begin{bmatrix}\Delta im_t\\ \Delta rer_t\\ \Delta\, y_{d_t}\end{bmatrix} = \begin{bmatrix}1.10\\ 0.85\\ 9.06\end{bmatrix}\left[\begin{bmatrix}\ldots & -3.14 & -23.63\end{bmatrix}\begin{bmatrix}im_t\\ rer_t\\ y_{d_t}\end{bmatrix} + \begin{bmatrix}6.61 & 7.36\end{bmatrix}\begin{bmatrix}D1998_{t-1}\\ c\end{bmatrix}\right] + \begin{bmatrix}0.23 & -0.22 & 2.63\\ -1.52 & 0.23 & 1.37\\ -0.899 & 1.51 & -1.70\end{bmatrix}\begin{bmatrix}\Delta im_{t-1}\\ \Delta rer_{t-1}\\ \Delta\, y_{d_{t-1}}\end{bmatrix}$$

The residual of VECM satisfied the diagnostic tests of Breusch-Godfrey (1978) LM test of no serial correlation with one lag ($\chi^2 = 2.01\ p - value = 0.16$), Engle's (1982) no autocorrelation conditional heteroskedasticity (ARCH) LM test with one lag ($\chi^2 = 0.10,\ p - value = 0.76$) and Jarque-Bera normality test ($\chi^2\,(2) = 0.97,\ p - value = 0.62$) at 5 percent level of significance.

From the above representation the long run estimates for import demand function is

$$im_t = \underset{(7.36)}{-4.81} - \underset{(6.61)}{0.70}D1998_{t-1} + \underset{(3.14)}{0.47}rer_t + \underset{(23.63)}{2.21}\, y_{d_t}$$

The results reveal that in long run one percent depreciation of real exchange rate significantly increase the real imports by 0.47 percent, which is opposite to the theoretical expectations. However, in short run the depreciation has an insignificant impact on imports'

demand. A percent increase in domestic income significantly increase the demand for import both in long run and short run. These results are according to the results of Khan (1994) and Yasmeen *et al.* (2018). Import demand is inelastic to change in real exchange rate. Our major imports are based on machinery and petroleum products, which serve as necessity input in production. Inelastic import demand reveals that we have made no progress on developing energy saving and remain dependent on imported energy.

8.2. Results of Export Demand Function

Export demand function is based on three variables real exports (ln *ex*), real exchange rate (ln *rer*) and real foreign income (ln y_f) , as specified in equation (4). The lag length of the VAR model is two period which is suggested by AIC, HQ, FPE whereas, SIC suggest one lag. The residual of the VAR(2) passed the diagnostic test of no serial correlation, no heterosedasticity at 5 percent level of significance and VAR(1) does not. Therefore, lag two is considered as an optimal lag length.

For cointegration analysis, we introduce intercept term unrestrictedly both in long run (cointegrating part) and short run (VAR) model, along D_{1998} dummy variable. The trace statistic after adjusting by factor (T-kl)/T to correct the small sample bias is provided in Table 8.

Table 8

Johanson et al., (2000) Cointegration Test Results

Null Hypothesis	Alternative Hypothesis	$H_c(r)$	0.05 Critical Value ($\lambda = 0.5$, $q = 2$) 90%	95%	99%
r = 0	r > 0	89.55[a]	36.99	12.85	42.85
r ≤ 1	r > 1	23.21	21.93	26.44	27.17
r ≤ 2	r > 2	8.64	11.05	43.46	16.69

Note: '[a]' indicates the rejection of null hypothesis.

The trace test shows one cointegrating vector among the variables of export demand function at 5 percent level of significance. The result of VECM for export demand function is presented as

$$\begin{bmatrix}\Delta ex_t\\ \Delta rer_t\\ \Delta\, y_{f_t}\end{bmatrix} = \begin{bmatrix}-0.07\\ -0.01\\ -0.02\end{bmatrix}\left[\begin{bmatrix}1 & -1.39 & -1.41\end{bmatrix}\begin{bmatrix}ex_t\\ rer_t\\ y_{f_t}\end{bmatrix} + \begin{bmatrix}0.13 & 4.24\end{bmatrix}\begin{bmatrix}D1998_{t-1}\\ c\end{bmatrix}\right]$$
$$+\begin{bmatrix}-0.26 & 0.53 & -1.78\\ -0.15 & 0.08 & 1.38\\ -0.02 & -0.02 & 0.25\end{bmatrix}\begin{bmatrix}\Delta ex_{t-1}\\ \Delta rer_{t-1}\\ \Delta\, y_{f_{t-1}}\end{bmatrix} + \begin{bmatrix}0.10 & -0.36 & -1.21\\ -0.20 & 0.23 & -0.41\\ -0.03 & 0.03 & -0.28\end{bmatrix}\begin{bmatrix}\Delta ex_{t-2}\\ \Delta rer_{t-2}\\ \Delta\, y_{f_{t-2}}\end{bmatrix}$$

The associated t – values are given as

$$\begin{bmatrix}\Delta ex_t\\ \Delta rer_t\\ \Delta\, y_{f_t}\end{bmatrix} = \begin{bmatrix}-3.39\\ -0.78\\ -4.90\end{bmatrix}\left[\begin{bmatrix}\ldots & -1.28 & -1.21\end{bmatrix}\begin{bmatrix}ex_t\\ rer_t\\ y_{f_t}\end{bmatrix} + \begin{bmatrix}0.26 & 0.89\end{bmatrix}\begin{bmatrix}D1998_{t-1}\\ c\end{bmatrix}\right]$$
$$+\begin{bmatrix}-1.81 & 2.56 & -2.10\\ -1.34 & 0.48 & 2.16\\ -1.05 & -0.60 & 1.85\end{bmatrix}\begin{bmatrix}\Delta ex_{t-1}\\ \Delta rer_{t-1}\\ \Delta\, y_{f_{t-1}}\end{bmatrix}$$

$$+\begin{bmatrix} 0.75 & -1.63 & 1.38 \\ -2.02 & 1.37 & -0.63 \\ -1.27 & 0.97 & -2.00 \end{bmatrix}\begin{bmatrix} \Delta ex_{t-2} \\ \Delta rer_{t-2} \\ \Delta\, y_{f_{t-2}} \end{bmatrix}$$

The residual of VECM satisfied the diagnostic tests of Breusch-Godfrey (1978) LM test of no serial correlation with one lag ($\chi^2 = 0.31\ p - value = 0.58$), Engle's (1982) no autocorrelation conditional heteroskedasticity (ARCH) LM test with one lag ($\chi^2 = 0.55,\ p - value = 0.46$) and Jarque-Bera normality test ($\chi^2\,(2) = 3.77,\ p - value = 0.15$) at 5 percent level of significance.

From the above representation the long run estimates for export demand function is

$$ex_t = \underset{(0.89)}{-4.24} - \underset{(0.26)}{0.13}D1998_{t-1} + \underset{(1.28)}{1.39}rer_t + \underset{(1.21)}{1.41}\, y_{f_t}$$

Results suggest that the depreciation of real exchange rate significantly increase the demand for export by 0.53 percent in short run only and does not have any significant impact to boost the export demand in long run which is similar to the finding of Felipe *et al*. (2009). Whereas, increase in foreign income decrease the demand for export in short run by 1.78 percent and has insignificant impact in long run. It shows that we are still exporting commodities with no Pakistan brand. For example, most of our primary goods such as basmati rice are exported to the name of other country brands. Brand loyalty protects the goods in the international market and it is necessary to educate exporters about the branding of their products. The accuracy of this result is further confirmed in the proceeding sections, where the impact of exchange rate depreciation, increase in foreign and domestic income is investigated on the trade balance.

8.3. Results of Trade Balance

In order to realise the impact of real exchange rate on trade balance by following equation 5, the optimal lag length of the VAR model is one period according to AIC, SIC, HQ and FPE information criteria. The residual of the VAR(1) satisfies the pre- requires of no serial correlation, no heterosedasticity at 5 percent level of significance. For cointegration analysis, we introduce intercept term unrestrictedly both in long run (cointegrating part) and short run (VAR) model, along D_{1998} dummy variable. The trace statistic after adjusting by factor (T-kl)/T to correct the small sample bias is provided in Table 9.

Table 9

Johanson et al., (2000) Cointegration Test Results

Null Hypothesis	Alternative Hypothesis	$H_c(r)$	0.05 Critical Value (λ = 0.5, q = 2)		
			90%	95%	99%
r = 0	r > 0	146.77[a]	55.98	58.24	62.66
r ≤ 1	r > 1	39.78 [a]	36.99	38.96	42.85
r ≤ 2	r > 2	23.21	21.93	23.67	27.17
r ≤ 3	r >3	7.83	11.05	12.84	16.69

Note: '[a]' indicates the rejection of null hypothesis.

The trace test shows two cointegrating vectors among the variables of trade balance model at 5 percent level of significance. The result of VECM is reported below.

$$\begin{bmatrix}\Delta tb_t\\ \Delta rer_t\\ \Delta\, y_{f_t}\\ \Delta\, y_{d_t}\end{bmatrix} = \begin{bmatrix}-0.08\\ -0.97\\ 2.83\\ 0.20\end{bmatrix}\left[\begin{bmatrix}1 & 0.09 & -0.05 & 0.28\end{bmatrix}\begin{bmatrix}tb_t\\ rer_t\\ y_{f_t}\\ y_{d_t}\end{bmatrix} + \begin{bmatrix}-0.03 & -0.36\end{bmatrix}\begin{bmatrix}D1998_{t-1}\\ c\end{bmatrix}\right]$$
$$+\begin{bmatrix}0.07 & 0.03 & 0.01 & -0.01\\ 0.96 & 0.07 & 0.04 & 2.21\\ -2.33 & 0.93 & -0.29 & -0.55\\ -0.56 & 0.02 & 0.04 & 0.38\end{bmatrix}\begin{bmatrix}\Delta tb_{t-1}\\ \Delta rer_{t-1}\\ \Delta\, y_{f_{t-1}}\\ \Delta\, y_{d_{t-1}}\end{bmatrix}$$

The associated t-values are

$$\begin{bmatrix}\Delta tb_t\\ \Delta rer_t\\ \Delta\, y_{f_t}\\ \Delta\, y_{d_t}\end{bmatrix} = \begin{bmatrix}-.17\\ -2.16\\ 4.97\\ 1.94\end{bmatrix}\left[\begin{bmatrix}\ldots & 3.73 & -2.23 & 2.55\end{bmatrix}\begin{bmatrix}tb_t\\ rer_t\\ y_{f_t}\\ y_{d_t}\end{bmatrix} + \begin{bmatrix}-2.20 & -3.56\end{bmatrix}\begin{bmatrix}D1998_{t-1}\\ c\end{bmatrix}\right]$$
$$+\begin{bmatrix}0.40 & 1.25 & 0.53 & -0.03\\ 0.93 & 0.42 & 0.39 & 3.34\\ -1.77 & 4.47 & -2.38 & -0.67\\ -2.31 & 0.51 & 1.71 & 2.46\end{bmatrix}\begin{bmatrix}\Delta tb_{t-1}\\ \Delta rer_{t-1}\\ \Delta\, y_{f_{t-1}}\\ \Delta\, y_{d_{t-1}}\end{bmatrix}$$

The residual of VECM satisfied the diagnostic tests of Breusch-Godfrey (1978) LM test of no serial correlation with on lag ($\chi^2 = 0.31\ p - value = 0.58$), Engle's (1982) no autocorrelation conditional heteroskedasticity (ARCH) LM test with one lag ($\chi^2 = 0.55,\ p - value = 0.46$) and Jarque-Bera normality test ($\chi^2\,(2) = 3.77,\ p - value = 0.15$) at 5 percent level of significance.

From the above representation the long run estimates for import demand function is

$$tb_t = \underset{(3.56)}{0.36} + \underset{(2.20)}{0.03}D1998_{t-1} - \underset{(-3.73)}{0.09}rer_t + \underset{(2.23)}{0.05}\, y_{f_t} - \underset{(-2.55)}{0.28}\, y_{d_t}$$

The depreciation of real exchange rate significantly reduce the trade balance by 0.09 percent in long run and has insignificant impact in short run. It also confirm our previous results that depreciation will not reduce the demand for imports and not increase the demand for exports in Pakistan in long run. The results of change in domestic income and foreign income has desirable impact on trade balance as predicted by the theory.

Therefore, we clearly rejects the phenomena of J-curve and conclude that exchange rate policy can do nothing on the structure. In fact, the need for a devaluation is the inefficiencies in the structure of the economy.

8.4. Regime wise Trade Elasticities

Regime wise trade elasticities enable us to judge whether we gain from depreciated exchange rate under different trade regimes with different exchange rate policies in form of trade balance improvement or not. Let us look at the import demand elasticities from Table 10, it reveals that depreciation of real exchange rate increase the demand for import irrespective of exchange rate policy. However, magnitude of exchange rate elasticity tells that

under flexible exchange rate policy with liberalised trade policy, there is a lesser increase in demand for imports (that is 0.40 percent) as compare to restricted trade regime along the managed float exchange rate that is 0.74 percent. It indicates the fact that in restricted trade regime import demand are more responsive to change in exchange rate.

From Table 11, export demand elasticity reveals that depreciation not support to uplift the demand for exports. Therefore, linking export promotion to depreciation of currency is a non-sense and should figure out the real causes of export promotion through diversification, value addition and reducing the cost of the raw material by relaxing tariffs that are used in export production to make the exports competitive in the world market. Otherwise, depreciation will only increase the price of imported raw material which ultimately increase the unit cost of exports. Major imports of Pakistan are based on raw material and estimates suggest that around 20 percent to 30 percent of imported inputs have been used at different stages of production in Pakistan (Ali, 2014).

So the depreciation is not in the favour of Pakistan's trade, the same arguments is making from the balance of trade elasticities. It can be seen from Table 12, that real exchange rate depreciation significantly cause the trade deficit by 0.07 percent. So confidently, we can say that Marshall Lerner condition does hold for Pakistan and will remain a net importer.

Table 10

Import Demand Elasticities

Trade Regime	Exchange Rate Policy	Data Period	Yd	RER
Restricted	Managed Float	1980-1989	1.03***	0.74*
Process of liberalisation started	Managed float	1990-1999	2.55***	0.50
liberalised	Flexible	2000-2018	1.77***	0.40*
Complete Sample period		1980-2018	2.21***	0.47***

Note: ***,**,* are the significance level at 1 percent, 5 percent and 10 percent.

Table 11

Export Demand Elasticities

Trade Regime	Exchange Rate Policy	Data Period	Y_f	RER
Restricted	Managed Float	1980-1989	3.21***	0.50
Process of liberalisation started	Managed float	1990-1999	2.53***	0.76
liberalised	Flexible	2000-2018	3.19***	-0.56
Complete Sample period		1980-2018	1.41	1.39

Note: ***,**,* are the significance level at 1 percent, 5 percent and 10 percent.

Table 12

Balance of Trade Elasticities

Trade Regime	Exchange Rate Policy	Data Period	Y_d	Y_f	RER
Restricted	Managed Float	1980-1989	0.12***	-0.12***	-0.07***
Process of liberalisation started	Managed float	1990-1999	0.19	-0.24***	-0.07
liberalised	Flexible	2000-2018	0.02	0.33***	-0.08*
Complete Sample period		1980-2018	-0.28***	0.05***	-0.09***

Note: ***,**,* are the significance level at 1 percent, 5 percent and 10 percent.

9. CONCLUSION AND RECOMMENDATIONS

Depreciation is an outcome as a country loses reserves rather than a policy option to improve trade. Elasticities reflect the structure of the economy. Export elasticity reveals that export demand is less responsive to change in real exchange rate. It shows that we are still exporting commodities with no Pakistan brand. For example, most of our primary goods such as basmati rice are exported to the name of other country brands. Brand loyalty protects the goods in the international market and it is necessary to educate exporters about the branding of their products. Import demand is also inelastic to change in real exchange rate. Our major imports are based on machinery and petroleum products, which serve as necessity input in production. Inelastic import demand reveals that we have made no progress on developing energy saving and remain dependent on imported energy. Therefore, exchange rate policy can do nothing on the structure. In fact, the need for a devaluation is the inefficiencies in the structure of the economy. Thus the choice is clear reform to fix the structure or let the exchange rate to depreciate.

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