Pakistani Real Exchange Rate System: An Empirical Analysis

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Abstract

This paper intends to evaluate the consequences of the real exchange rate system of Pakistan in terms of considering the USA relationship. Research question of the study is whether real exchange rate in Pakistan is being effectively handled to observe the competitiveness of the country in trading with the USA? Time period of the study is January 1987 to April 2015. Authors found that the Pakistani has been very successful in using its exchange rate policy to maintain the country's competitive position in the bilateral export market with the USA. Political instability, terrorism, bureaucratic cost, easing policies for doing business and their impact may also be measured as it has negative impact on the economic productivity, efficiency and effectiveness on Pakistani economy.
Key words: Real exchange rate, Bilateral trade, Pakistani economy, Equilibrium Real Effective Exchange Rate (ERER)

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1. INTRODUCTION

Since 1997, Pakistan has perused the managed float exchange rate policy. Recent literature widely articulated that the management of the real exchange rate is central for economic growth (Rodrik, 2008), some researchers have argued that overvaluation harms growth and calls for the exchange rate to be at its "equilibrium" level (Easterly 2005). Based on their empirical estimations, Rodrik (2008) and Bhalla (2012) posited that undervalued exchange rates are optimal for developing countries, as they lead to improvement in labor market. These authors argued that overvaluation would not only lead to periods of macro economic instability, balance of payments crises, stop-go economic growth, rent-seeking and corrupt practices. Specifically, Rodrik (2008) used a panel dataset of 184 countries over the 1954-2004 period and regresses per capita GDP growth on an index of undervaluation and GDP per capita and accounts for fixed effects and year-specific dummies, the author found that undervaluation is systematically associated with periods of high growth, an effect that is large and significant for poor countries. Possibly, undervaluation causes factors of production to move in the direction of export and import-competing sectors which usually have higher productivity growth rates (Cottani et al 1990), larger economies of scale, learning by doing, and knowledge spillovers (Rodrik, 2008). These in turn rendered an economy more competitive, increased its domestic profitability and investment leading ultimately growth (Bhalla 2012). For more than four decades Pakistan is suffering from lack of proper democracy and there is political crisis and terrorism which creates difficult macro environment of business model in Pakistan. However, still the country manages quite economically good relationship with the USA.

Research question of the study is whether real exchange rate in Pakistan is being effectively handled to observe the competitiveness of bilateral trading with the USA ?

In this study, Section:2 depicts Literature review; Section:3 considers Pakistani Exchange Market; Section :4 deals with methodology; Section:5 considers Analysis of the findings; Section:6 discusses Conclusions and Implications.

2. LITERATURE REVIEW

Janjua (2007) observed that the results of the study reveal that Equilibrium Real Effective Exchange Rate (ERER) is determined by variables such as: (a) terms of trade, (b) trade openness, (c) net capital inflows, (d) relative productivity differential, (e) government consumption and (f) workers' remittances.

Zakaria and Ghauri(2011) argued that Pak-rupee real exchange rate is significantly negatively affected by terms of trade shocks, suggesting that income effect of this variable dominates substitution effect. An increase in the terms of trade improves the current account and raises domestic income and expenditures. To restore internal and external balance, domestic prices rise and/or the nominal exchange rate appreciates. In either case, the result is having an appreciation.

Zulfiqar and Kausar (2012) found that in Pakistan trade liberalization has a positive impact on export growth. The study also suggests that a long run positive relationship among exports and real effective exchange rate in the presence of openness. The main findings of the paper were: Openness has positive significant impact on export growth in the long run; World income has positive impact on the export growth in the presence of openness; Real effective exchange rate has a positive effect on export growth in the presence of openness; FDI has a negative impact on export growth.

Hassan(2013) depicted that capacity of exchange rate uncertainty of the US, UK, and UAE with Pakistan to hit its Trade Growth. The regression results suggest a link between exchange rate uncertainty and trade growth of sample economies. So, for the purpose of economic development author suggested to control or forecast the exchange rate for future period uncertainty and reduce the faced risk to foreign investor to save the reduction in foreign trade. So there must be a stabilization strategy to hold control of this exchange rate uncertainty. Practically for Pakistan economy need its central bank to exert control upon the monitory policy to avoid as much as possible the volatility in the exchange rate.

Zardad, et al.(2013) tried to explore the factors which affect the volatility of real exchange rate in Pakistan's economy and determine the equilibrium real exchange rate (RER). They estimated the model of real equilibrium exchange rate that involved the main theoretical factors which have a real significant in the regression analysis. Based on theoretical literature there are almost four important factors causing real exchange rate volatility i.e., relative productivity, government expenditure, term of trade and trade openness. First, there is a solid evidence that relative productivity (positive effect) (the well-known Balassa-Samuelson), terms of trade (positive effect), government expenditure (negative effect) and trade openness (negative effect) are reflected as the most driving factors of the Pakistan's real exchange rate, which approve the hypothetical relations between the real exchange rate volatility and its determinates. Second, the sign of error correction term is negative as expected; it shows convergence to equilibrium level in Long-run.

Ahmad et al.(2014) described that in Pakistan stability of exchange rates may create a positive environment for encouraging the investment and this can improves balance of payment. They found that exchange rate and balance of payment has a vital correlation to each other. It must be perceive that how can be established an effective exchange rate policy. We used autoregressive distributed lags (ARDL) model to estimate the connection between these two variables, the consequence show the significant and positive relationship. It has seen that exchange rate lags is statistically significant and has a positive effect on BOP, accordingly the of our hypothesis is that there present a significant correlation between export and balance of payment.

From the aforesaid literature review though studies have been done on the impact of real effective exchange rate on the Pakistan such as Janjua (2007) but real exchange rate was done to simply observe BOP and export such as Ahmad et al.(2014). But this study tries to see competitiveness on the Pakistani economy and bilateral trade relationship with USA depending on real exchange rate.

3. PAKISTANI EXCHANGE MARKET

As cited by Debowicz and Saeed (2014), Planning Commission of Government of Pakistan, (2011) articulated that sustained high growth has eluded the country and recognizes the central role that the real exchange rate policy has in its strategy to generate growth. As recently observed by the International Monetary Fund (2012), the Pakistani rupee has been overvalued in recent years. Interestingly, Debowicz and Saeed (2014) argued that widespread symptoms of overvaluation through the Pakistan economy are evident over the IMF's observed period: export growth has been

moving in stop-go fashion with hopes remaining pinned on remittances to keep international reserves at sustainable levels rather than on export earnings.

Furthermore, in their elaborate analysis of the Pakistani real rupee's alignment in the last three decades and using data up to 2010, Debowicz and Saeed (2014) and concluded that (1) Pakistan experienced two episodes of undervaluation from 1987 to 1995, and from 2003 to 2005 and two episodes of overvaluation from 1981 to 1986 and from 1996 to 1998; (2) The Pakistani rupee has been systematically overvalued during the last half of a decade; (3) Their estimation results indicated that the rupees has been overvaluation in the order of 25 percent, much more than 10 percent, reported by the IMF's Article IV (IMF 2012); and (4) these authors recommended the Pakistani government progressively devalue the nominal exchange rate while keeping domestic inflation under control in order to sustain a competitive real exchange rate that allows the country to enter into a high-growth trajectory with a more progressive income distribution.

Unless the Pakistani central bank has superior ability to achieve the above suggested objectives,progressively devaluate the domestic currency and keep domestic inflation under control are a tall order. Additionally, this Thigh shall beg Thigh's neighbor policy will create inflationary pressure, appealing for reliefs from the populace, possible social unrest and certainly retaliatory reactions from trading partners. Also, under relative purchasing power parity (PPP), the differential inflation rates in the two economies must be exactly offset by changes in the respective nominal exchange rates so that the two countries' competitive positions will be unaffected.

4. METHODOLOGY AND METHODS

As Figures 1 indicates up to April 2015, Pakistan's inflation has exceeded that of the U.S. In this context, the real exchange rate sheds light on Pakistan's competitive position in the export markets relative to the US. The real exchange rate is denoted by q, and is expressed as,

$$q = \frac{1 + \pi_{pk}}{(1 + \varepsilon_{pk,us})(1 + \pi_{us})}$$

where π_{pk} is the Pakistani inflation rate, π_{us} is the US's inflation rate and $(1 + \varepsilon_{pk,us})$ is the ratio of Pakistani rupee-US dollar exchange rate to this exchange rate in the previous period.

Under PPP, the real exchange rate is unitary, $q = 1$. Other things equal, as the rupee price of the US dollar rises, the real exchange rate decreases, improving Pakistan's competitive position vis-a-vis the US. Likewise, other things equal, if Pakistan's inflation rate exceeds that of the US, then q rises above unity with a consequent deterioration of Pakistan's competitive position and all the attendant negative effects on its economy. In this case to prevent a rise in the real exchange rate, the rupee price of the US dollar must rise to reflect the inflation differential.

Figure 1
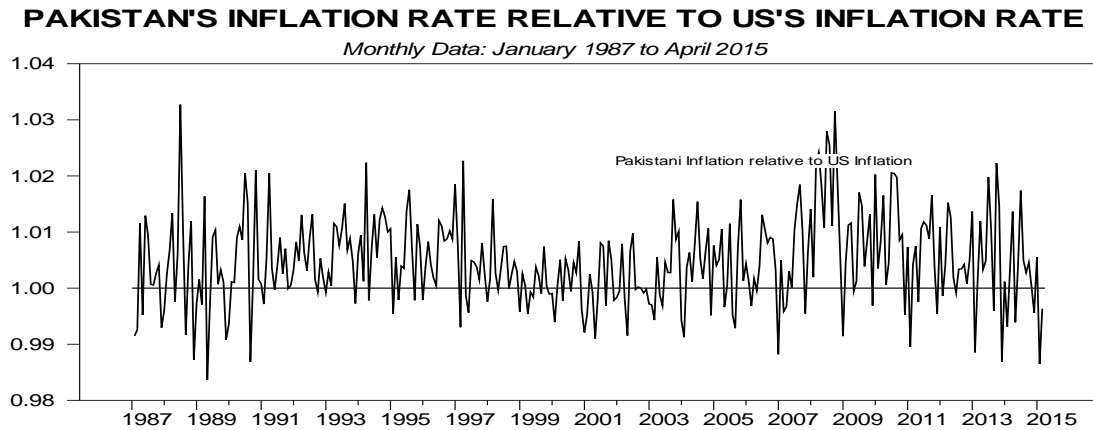
PAKISTAN'S INFLATION RATE RELATIVE TO US'S INFLATION RATE

Monthly Data: January 1987 to April 2015

Sources: International Monetary Fund, Federal Reserve Bank of St. Louis, and calculations by the authors.

Time period of the study was from 1987 to April,2015.

5.   ANALYSIS OF THE FINDINGS

The real exchange rate for Pakistan-US were calculated, using monthly data from International Monetary Fund and the Federal Reserve Bank of St. Louis. As always, monthly data contains a lot of noise. Additionally, there are some degree of rigidity in business operations, i.e., their business plans cannot be changed monthly; therefore, there is time lag in export markets' reactions to changes in monthly real exchange rate. Additionally, as Figure 3 suggests, the growth of Pakistani exports has experienced a structural break in 2003.

To discern these possibilities, the 12-month, 24-month and 36-month moving averages of the above q and their±2 standard errors were calculated in addition to its monthly values. The gallery of graphs below, Figures 3, 4, 5 and 6, illustrates the monthly values of q as well as its 12-month, 24-month and 36-month moving averages and their ±2 standard errors.
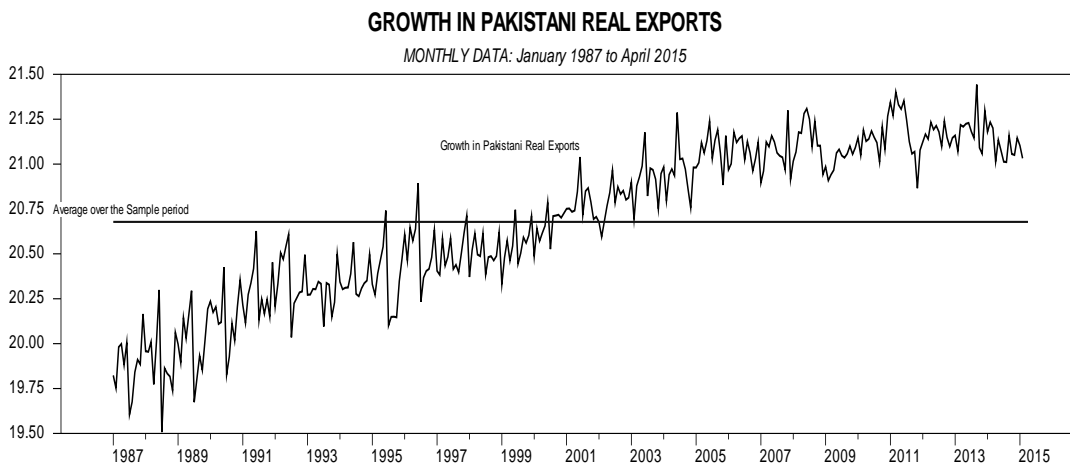
An analysis of the results reveals that more reliable 12-month, 24-month and 36-month-moving averages of the real exchange rates have been larger than 1.0. However, except for the 2004-2008 and a short period of time in 2011, they are not statistically significant from unity at the 5 percent level as the bands between their ±2 standard errors contained the unity over the sample period.
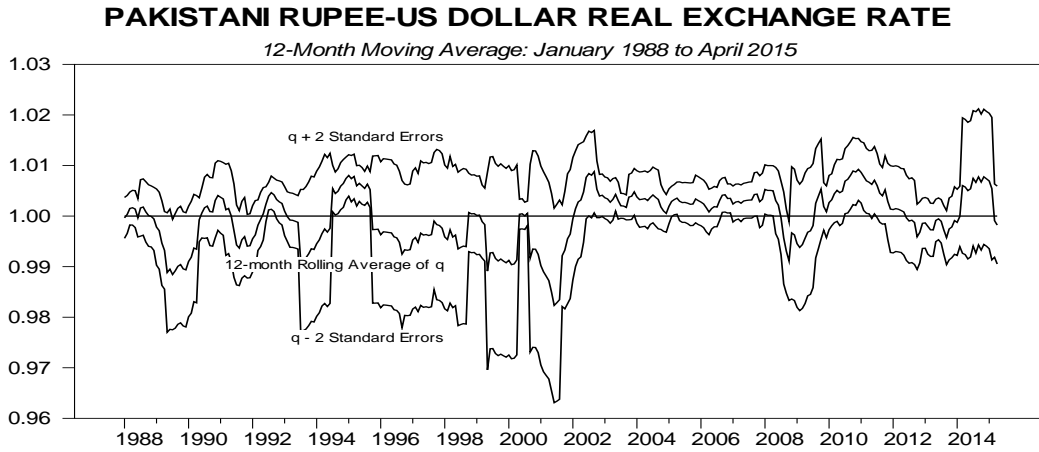
Figure 2
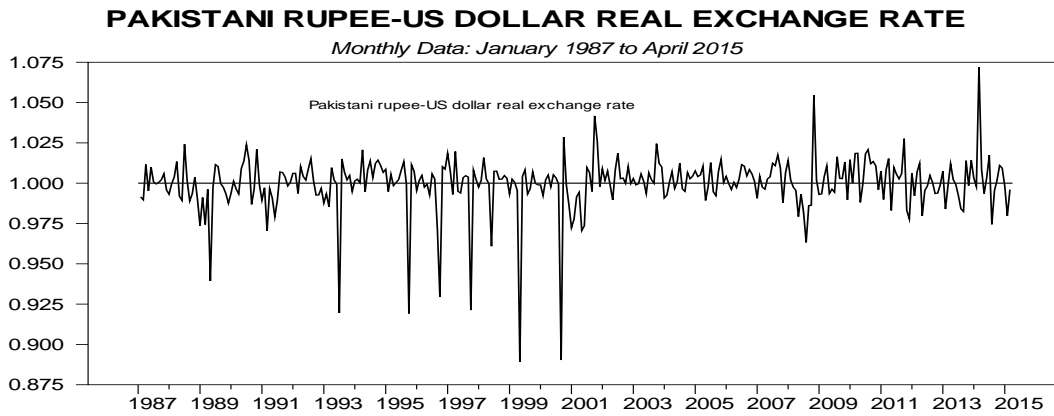
PAKISTANI RUPEE-US DOLLAR REAL EXCHANGE RATE

Monthly Data: January 1987 to April 2015

Sources: International Monetary Fund, Federal Reserve Bank of St. Louis, and calculations by the authors.

Figure 3

GROWTH IN PAKISTANI REAL EXPORTS

MONTHLY DATA: January 1987 to April 2015

Sources: International Monetary Fund and calculations by the authors.

Figure 4

PAKISTANI RUPEE-US DOLLAR REAL EXCHANGE RATE
12-Month Moving Average: January 1988 to April 2015

Sources: International Monetary Fund, Federal Reserve Bank of St. Louis, and calculations by the authors.
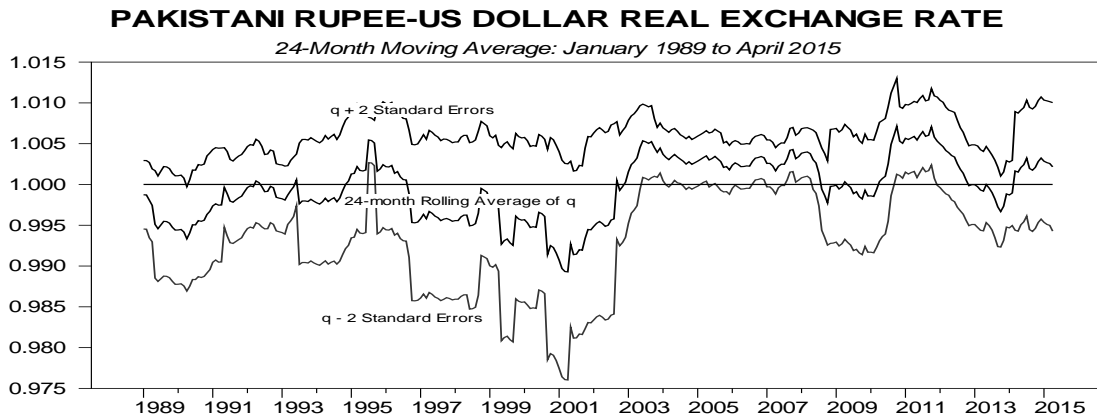
Figure 5

PAKISTANI RUPEE-US DOLLAR REAL EXCHANGE RATE
24-Month Moving Average: January 1989 to April 2015
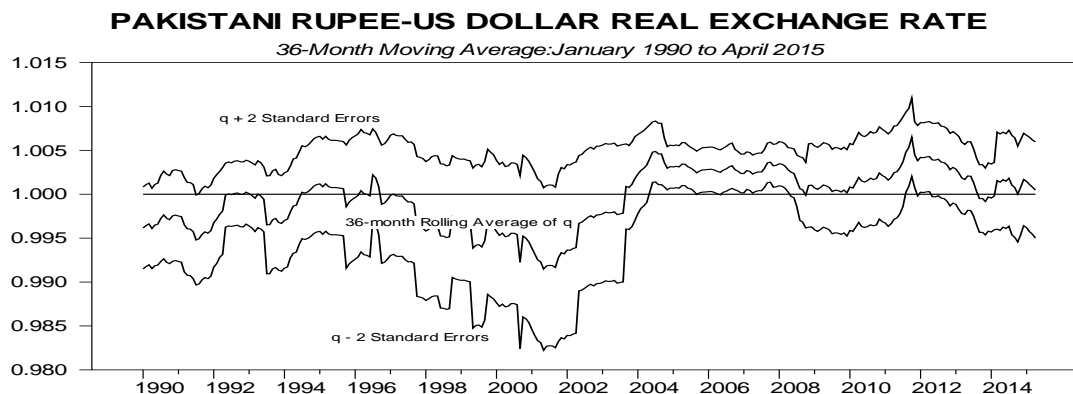

Sources: International Monetary Fund, Federal Reserve Bank of St. Louis, and calculations by the authors.

Figure 6

PAKISTANI RUPEE-US DOLLAR REAL EXCHANGE RATE
36-Month Moving Average:January 1990 to April 2015

Sources: International Monetary Fund, Federal Reserve Bank of St. Louis, and calculations by the authors.

6. DISCUSSIONS,CONCLUDING REMARKS AND IMPLICATIONS

Although the above calculated *q'*sare greater than unity. Except for the 2004-2008 and a short time in 2011, they are not statistical significant from unity at the 5 percent level over the sample period. Unlike previous empirical results, this shows that the Pakistani has been very successful in using its exchange rate policy to maintain the country's competitive position in the bilateral export market with the USA. Cottani et al (1990) observation that usually have higher productivity growth rates is applied in the Pakistani economy. In the global value chain despite tremendous political crisis, Pakistan economy is not fully destabilize their economy.The study however, disagree with the findings of Zakaria and Ghauri(2011) who observed that Pak-rupee real exchange rate is significantly negatively affected by terms of trade shocks, suggesting that income effect of this variable dominates substitution effect. The reason behind that growth of real export though volatile with the USA but still in quite satisfactory, Ahmad et al.(2014) findings about Pakistani economy is supported by the study though there is volatility in exchange rate but this volatility is very steadily affecting the economy .This may generate an encouraging surroundings for hopeful situation in the economy despite massive political turmoil. Investment, export should be raised multi laterally not bilaterally with the USA and improvement of balance of payment position may be more stabilized.

7. FUTURE SCOPE

The study actually deals with the impact on real exchange rate of Pakistan and compare with the scenario of the USA. In future a research can be done compare with Bangladesh and Indian economic situation with Pakistani economy. Moreover, for effective research work in lieu of competiveness in bilateral trade, multilateral trade with other developed and developing nations and Pakistan should be studied. Another study may be done on role of Pak. Rupees in the Asian clearing Union (ACU) for doing business in the member countries though ACU is now mostly pegged with USD.

Political instability, terrorism, bureaucratic cost, easing policies for doing business and their impact may also be measured as it has negative impact on the economic productivity, efficiency and effectiveness on Pakistani economy. As such Pakistan should bail out from political and terrorist movement so that its real exchange rate can play larger role to improve export and Balance of payment position and also foreign direct investment in Pakistan could be raised.

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