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On Using Exchange Rate for Promoting Exports

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C O N T E N T S

	<i>Page</i>
Abstract	v
1. Introduction	1
2. Trade Impacts of Depreciation	2
3. Debt Impacts of Depreciation	5
4. Exchange Rate, Budget Deficit and Current Account Deficit	6
5. Impact of Depreciation on Income Inequality	7
6. Summary and Conclusion	7
References	7

List of Figures

Figure 1. Scatter Diagram of Growth in Exports versus Depreciation of Pakistani Rupee	4
Figure 2. Scatter Diagram of Growth in Exports versus Lagged Depreciation of Pakistani Rupee	5

ABSTRACT

In recent years, Pakistani exports suffered large setback and especially textile exports decreased significantly. Some economists are suggesting devaluation¹ of Pakistani Rupee to improve the exports [Javed, *et al.* (2016)]. Many countries including Pakistan have experimented devaluation in the past to boost exports, but most of these experiment did not bring desired results and a significant change in the balance of trade could not be observed. For example, value of Pakistani rupee declined by 20 percent during 1981-82 and by 34 percent during 2007-09. No improvement in trade could be observed after each episode of depreciation, on contrary, the gap between exports and imports widened. There are well known explanations in contemporary economic literature which explain this counterproductive impact of depreciation. However, analysing the impacts of depreciation and/or devaluation in context of trade only is never justifiable. The depreciation of local currency has serious implications for many other important economic indicators including external debt, tax revenue, budget deficit, current account deficit and domestic inflation. For example, a one percent reduction in value of local currency causes an increase in external debt by the same percentage, measured in local currency. Due to this increase in the external debt, the amount needed for debt servicing shall also increase which increases the budget deficit and the current account deficits. The suggestion of depreciation could be supported only if the sum of expected gains from all kinds of its impacts are positive. Given the complexity of all this estimation, one can focus on external debt and balance of trade. The effect of depreciation on external debt can be easily counted, and the improvement in trade must be more than the increase in external debt to justify depreciation. Taking into account all these factors, particularly the debt factor, it could be easily seen that net impacts of devaluation are negative and extremely harmful for the Pakistan Economy.

JEL Classifications: B17, B22, F40

Keywords: Exchange Rate, J Curve, Currency Devaluation, Balance of Trade, External Debt

¹Devaluation is reduction in price of local currency as a policy by relevant authorities whereas depreciation is the reduction in price of local currency due to market forces. The impact of devaluation and depreciation on most of economic indicators remains same. Therefore, the two terms are used interchangeable in this paper

1. INTRODUCTION

Fluctuations in exchange rate, whether they are due to market forces or whether they are due to policy, have serious impacts on various social and economic indicators. These indicators include balance of trade, external debt, debt servicing, tax revenue, budget deficit, current account deficit and the distribution of resources. However, most of the literature on impacts of exchange rate is written in the context of international trade only. Unfortunately, the trade impacts of exchange rate are uncertain and a depreciation/devaluation can have both positive and negative impact on trade. It can deteriorate the balance of trade or it can improve it, depending on the validity of certain assumptions. These assumptions are generally referred as Marshall-Lerner conditions which state that balance of trade can improve by depreciation only if the trade goods are elastic. If the trade goods are inelastic, the depreciation can deteriorate the balance of trade instead of improving it.

However, the more important thing is that, trade impacts are only one of many facets of impact of depreciation. The depreciation has serious impacts on many other indicators including those mentioned above. Take the external debt as an example, Pakistan owes about 73 billion dollars as external debt.¹ At the current exchange rate of PKR 105/US\$, the amount of external debt would be PKR 7665 billion. Suppose the rupee is depreciated and the new exchange rate is PKR 125/US\$. The amount of external debt would become PKR 9125 billion with an increase of PKR 1460 billion. This calculation is based on simple accounting without any epsilon at the end. Suppose the debt and international trade are the only two variables which are effected by depreciation and also suppose that Marshal Lerner conditions are valid so that depreciation improves balance of trade. Even than the depreciation could be beneficial for the economy only if the expected increase in balance of trade is larger than expected rise in the amount of external debt. If the expected improvement in balance of trade is less than this additional debt, the economy would be in a net loss. As a result of depreciation, the amount needed for immediate servicing on external debt would also increase because the foreign currency has become expensive. This would also put pressure on current account deficit and budget deficit. In addition to all

¹SBP Archive on external debt.

these, supposing the Marshall Lerner conditions are valid, which means depreciation improves trade, the depreciation policy would help exporters and will increase their earning, on the other hand, the ordinary taxpayer would face the burden of increased debt servicing. Therefore, the depreciation is having serious implications for the distribution of resources as well. Therefore, devaluation policy must not be used if the expected improvement in balance of trade does not supersede the surplus debt that could emerge due to fluctuation.

This paper analyses the impacts of depreciation on various economic and social indicators which are highly related to exchange rate fluctuations and analyses how a devaluation would affect the economy. The rest of this paper is organised as follows: Section 2 discusses the trade impacts of depreciation; Section 3 analyses the debt impacts of depreciation, Section 4 analyses the impact of depreciation on budget deficit and trade deficit whereas section 5 discusses the impact of depreciation on income and wealth inequality. Finally, Section 5 concludes the discussion.

2. TRADE IMPACTS OF DEPRECIATION

The textbook economics teaches depreciation as a favourable policy for improvement in Balance of Trade. This is based on the argument that by depreciation, the domestically produced goods would become cheaper for the foreigners and therefore the exports will improve, similarly, the import goods would become expensive and therefore imports will decrease. The net impact would be an improvement in balance of trade. The theory also suggests that initially there will be a decline in balance of trade because of increase in import bill, but ultimately import will reduce and the exports will rise and the balance of trade will follow a J-type path. That's why the theory is also called J-curve theory.

However, there is a certain condition which needs to hold for existence of J-curve. This condition is termed as Marshall Lerner condition named after English economist Alfred Marshall (1842-1924) and the Romanian born economist Abba Lerner (1905-1985). Marshall Lerner condition states that the depreciation of local currency can improve balance of trade only if both imports and exports are elastic and sum of the elasticities is more than unity. In case of inelastic goods, the balance of trade may deteriorate instead of improvement.

The Marshall Lerner theory could be easily understood by a simple example. Consider an economy consuming 1000 barrels of oil from international market by spending 50,000 \$. Suppose the exchange rate is LCU 100/\$ so that total imports of the economy are LCU 5 million. Suppose the local currency is depreciated by 20 percent and the new exchange rate is LCU 120/\$. The oil would become expensive for the residents of the economy. However, oil is a necessity which must be consumed to run the business of the country, therefore the amount of oil imports could not be reduced. At the new exchange rate, the

import bill for the same amount of oil would become LCU 6 million instead of 5 million widening the trade deficit by LCU 1 million. As a result, the balance of trade may deteriorate instead of improvement.

The Pakistani fuel import during FY 2015-16 have been about US\$ 7.7 billion² and this amount converted into Pakistani rupees would become PKR 808 billion, assuming the exchange rate to be PKR 105/\$. The GDP growth rate in Pakistan is increasing for last three years and to sustain this growth rate, the country would need further energy imports and any reduction in the consumption of oil imports is highly unlikely, even if the fuel becomes expensive. Suppose the rupee is devalued and the new exchange rate is PKR 125/\$. The import bill for same amount of petroleum products shall become 962 billion adding PKR 154 billion to the import bill and to the trade deficit. To maintain the balance of trade, the expected increase in country's exports must be equal to this surplus import bill as well as the surplus bills of other non-elastic imports. For a significant reduction in trade deficit, the expected increase in exports should be significantly higher than the expected rise in import bill of oil and other non-elastic goods.

For this reason, the devaluation policy often fails to improve the trade balance and there are large numbers of evidence for this [Chinn (1989); Chinn (1991), Rose and Yellen (1989); Chinn (2005); Panda and Reddy (2016)]. There is very huge discussion in the literature about the impacts of exchange rate on trade. Many people have found evidences for the conventional view that the depreciation improves balance of trade, whereas many other found no evidence of improvement in trade and no evidence for the Marshal Lerner conditions. Many people have done sophisticated econometric analysis on existence of J curve for Pakistan and find no evidence. Bhamani-Oskoe who is considered as an authority on international trade, summarises the literature on J curve as follows [Bhamani-Oskoe and Cheema (2009)].

Over the next decades several studies sought to gather evidence for Magee's³ hypotheses. Important works from this period include Miles (1979), Bahmani-Oskoe (1985), Flemingham (1988), Meade (1988), Rosenweig and Koch (1988), Noland (1989), Marquez (1991), and Marwah and Klein (1996) among others. These studies experimented with various econometric models, introduced new definitions for the endogenous and exogenous variables, covered different time periods and included a wide range of countries in their analysis. The empirical evidence however remained mixed.

Bhamani-Oskoe and Cheema (2009) also summarises the literature on the J-curve in Pakistan and concludes that the evidences are mixed. They point

²Data Archive of State Bank of Pakistan available at <http://www.sbp.org.pk/ecodata/index2.asp>

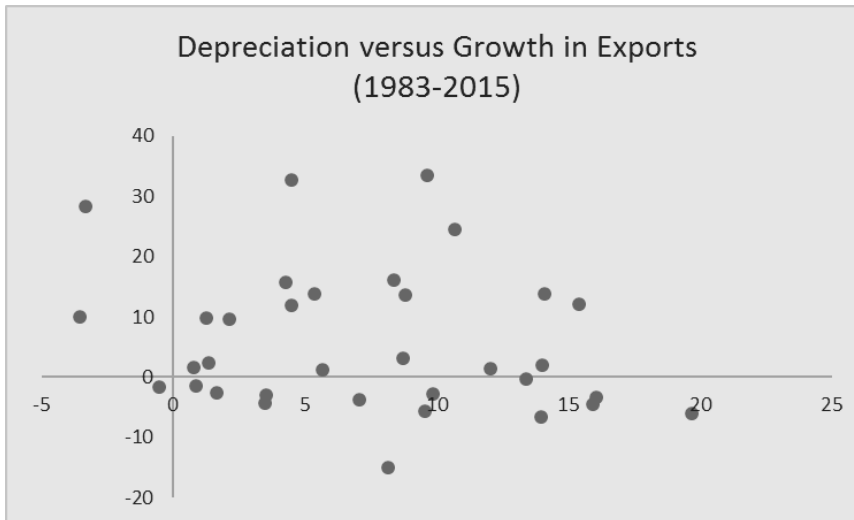
³Magee (1973) was the first person to explore the existence of J-curve phenomenon, that's why J-curve hypothesis is often referred as Magee's hypothesis.

out that the studies finding J-curve are somewhat biased because of ignoring stationarity issue. Bhamani-Oskoe and Cheema (2009) themselves tests the existence of J-curve for Pakistan and found vague support for the hypothesis.

Simple descriptive analysis of actual Pakistani data provides strong support to findings of Bhamani-Oskoe and Cheema (2009). Pakistani currency lost its value in 1981-82 by about 20 percent and the official exchange rate changed from PKR 9.9/\$ to PKR 11.84/\$. The average of trade deficit for four years before this depreciation has been about PKR 24 billion and the average of trade deficit for four years after this depreciation has been PKR 46 billion. The value of dollar against Pakistani rupee rose from PKR 60/\$ to PKR 70/\$ in 2008 and to 81 in 2009 resulting a 35 percent decline in the value of Pakistani rupee. The average trade deficit for four years before this depreciation was about PKR 352 billion and the average trade deficit for four years after depreciation has been PKR 1085 billion. Therefore, there was an increase of PKR 733 billion in the trade deficit instead of any improvement. This clearly indicates that the depreciation did not help in improving balance of trade in the past.

Fig 1 summarises relationship between depreciation/devaluation and the growth of exports for Pakistan during the period 1983-2015.

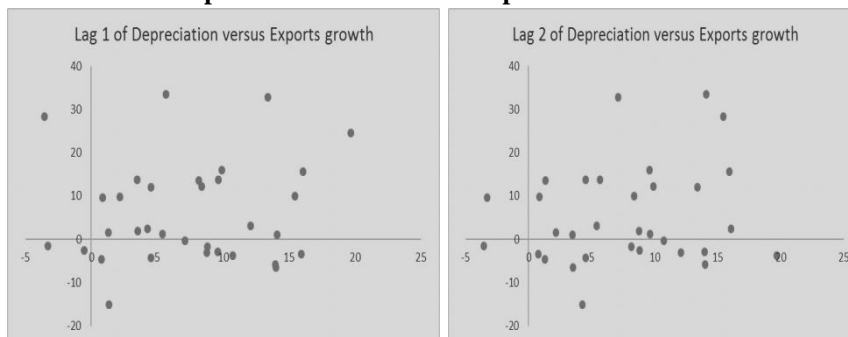
Fig. 1. Scatter Diagram of Growth in Exports versus Depreciation of Pakistani Rupee



It is evident from the figure that there is no strong relationship between the depreciation of Pakistani rupees and growth in exports. The figure plots depreciation and growth for the same year, therefore indicates that the depreciation had no immediate impact on exports. However, it may be argued

that effect of depreciation appears with some lag, as hypothesised by J-curve. Therefore, we also plot the exports growth versus lag values of depreciation. These graphs are plotted in Fig 2.

Fig. 2. Scatter Diagram of Growth in Exports versus Lagged Depreciation of Pakistani Rupee



Looking at the graphs of exports versus lags of depreciation, we see a positive correlation appears to emerge, but the relationship is insignificant with very high p-value (35 percent and 48 percent), therefore no evidence of relationship between two variables could be found even after taking into account the lags effects.

3. DEBT IMPACTS OF DEPRECIATION

The relationship between external debt and exchange rate is deterministic and did not involve any stochastic error term. By end of FY 2016, Pakistan's total external debt and liabilities (including private and public) were about US\$ 73 billion. At the existing exchange rate of PKR 105/\$, the total debt would become PKR 7665 billion. Suppose the currency is devalued to PKR 125/\$. The debt would count as PKR 9125 billion with an increase of PKR 1460 billion. The debt increased without any further borrowing.

The debt impacts of exchange rate are extremely important but extremely ignored in the literature. One very important study that indicates the significance of problem is by Cedric Tille, who has been one of the directors of Federal Reserve. Tille (2003) writes

In 2001, the United States net debt to the rest of the world jumped to \$2.3 trillion, a level double that recorded in 1999. Much of the increase reflects the new borrowing, a third of the change, however, can be traced to a simple accounting effect—the impact of a rising dollar on the value of U.S. assets held abroad.

This short excerpt from Tille indicates the intensity of the problem. Increase in the assets of United States implies the increase in liabilities of

borrower nations. This increase in liabilities is not due to any further borrowing, but just due to depreciation of borrower's currency against dollar. If there could be a 33 percent rise in liabilities just in two years, how much would it be if we accumulate it over a longer period?

However, very surprisingly, the literature is silent on this phenomenon which is referred by some as simple accounting effect. One study in this regard is due to Rehman, *et al.* (2012) who write very detailed note on this phenomenon.

The external debt by the end of Musharraf regime was about US\$ 50 billion, which translate to PKR 3000 billion at the exchange rate of that time. Suppose there was no further borrowing and the debt servicing is equal to interest payment so that total dollar amount of debt is constant. The debt at current exchange rate would count PKR 5,250 billion showing 75 percent increase in the rupee value of external debt and it would become more than PKR 6,250 billion if the rupee is further depreciated to PKR125/\$.

The change in rupee value of external debt is extremely important because the nation earns in rupee, converts it into dollars and pays to foreign donors. Higher the rupee value of external debt, higher would be its real worth in the country and higher would be the cost to pay this debt. Therefore, the impact of depreciation should never be calculated in terms of trade only and the studies ignoring debt impact seriously miss a very important point.

4. EXCHANGE RATE, BUDGET DEFICIT AND CURRENT ACCOUNT DEFICIT

The amount reserved for foreign debt servicing in FY 2016-17 was PKR 556 billion of which PKR 113 billion is the interest payment, whereas remaining is the principal repayment. This turns out to be US\$ 5.23 billion at the current exchange rate. Suppose the currency is depreciated and the new exchange rate is PKR125/\$, the amount required for the debt servicing of same amount of dollars would become PKR 662 billion with an increase of PKR 106 billion. This could be regarded as both short term and long term effect of depreciation because the debt servicing is continuous phenomenon and would be applicable to current budget as well as all future budgets.

On one side the depreciation would put pressure on the existing and forthcoming budgets; on the other hand it will put pressure on budget through decrease in revenue. To get an advantage of low fuel prices, the Government has imposed petroleum development levy, which is important source of revenue and serves as a price stabilisation tool. If the exchange rate is depreciated, the imported fuel would become expensive and to stabilise the price, government would have to cut down the petroleum development levy. This will also have bad effect on the budget and would add to the budget deficit.

There are many ongoing development projects which need import of machinery and other imported inputs for their execution. If the currency is depreciated, the import goods needed for these projects shall become expensive, and the cost of development projects shall rise. This will put further pressure on the budget deficit.

5. IMPACT OF DEPRECIATION ON INCOME INEQUALITY

Suppose that the depreciation policy actually promotes exports. In that case, the immediate expected beneficiaries of depreciation are the persons involved in export business who belong to upper cohort of the society. The people who will suffer due to depreciation are all citizens of country who contribute to the government revenue through the tax payments. So the ethical question remains: is it morally justified to depreciate the currency given the scenario stated above? Who will be the primary beneficiary of this policy? The primary beneficiaries would be the exporters. On the other hand, the depreciation would have negative impacts on debt servicing, prices of imported goods and budget deficit. The burden of debt servicing and the increased debt would go to the entire society. This will add to the income inequality that already exists.

6. SUMMARY AND CONCLUSION

Changes in nominal value of local currency may have numerous consequences including trade impacts, debt impact, impact on budget and current account deficit and redistribution of resources. All of the impacts of depreciation are negative, except the trade impacts, where the impacts can be positive only if imports and exports are both elastic. Unfortunately, large proportion of Pakistani imports are highly inelastic, therefore no improvement seems plausible even in trade. Therefore, devaluation should not be used as a tool for improvement in trade.

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