PIDE KNOWLEDGE BRIEF

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Exchange Rate Policy Must Seek Undervaluation!

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In Pakistan, the exchange rate policy has always tended towards overvaluation (see Box 1). This policy has led to five major currency crises, an attack on foreign exchange reserves, and an eventual IMF programme, over the last 30 years (Haque and Hina, 2020).

The present knowledge brief reviews literature on the relationship between exchange rate policy stance and economic growth. Besides, an attempt is also made to estimate the misalignment of the exchange rate for Pakistan using an econometric model. The evidence provides overwhelming support for an exchange rate policy that seeks undervaluation to stimulate growth. In Pakistan, however, the State Bank of Pakistan (SBP) continues to adopt the policy of exchange rate overvaluation.

Box 1: Currency Misalignment

Misaligned currency means exchange rate that is inconsistent with satisfactory macroeconomic fundamentals of a country. If the currency is misaligned, then it may be overvalued or undervalued.

Overvaluation: If the currency of a country is overvalued, then it makes the imports attractive and exports hard to sell. Currency overvaluation leads to an unsustainable current account deficit.

Undervaluation: On the other hand, if the currency of a country is undervalued, it results in current account surplus. Undervaluation of currency can stimulate the economy to a higher economic growth level.

The Impact of Misalignment on Economic Growth around the World

As mentioned earlier, there is an extensive literature that tests the impact of exchange rate misalignment on economic growth. Three essential points can be inferred from the literature.

- There are different concepts of real exchange rate misalignment (see Box 2).
- Researchers use different sets of explanatory variables to calculate the equilibrium exchange rate.
- The calculation of the equilibrium exchange rate is sensitive to econometric models and econometric techniques.

Despite all the technical issues, there is almost a consensus that the real exchange rate undervaluation positively impacts economic growth. More specifically, Bhalla (2008) notes that each 1 percent sustained undervaluation may lead to 0.3 percent to 0.4 percent increase in economic growth. On the other hand, the overvaluation of the real exchange rate negatively impacts economic activities (see Table 1).

Box 2: Methodologies for Measuring the Misalignment of Exchange Rate

The difference between the prevailing exchange rate and the 'equilibrium' exchange rate is called the misalignment of the exchange rate. The measurement of the equilibrium exchange rate is not a straightforward task. The researchers provide various measures depending on the objective, focus, the conceptual framework, empirical methodology, and assumptions (Isard, 2007). Therefore, the literature suggests several empirical methodologies to measure the equilibrium exchange rate. These may be model-independent or model-dependent. In a nutshell, there is not an 'equilibrium' exchange rate. All measures provide different numbers for the equilibrium exchange rate depending on the period, methodology, and underlying assumptions about the macroeconomic variables.

Table 1

The Impact of Undervaluation and Overvaluation on the Economic Growth

Study	Sample Country	Sample Period	Impact of Misalignment
Impact of Undervaluation on Economic Growth			
Gala and Lucinda (2006)	58 countries	1960-1999	Positive
Bhalla (2008)	56 countries	1997-2007	Positive
Cheung et al. (2007)	111 countries	1975-2004	Positive
Dubas (2009)	102 countries	1973-2002	Positive
Coudert and Couharde (2009)	128 countries	1974-2004	Positive
Zakaria (2010)	Pakistan	1983-2005	Positive
Mejía-Reyes et al. (2010)	06 countries	1951-2000	Positive
Mbaye (2012)	72 countries	1970-2008	Positive
Bereau et al. (2012)	33 countries	1980-2007	Positive
Elbadawi et al. (2012)	83 countries	1980-2004	Positive
Ozyurt (2013)	66 countries	1983-2007	Positive
Naseem and Hamizah (2013)	Malaysia	1991-2009	Positive
Schroder (2013)	63 countries	1970-2007	Positive
Holtemoller and Mallick (2013)	69 countries	1970-2006	Positive
Couharde and Sallenave (2013)	26 countries	1980-2009	Positive
Oreiro and Araujo (2013)	Brazil	1994-2008	Positive
Grekou (2015)	CFA Zone*	1985-2011	Positive
Hajek (2016)	12 countries	1980-2014	Positive
Zou and Wang (2017)	cross-economy	1980–2011	Positive
Razzaque et al. (2017)	Bangladesh	1980-2012	Positive
Goncalves and Rodrigues (2017)	Emerging countries	1950-2014	Positive
Bhattia et al. (2018)	Pakistan	1980-2013	Positive
Iyke (2018)	100 countries	1994-2010	Positive
Chavez (2020)	11 Countries	1980-2018	Positive
An et al. (2020)	ASEAN countries	1989-2018	Positive
Baxa and Paulus (2020)	Developing countries	1996-2014	Positive
Ribeiro et al. (2020)	54 countries	1990-2010	Negative
Impact of Overvaluation on Economic Growth			
Razin and Collins (1997)	86 countries	1975-1992	Negative
Kemme and Roy (2006)	Russia and Poland	1995-2001	Negative
Abida (2011)	Tunisia, Algeria, and Morocco	1980-2008	Negative
Nouira and Sekkat (2012)	52 countries	1980-2005	Negative
Hall et al. (2013)	China, Japan, UK	2001-2009	Negative
Wong (2013)	Malaysia	1971-2008	Negative
Debowicz and Saeed (2014)	Pakistan	1982-2010	Negative
Rafindadi (2015)	Nigeria	1980-2011	Negative
Akram and Rath (2017)	India	1980-2014	Negative
Chen (2017)	49 countries	1996-2011	Negative
Morvillier (2020)	62 countries	1985-2015	Negative
Karahan (2020)	Turkey	2002-2019	Negative
Jehan and Irshad (2020)	Pakistan	1980-2016	Negative

Note: CFA-Franc: The CFA Franc is the common currency for the Franc Zone of 15 Central and West African countries, plus Comoros.

The Channels through which (Mis)Alignment Effect Economic Growth

- The literature cites the example of East Asian countries' outward-oriented policies when discussing the positive impact of the undervaluation of currency on economic growth. On the other hand, the overvalued currency hurt the Latin American and African countries' economic growth following inward-oriented policies.
- Rodrik (2008) notes that market failures and bad institutions affect the tradable sector in developing countries. Therefore, currency undervaluation might work to correct market distortions and positively impact economic growth.
- The currency undervaluation may boost the industrial sector through incentives for capital accumulation, technological capabilities, and information spillover. The improved industrial sector will add to the economic growth of the country.
- Theoretically, Gala (2007) suggests that the real exchange rate's undervaluation may increase profit margins. These profit margins will induce higher savings, investments, and ultimately increase economic growth.
- A stable and competitive (undervalued) real exchange rate may boost economic diversification in developing countries.

The Case of Pakistan

As mentioned earlier, the SBP continuously pursuing the policy of keeping the exchange rate parity overvalued by supporting the foreign exchange market through central bank interventions (see Box 3). Therefore, the prevailing nominal exchange rate in Pakistan does not reflect the equilibrium exchange rate. The difference between the prevailing and the equilibrium exchange rate is called the exchange rate misalignment. As mentioned earlier, there are several methods to calculate the misalignment of the exchange rate (see Box 2). However, we follow the IMF's suggestions[1] and use an econometric model by taking several variables into account, keeping the dynamics of Pakistan's economy in view. In this regard, we take Rao's (2019) guidelines to construct a macro model for Pakistan's case (Box 4). Since the SBP manages the exchange rate parity through interventions, we simulate the nominal exchange rate with and without foreign exchange interventions (see Figure 1).

Box 3. Central Bank Interventions

The central banks intervene in the foreign exchange market through buying and selling of the foreign/local currency to support the nominal exchange rate parity. The support could be to reach a specific desired level of exchange rate parity or to reduce the exchange rate volatility in the currency exchange market.

Selling of Foreign Currency: When the local currency is under pressure in the foreign exchange market due to weak macroeconomic fundamentals, the market signals to depreciate the exchange rate. In this scenario, the central bank sells foreign currency and buys local currency to manage the pressure. The exchange rate will be overvalued. Resultantly, the central banks lose foreign exchange reserves. The reserve deficient countries, such as Pakistan, cannot afford this policy for a long time. Whenever the central bank stops the support due to the lack of foreign exchange reserves, the local currency depreciates rapidly to adjusts to its market value. Sometimes, rapid depreciation may lead to currency crises.

Buying of Foreign Currency: On the other hand, the central bank buys the foreign currency when the market forces signal the appreciation of the local currency. The central bank builds the international reserves in this process.

Box 4 Currency Misalignment in the Case of Pakistan

Rao (2019) postulates that the State Bank of Pakistan (SBP) kept Pak Rupee overvalued, over several years, through central bank interventions in the foreign exchange market. Keeping the argument of Rao (2019) in view, we simulate a counterfactual exchange rate in the absence of the central bank intervention.

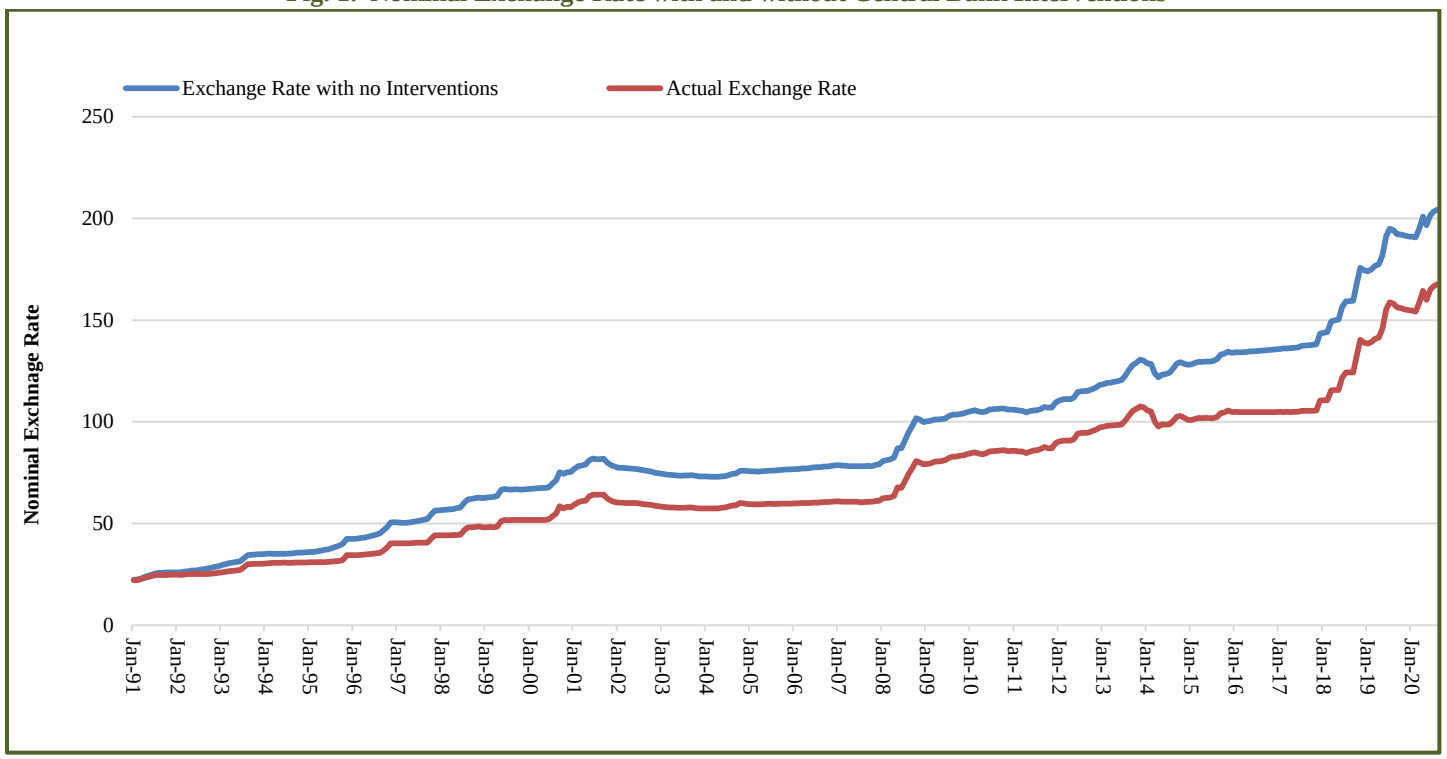
For this purpose, we propose a six variable structural vector autoregressive (SVAR) macroeconomic model keeping the dynamics of Pakistan's economy in view (see Rao, 2019 for details). These variables are output (denoted by *y*), interest rate (denoted by *i*), exchange rate (denoted by *e*), inflation (denoted by π), private sector credit (denoted by *psc*), and central bank interventions (denoted by *int*). The resultant SVAR model, after applying the theoretical restrictions, is as follows:

$y_t = \beta_{10} + \beta_{14} i_t + \beta_{16} e_t + \varepsilon_t^y$	Dynamic IS equation	(1)
$\pi_t = \beta_{20} + \beta_{21} y_t + \beta_{24} i_t + \beta_{26} e_t + \beta_{27} E_t[\pi_{t+1}] + \varepsilon_t^\pi$	Dynamic Philips Curve	(2)
$psc_t = \beta_{30} + \beta_{31} y_t + \beta_{34} i_t + \varepsilon_t^{psc}$	Credit Dynamics	(3)
$i_t = \beta_{40} + \beta_{41} y_t + \beta_{42} \pi_t + \beta_{46} e_t + \varepsilon_t^i$	Monetary Policy Function	(4)
$INT_t = \beta_{50} + \beta_{54} i_t + \beta_{56} e_t + \varepsilon_t^{INT}$	Intervention Equation	(5)
$e_t = \beta_{60} + \beta_{62} \pi_t + \beta_{64} i_t + \beta_{65} INT_t + \varepsilon_t^e$	Exchange Rate Equation	(6)

[1] Almost all the IMF methodologies are based on econometric estimations.

Figure 1 provides a historical evaluation of SBP's intervention effectiveness in controlling the exchange rate parity.

Fig. 1. Nominal Exchange Rate with and without Central Bank Interventions



Our analysis comes up with three main messages, namely:

- First, if the SBP does not intervene to support the foreign exchange market, the exchange rate would have been around 205 per USD at the end of August of 2020. The support of SBP kept the exchange rate overvalued for a long time.
- Second, following Rao's (2019) methodology, our estimates show that the SBP has provided cumulative direct market support of USD 119 billion from January 1991 to August 2020. However, the support of USD 119 billion has yielded management of the exchange rate by only Rs. 36.
- Third, the overvalued exchange rate largely subsidised imported consumption and distorted the competitiveness of exportable items. This led to a higher trade deficit, balance of payment (BOP) crises, and ultimately the IMF bailout packages. This also suggests that if the SBP adopts a less protective exchange rate regime, we may avoid severe economic outcomes such as the depletion of foreign exchange reserves, BOP crises, and currency crises (Haque and Hina, 2020).

Conclusion

This note provides overwhelming evidence that currency undervaluation is beneficial for economic growth. A macro-econometric model shows that the SBP continually used our scarce foreign exchange reserves to keep the exchange rate arbitrarily overvalued throughout history. This is one important factor that has contributed to our repeated BOP crises and IMF programmes. We hope that this note will inform the exchange rate policy to keep an undervalued target exchange rate and not use reserves to fight overvaluation (see also Jalil, 2020).

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