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Research Paper

An Anatomy of Pakistan's Exchange Rate Regime

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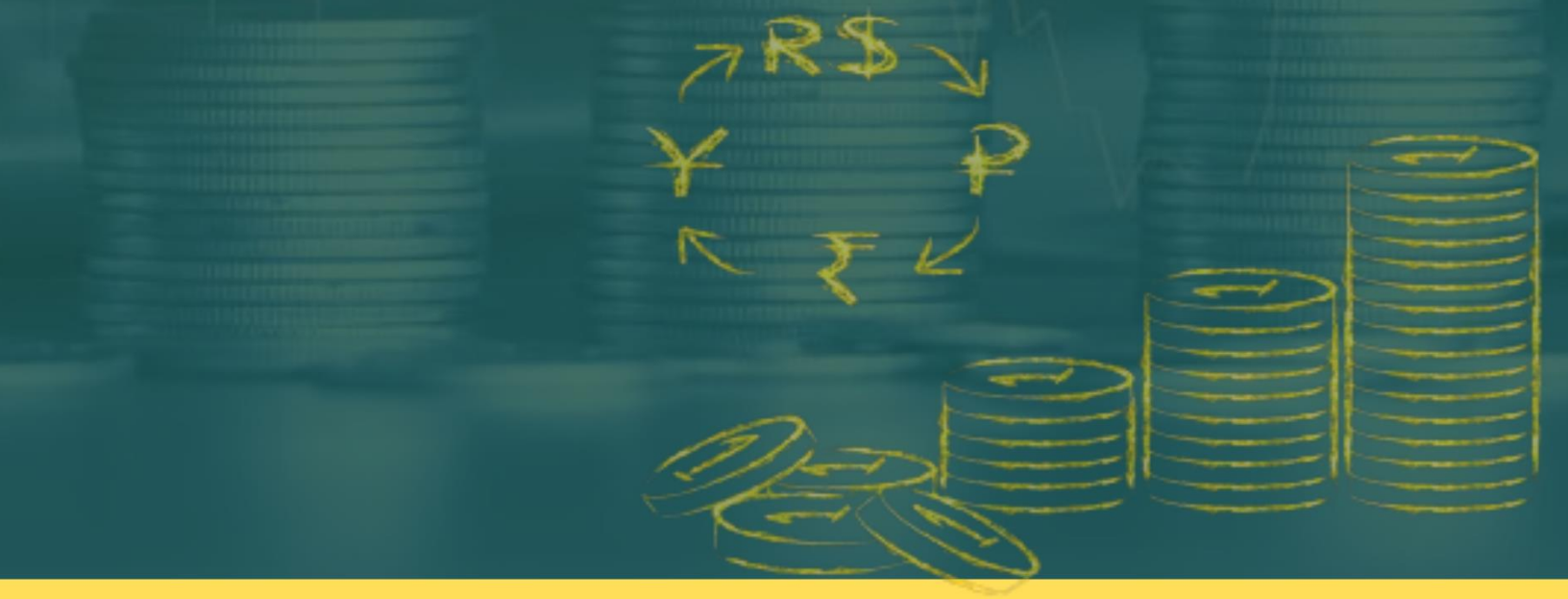

OGDCL-IPRI Chair Economic Security

Executive Summary

Proponents of a free-floating or market-driven ER regime have argued that distortionary CB interventions in the foreign exchange (FX) market alter the ER trajectory. Historically, evidence shows such interventions result in ER misalignment, eventually leading to the widening of the trade deficits and balance of payment challenges.

Over the past year, the PKR stability has raised questions regarding the ER misalignment. The surplus in the Current Account, with an increase in exports and remittances, apparently supports the notion that market dynamics drive stability. However, concerns remain that administrative measures to curtail imports, coupled with distortionary CB interventions, are affecting the ER regime.

This paper conducts an empirical analysis to assess whether the ER is market-driven. It also shares proposals to make ER management more transparent and sustainable.

Objectives and Methodology

Using a comprehensive VAR model, multiple ER-based indices, and global and regional macroeconomic indicators, this Paper:

- Explores the sustainability of PKR stability and the extent to which the ER is market-driven.
- Provides recommendations for establishing an optimal ER regime for Pakistan.

Key Findings

The findings of this Paper highlight that Pakistan's ER is not entirely market-driven. Despite significant changes in the ER leading indicators, such as a 30% change in the inflation rate, a 1000 bps (10%) decline in the policy rate, and significant fluctuations in the current account, terms of trade, and FX reserves, the ER has remained constant around PKR 279.

Policy Recommendations

There is evidence to show that the balance of payment crisis faced frequently over the last two decades has been driven by an expansionary fiscal policy, leading to multiple bailouts from the IMF. To move towards an independent monetary and a market-based ER regime, the government may adopt measures to rein in the large fiscal deficits,

including the losses of the SOEs. However, overly contractionary fiscal measures can also dampen economic growth. Therefore, a balanced fiscal strategy is necessary that emphasises reducing unproductive spending while protecting growth-promoting investments.

A volatile rupee, however, disrupts the economy through multiple channels and may need to be contained. However, FX intervention may not be used as a pretext for securing unfair socio-economic or political advantages, such as incentivising particular export industries, limiting imports to protect an inefficient domestic industry, or favouring particular interest groups.

The SBP may:

- Manage the ER within a specific band or range, focusing on reducing immediate risks rather than acting as a market participant influencing broader economic cycles.
- Publish a clear FX intervention policy framework that details when and how it will intervene to maintain stability.

1. Introduction

Ever since the Bretton Woods system[1] collapsed in 1971, the global economy has witnessed a notable shift from fixed exchange rate (ER) regimes to floating ones. This transition has introduced volatility in ERs, policy rates, and inflation dynamics of economies around the globe. Moreover, it has triggered a new debate within contemporary economic paradigms over the determinants of ER [such as market forces and central bank (CB) interventions] and their impacts on foreign exchange (FX) markets, as well as on inflation rates, current accounts, and overall economic stability (Eichengreen, 2010).

In 1999, the State Bank of Pakistan (SBP) likewise moved to a floating ER regime (see Figure 1). This marked the start of a new era in Pakistan's monetary policy paradigms. However, this shift brought similar challenges that continue to weaken the stability of the rupee and the key economic fundamentals of the country.

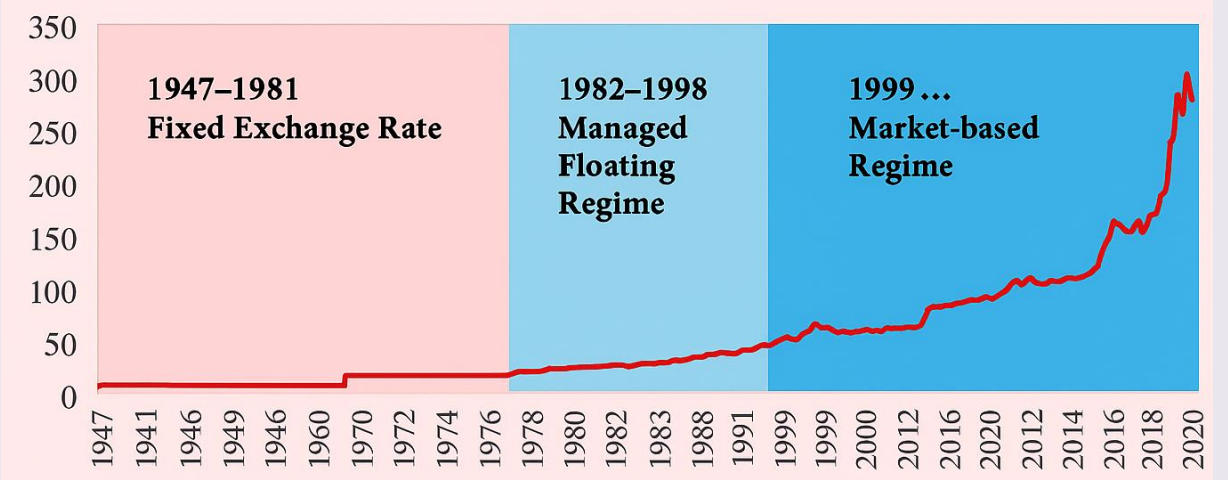

Figure 1: De Facto Exchange Rate Regimes in Pakistan (1947-2020)

Source: Hina (2024a)

Since 1999, periods of stability in the rupee's value have often sparked debates about the factors influencing the ER (Hina, 2024a). After every stability, the proponents of the free-floating ER regime state that distortionary CB interventions in the FX market significantly

[1] Terms are explained in the glossary section at the end of this Paper.

influence the ER. Moreover, concerns about ER misalignment are frequently raised, especially when the observed stability appears to extend beyond the natural forces of supply and demand for the rupee.

Recently, with the PKR stabilising around 279 PKR/USD (see Table 1), questions regarding the sustainability of this stability have resurfaced [Jalil (2021) and Hina (2024a)]. Despite the steady rupee value from December 2023 to April 2025, there is inadequate empirical evidence regarding why Pakistan's ER has been stable for more than a year when its economic fundamentals and the ERs of the regional peers are fluctuating. Additionally, the literature on ER dynamics in Pakistan presents mixed evidence on the extent to which CB interventions influence the FX and the currency market. Some economists argue that such interventions are essential to stabilise economies by reducing uncertainty, especially in a small, import-dependent economy like Pakistan. Meanwhile, others highlight the risk of an ER shoot-up and in the long run (Jalil, 2021). Therefore, examining Pakistan's ER dynamics and its determinants becomes critical.

PKR Exchange Rate (Jan-2024-Dec 2024)		
Period	**Value**	**Value**
Jan-24	280	-
Feb-24	279	-
Mar-24	279	-
Apr-24	278	278
May-24	279	279
Jun-24	278	278
Jul-24	278	278
Aug-24	279	279
Sep-24	279	279
Oct-24	278	278
Nov-24	278	278
Dec-24	279	279
Average	279	279
STDEV	0.54	0.31
Max	280	279
Min	278	278
Author's based on SBP (2025		

Research Questions and Objectives

Using multiple ER-based indices along with global and regional macroeconomic indicators, this paper aims to explore the sustainability of PKR stability and whether the ER is truly market-driven. It examines whether ER movements impact Pakistan's economic fundamentals and, if so, whether Pakistan's ER moves in correlation with changes in its economic fundamentals. It also provides comprehensive policy recommendations regarding Pakistan's ER.

The Paper concludes that Pakistan's ER is not entirely market-driven. Historically, interventions by the SBP in the ER have led to a depletion of FX reserves and trade

inefficiencies (Rao, 2019). However, without such interventions, the ER exhibits volatility. For Pakistan, the optimal approach is to adopt a managed (or dirty-float) ER regime. Interventions in the FX market require considerable resources, especially if (or in case) FX reserves are borrowed. Additionally, a highly volatile rupee negatively affects the economy in numerous ways by generating uncertainty. Therefore, the SBP may consider allowing a managed or dirty float regime. This is due to the fact that Pakistan's economy faces the challenge of a significant trade deficit with a limited exportable surplus (which is fundamentally narrow); flexible ERs serve little purpose and tend to harm rather than support the country's export competitiveness.

The remainder of this Paper is organised as follows: Section 1 concludes after discussing regional ER dynamics. Section 2 summarises the theoretical and empirical literature on ER. Section 3 discusses the methodology use in the Paper. Section 4 provides the results, a detailed discussion, and findings of the paper. Finally, Section 5 concludes the ER debate and provides multiple compact recommendations.

Regional Exchange Rate Dynamics

Over the years, in Pakistan, the ER regime has significantly evolved. From a fixed ER system (1947-1981) to a managed floating ER regime (1982-1998). In 1999, Pakistan finally adopted a flexible/market-based floating ER (see Figure 1).

The 1970s transition in the ER regime caused a decline in the output of the manufacturing sector due to the rise in the prices of inputs. The textile sector, in particular, saw a decline. Its share in the manufacturing sector declined from 80.50% in 1971 to 60.12% in 1972. In 1982, when Pakistan transitioned to a Managed Float System, the PKR depreciated by 20% (Ali & Tahir, 2000). In 1991, the persistent depreciation of PKR triggered inflation as high as 12.6% and resulted in a negative trade balance (5.46% as a percentage of GDP). The 1990s were marked by high ER volatility. During this period, the current account deficit widened to 5.9% of GDP, compared to 2.7% of GDP in the 1980s. Additionally, FX reserves hardly cover six weeks of imports. (This happened subsequently in 2021 onwards, too, when the ER left to market).

In 1999, Pakistan officially adopted a floating ER regime. However, since the adoption of the market-determined ER, Pakistan's FX market has been grappling with significant

uncertainties. Its currency, which was floating around PKR100/USD in 2015, saw a 200% depreciation. Now, it is trading at a narrow range around PKR 280/USD in 2025.

Similar transitions were observed in the neighbouring countries of Pakistan. In the 1970s, Bangladesh adopted the fixed ER regime. However, following the loss of FX reserves, the country transitioned to the Managed Float Regime in the 1980s. This transition largely impacted the trade balance of the country with a significant increase in the exports of the Ready-Made Garment (RMG) sector of Bangladesh.

The structural reforms in the industrial sector, along with the shift in the ER regime of Bangladesh, set the foundation for the consistently export-led growth of the country. Finally, in 2003, Bangladesh adopted a floating ER regime. With periodic depreciation resulting in inflation, this shift in the regime supported the exports of the country (Dalton, 2007).

In India, from 1947 to 1971, the Indian Rupee (INR) value was fixed (Kaur, 2018). However, after the breakdown of the Bretton-wood system, India (following the global trend) transitioned to a pegged ER regime. The INR was pegged against currencies including the Japanese Yen, US dollar and pound sterling. This shift in the ER regime kept the INR overvalued, resulting in the loss of FX reserves. In March 1993, India officially adopted the flexible ER regime with occasional interventions by the Central Bank of India. This transition resulted in the depreciation of the INR, boosting export competitiveness (unlike Pakistan) but also increasing prices and external debt.

Both countries, despite their different timelines, faced similar challenges with ER transitions, impacting their manufacturing sectors, overall prices, and overall economic stability.

2. A Brief Overview of Literature

The existing literature on Pakistan's ER offers mixed evidence regarding the country's ER dynamics. Some studies suggest undervaluation, while others point to overvaluation. An overview of the state of the literature on ER is provided hereunder:

In the past, monetary constancy (keeping the money supply constant) was the only reason for ER volatility. However, this hypothesis lost ground as the majority of industrial economies have stabilised inflation at annual rates lower than 3%, even when the ER was fluctuating. The incapability of the monetary constancy hypothesis to imitate and anticipate ER fluctuations implies that monetary volatility is only one of the factors driving ER volatility (Meese & Rogoff, 1983).

Recent literature depicts that non-monetary factors have gained importance in explaining ER volatility. Productivity shocks, terms of trade shocks, government spending, trade openness, and net foreign assets are very important factors in explaining real exchange rate (RER) volatility (Calderón 2004; Alam & Ahmed 2010). The high RER volatility that portrays developing economies produces an uncertain environment for investment as a firm's markup (the market power of the firm), exports & imports, perception about future demand of goods, and cost of new capital goods become difficult to forecast. That is why central banks keeps the exchange rate stable (Serven, 2002). ER devaluation results in enormous capital flight from a country. It, moreover, in return, influences the balance of payments of a country, the balance of trade, the international competitiveness of domestic products, businesses that export/import, as well as the investors making international investments (Mustafa & Nishat, 2004).

Rao (2019) constructed the Exchange Market index for Pakistan to evaluate the effectiveness of the monetary policy in controlling the FX market historically. The study shows that in the past, SBP has been keeping the ER overvalued and was able to manage the exchange rate by only PKR 35.92 (Rao, 2019). Following the argument of Rao (2019), Jalil (2020) also stated that Pakistan's ER is overvalued. Moreover, the study stated that Pakistan incurred foreign exchange losses worth USD 119 billion from January 1991 to August 2020.

Hussain & Ejaz (2022) used Vector Autoregressive (VAR) to examine the impact of the ER channel of the monetary policy. The results of the study stated that the ER channel is

most effective in the market-based flexible ER method. If SBP truly adopts the Flexible ER mechanism, the effectiveness of the ER channel of the transmission mechanism of monetary policy will be improved (Hussain & Ejaz, 2022).

Asma (2015) aims to assess the claims of PKR overvaluation as well as PKR parity against the US Dollar. The study argues that the model-based approaches to exchange rate misalignment are unable to provide robust insights. Hence, neglected any signs of intervention in ER by the SBP.

Despite the steady rupee value from January 2024 to December 2024, there is insufficient empirical evidence to support the market-driven nature of this ER stability and why Pakistan's ER has been stable for a year. There is also lack of consensus on the most suitable ER policy for the country. Therefore, examining Pakistan's ER dynamics and its determinants becomes critical.

3. Methodology for Exploring Exchange Rate Misalignment

Multiple methodological approaches have been developed to examine exchange rate (ER) misalignment. Conventional measures such as the nominal exchange rate (NER), real exchange rate (RER), real effective exchange rate (REER), and purchasing power parity (PPP) models frequently employed to explore deviations from the equilibrium ER. These frameworks nonetheless offer valuable insights. However, for a comprehensive assessment of Pakistan's ER dynamics, it is necessary to conduct a detailed inquiry into the macroeconomic indicators that either significantly influence or are influenced by ER movements. Given that the ER of a country simultaneously reflects prevailing macroeconomic fundamentals and serves as a transmission mechanism for economic shocks. Identifying these interdependencies is critical for explaining ER behaviour and discerning potential misalignments from economic fundamentals.

This Paper employs a Vector Autoregression (VAR) model to systematically investigate these interdependencies, enabling the identification of key macroeconomic variables that jointly determine or respond to ER fluctuations in Pakistan.

This methodological framework uses a two-step approach:

1. Identification stage: A VAR model to determine which macroeconomic indicators are relevant to ER behaviour.
2. Using appropriate ER metrics (REER, NEER, FX Reserves, PPP, etc.) based only on the relevant variables identified in the first stage.

However, the VAR framework is not without limitations. It may inadequately capture structural breaks or regime shifts in ER behaviour, particularly in economies like Pakistan where policy interventions and external shocks are recurrent. Moreover, the identification of relevant macroeconomic variables can be constrained by data availability and risks of omitted variable bias, given the multifaceted nature of ER dynamics.

To address these concerns, this Paper, in Step 2, incorporates additional theoretically grounded variables and robustness checks to account for potential structural changes and omitted influences.

As satted, in the ER analysis, some of the observed associations between ER and economic variables may be influenced by reverse causation. ER can both influence and

be influenced by fluctuations in the historical/lagged values of ER and other financial variables. However, multiple empirical studies employed CLRMs (such as weighted OLS and instrumental variables). Nonetheless, the validity of such regression model is often debated (see Mankiw, 1995). The use of VAR and additional limitations of traditional models are discussed in Hall (2021).

This Paper ensures that the assessment of ER misalignment is both robust and grounded in the specific economic context of Pakistan. This approach increases the accuracy of conclusions regarding whether the ER is flexible or managed. Further details regarding the methodology are provided hereunder:

Vector Autoregressive (VAR) Model

The VAR model is an extension of the univariate time series models. It simultaneously captures the dynamic interaction among more than one variable using a multi-equation VAR system where all the variables are treated as endogenous. There is one equation for each variable. The right-hand side of each equation includes lagged values/past values of all dependent variables in the system (Asteriou ,2021). Usually, VAR includes variables that have various dynamic interactions or a perceived causal relationship.

$$\boldsymbol{Y_t = A_1 Y_{t-1} + A_2 Y_{t-2} + \ldots + A_p Y_{t-p} + \varepsilon_t} \qquad \textbf{(1)}$$

Y_t is a vector of endogenous variables.

A_1 means the coefficient matrices for lag i

ε is a vector of error terms (white noise)

t means the time period (ranges from M1:2015-M12:2023).

Each equation (for any variable) can be estimated separately and simultaneously with the usual OLS (Ordinary Least Square) method. For the VAR model, the selected indicators are Imports, Consumer Price Index (CPI), Real Effective Exchange Rate (REER), Foreign Exchange Reserves (FXRES), and Exchange Rate (ERD). The indicators are selected based on Montiel & Reinhart (2001), Berg et al. (2006), and IMF external sector assessments. These variables (among others initially considered) showed statistically significant relationships with the ER. The final selection was based on an iterative process,

guided by theoretical relevance. Nevertheless, reliability, statistical significance, and response patterns are observed through Impulse Response Functions (IRFs) based on the VAR model.

An Impulse Response Function (IRF) is used to show how one variable reacts over time to a shock (unexpected change) in another variable in a VAR Model. It, for instance, tells about "What happens to CPI if there's a sudden change in the ER?"

A Cholesky decomposition is used to explore such an effect. IRFs are derived using Cholesky decomposition. In simple Cholesky decomposition is a way to "break down" the combined movements of multiple variables into separate, individual shocks, one at a time. This decomposition stems from a recursive assumption where zero restrictions are imposed on the simultaneous correlation among residuals.

However, in such VAR models, certain variables cannot affect others. For instance, a change in local prices in Pakistan cannot impact international oil prices. Using the SVAR model, such restrictions were imposed on such relationships.

However, the restrictions imposed in SVAR are debated in the context of theory vis-à-vis market conditions of a country. Multiple results, along with diagnostic tests including stationarity, optimal lag length selection, and residual analysis, are presented in the Appendix. Given this consistency and to maintain simplicity, the SVAR was used in the primary analysis.

Moreover, the objective of posing restrictions can also be achieved using the SVAR and its ordering. This also makes the ordering of the variables crucial in a SVAR system[2]. The intuition behind the restriction is that a shock on the last ordered variable (for instance, ER) does not contemporaneously affect the previous variables (take world oil prices as an example).

After imposing the Cholesky decomposition, two sets of statistics are used to assess the pass-through from ER fluctuations to domestic indicators. The IRF, however, demonstrates this effect over time/months.

Based on the monetarist school of thought, this Paper argues that the position of CPI is prior to the ER. Given the long and variable lags of monetary policy, ER

[2] Ordering tells about which variable impact what variable–that is, a shock or change on the last putted variable does not necessarily/contemporaneously affect the other or previous variables.

usually reacts to CPI rather than the other way round[3].

Furthermore, to estimate the VAR model, it is important to select the optimal lag length of the VAR model. The lag length should be long enough to allow VAR estimation with unbiased and reliable results (meaning that there is no autocorrelation in the errors or they are white noise).

In a VAR model, the Schwarz Bayesian Criterion (SBC) is used to select the lower or minimum lag, while the Akaike Information Criterion (AIC) is used to select the upper or maximum lag length. For instance, a lower AIC value at lag 2 indicates that, with the addition of one more lag, the model's fitness remains unchanged and vice versa. This determines the model's reliability. If SBC favours the selection of lag 1, it means that employing just one lag does not outweigh the improvements in the model's fitness. The autocorrelation LM test, which ideally has a p-value greater than 0.05 (with 95% confidence), is used to assess the overall goodness of the model.

Data

The data for this research was obtained from the International Monetary Fund (IMF), World Development Indicators (World Bank), Pakistan Bureau of Statistics (PBS), and the State Bank of Pakistan (SBP). Amongst others, the primary variables under consideration include the Real Effective Exchange Rate (REER), Nominal Exchange Rate (NER), FX reserves, terms of trade (TOT), and inflation (CPI).

Nevertheless, all data sets were cross-referenced with SBP statistical bulletins and PBS trade and inflation data to ensure reliability. The dataset covers the period from 2015 to 2024. Nevertheless, it is available from 1997 to 2025. However, the most reliable/siginificant results were emerged from 2015 to 2023 observations. The literature suggests that data for Pakistan post-2023 fluctuations due to administrative measures which have influenced trade flows and, in turn, affected key macroeconomic indicators such as the ER.

Data prior to 2015 includes some estimated figures, which is why the model yielded insignificant results. The selection of variables in this study is based on both theoretical considerations and empirical relevance to ER dynamics in Pakistan. The following variables are included in this Paper:

[3] This Paper does not find any significant changes due to other different orderings of the variables

Nominal Exchange Rate (NER)

The NER is the foundation upon which analyses of the ER are built. This ER represents the price of one currency in terms of another currency. The methodology of this Paper begins by examining the NER[4] using monthly exchange rate data from April 2021 to December 2024. This approach aims to explore whether there are any deviations in the ER from its historical trend. The ER literature suggests that such deviations show potential misalignment in the ER. Measures the divergence of the observed exchange rate from its equilibrium or expected value, based on purchasing power parity or trend estimates. It serves as a proxy for exchange rate misalignment.

Imports (IM)

Imports show the value of goods and services coming to Pakistan. Imports are sensitive to fluctuations; a depreciation in the PKR typically makes imports more expensive, potentially reducing/fluctuating import volumes.

Consumer Price Index (CPI)

CPI serves as a measure of inflation. Changes in the ER can be transmitted into domestic prices through import costs and inflation expectations, while inflation itself can influence the real value of the ER.

Terms of Trade (TOT)

TOT is a measure of the relative prices of a country's exports compared to its imports. In macroeconomic terms, an improving TOT improves the trade balance and current account, which reduces the demand for dollars and the need to draw down reserves or borrow externally.

Foreign Exchange Reserves (FXRES)

Reflect the CB's stock of FX currencies/assets. Reserves are often used to manage ER volatility and signal economic stability. ER movements can affect these reserves' value and adequacy.

[4] NER is not a methodology on its own. It, however, serves as a baseline for the ER analysis.

These variables were chosen due to their macroeconomic significance as well as their dynamic interdependence with the ER. Their inclusion enables the study to capture both direct and indirect channels through which changes in ER impact the economy, and vice versa. The impulse response (or IRF) analysis derived from the VAR model provides detailed explanations of how shocks to one variable pass/propagate/transmit through the system over time.

Real Exchange Rate (RER)

The VAR literature suggests that inflation impacts ER. However, the nominal ER does not account for price level changes be

tween the domestic country and its trading partners. To take the price factor into consideration, RER is used. The RER is calculated as the nominal ER adjusted for price differentials between trading partners. This metric is essential for understanding currency competitiveness in the global market. It is particularly useful for analysing factors that influence exchange rate movements.

The RER between two currencies is calculated as the product of the nominal ER and the ratio of prices between the two countries. Mathematically, RER is expressed hereunder:

$$RER = e\,\frac{P_*}{P} \quad \textbf{(2)}$$

Where:

- e is the nominal PKR-dollar ER.
- P* is the average price of a good in Pakistan.
- P is the average price of the good in its trading partner country.

Equation 2 shows how changes in price levels/ER can affect the RER.

Real Effective Exchange Rate (REER)

The RER accounts for inflation. However, it ignores the trade factor in analysing ER. Price factors, for instance, between two countries, can be significant determinants of the ER. However, it does not provide insights about the ER when two countries have no or meagre bilateral trade. Since Pakistan Economy has a considerable level of openness to

international trade. The domestic price level cannot remain immune to any external price shock–that is, a drastic change in the ER that results in the appreciation or depreciation of the rupee (Salman & Shah, 2025).

The prices of each trading partner's basket (in the REER) are weighted by its share in total foreign trade, exports, and imports. This metric replicates the competitiveness of a country's currency in the international market. (further details regarding REER are provided in the ER Policy section).

Based on multiple theories, a multitude of models have been applied in Pakistan to explore whether Pakistan's ER is misaligned or not. However, according to SBP (2015), the equilibrium ER of a country is period/time dependent. It is influenced by microeconomic and macroeconomic fundamentals. To explore the question of misalignment, there should be practical evidence of whether or not there is an FX injection by the SBP. Hence, interviews with monetary experts as well as global & regional macroeconomic indicators are also taken into consideration while exploring the ER dynamics of Pakistan.

Purchasing Power Parity (PPP)

RER and REER are based on PPP. The PPP is a benchmark to identify deviations in the ER. According to the PPP theory, ER should adjust to equalise the price levels of goods in different countries. Deviations from the PPP rate suggest misalignment. The PPP approach provides a theoretical benchmark for determining exchange rate equilibrium. It helps identify deviations from expected levels by comparing the price levels of similar goods across countries. Using PPP is crucial because significant deviations can indicate misalignments, revealing whether these are due to market forces or external interventions.

Additionally, it states that the ER between two countries should be equal to either the two countries' price level ratios, the ER product in the base period, or the ratios of price indices of the countries. The PPP theory works on the principle of "the law of one price", implying that the prices of all the traded goods of the two countries should be the same in both countries. The basic intuition behind proceeds along the following lines:

"If a factor increases the demand for domestic goods relative to foreign goods, the domestic currency will appreciate, and if a factor decreases the relative demand for domestic goods, the domestic currency will depreciate."

The methodology of this Paper, in essence, is based on the VAR model, the RER, REER, TOT, FXRES, and NER. It offers a vigorous framework for examining ER misalignment. First, the VAR model is employed to identify which macroeconomic indicators are relevant to ER behaviour. The behaviour of the ER indicators is then assessed. If these macroeconomic indicators (such as NER) remain stable while the RER and REER fluctuate significantly, it suggests that non-market forces, such as FX interventions or capital controls, are distorting the ER, contrary to the ER and monetary theories. Conversely, if all three indicators move in correlation, it demonstrates that the ER is, based on the market forces.

4. Results, Discussions, and Findings

This section provides categorically empirical insights into Pakistan's ER dynamics, based on the above methodology. The results of this study are provided hereunder.

Table 2 shows the VAR model ER results to identify which macroeconomic indicators are relevant to ER behaviour. A bidirectional relationship exists among Imports (IM), the Consumer Price Index (CPI), foreign exchange reserves (FXRES), the Real Effective Exchange Rate (REER), and the ER. A variable with a lower coefficient (close to zero) shows no response after a unit shock in the ER. The standard errors (S.E.) in parentheses indicate the significance of these macroeconomic factors. The rule of thumb is that the coefficient value should be greater 2S.E. in absolute terms.

Table 2: Response of ER Shocks

Period	IMPORTS	CPI	REER	FXRES
1	0.63 (0.10)	-1.15 (0.08)	1.30 (0.07)	-1.05 (0.05)
2	-0.01 (0.24)	-1.00 (0.10)	0.84 (0.18)	-1.03 (0.09)
3	0.13 (0.23)	-1.00 (0.06)	0.41 (0.23)	-0.96 (0.12)
4	-0.22 (0.32)	-0.58 (0.18)	0.03 (0.23)	-0.75 (0.16)
5	-0.57 (0.19)	0.98 (0.16)	-0.32 (0.21)	0.28 (0.26)
Source: Author's				

Table 3: VAR Diagnostics

Criteria	Lag 1	Lag 2
Akaike Information Criterion (AIC)	-8.23	-9.41
Schwarz Bayesian Criterion (SBC)	-7.88	-8.95
LM Autocorrelation Test	0.61	0.49
Selected Lag Length	2	
Source: Author's		

In Table 3, a lower AIC value at lag 2 indicates that, with the addition of more parameters, the model's fitness remains unchanged. The SBC criteria favours the selection of lag 1; employing just one lag does not outweigh the improvements in the model's fitness. The

autocorrelation LM test, with a p-value greater than 0.05 (with 95% confidence) shows the overall goodness of the model.

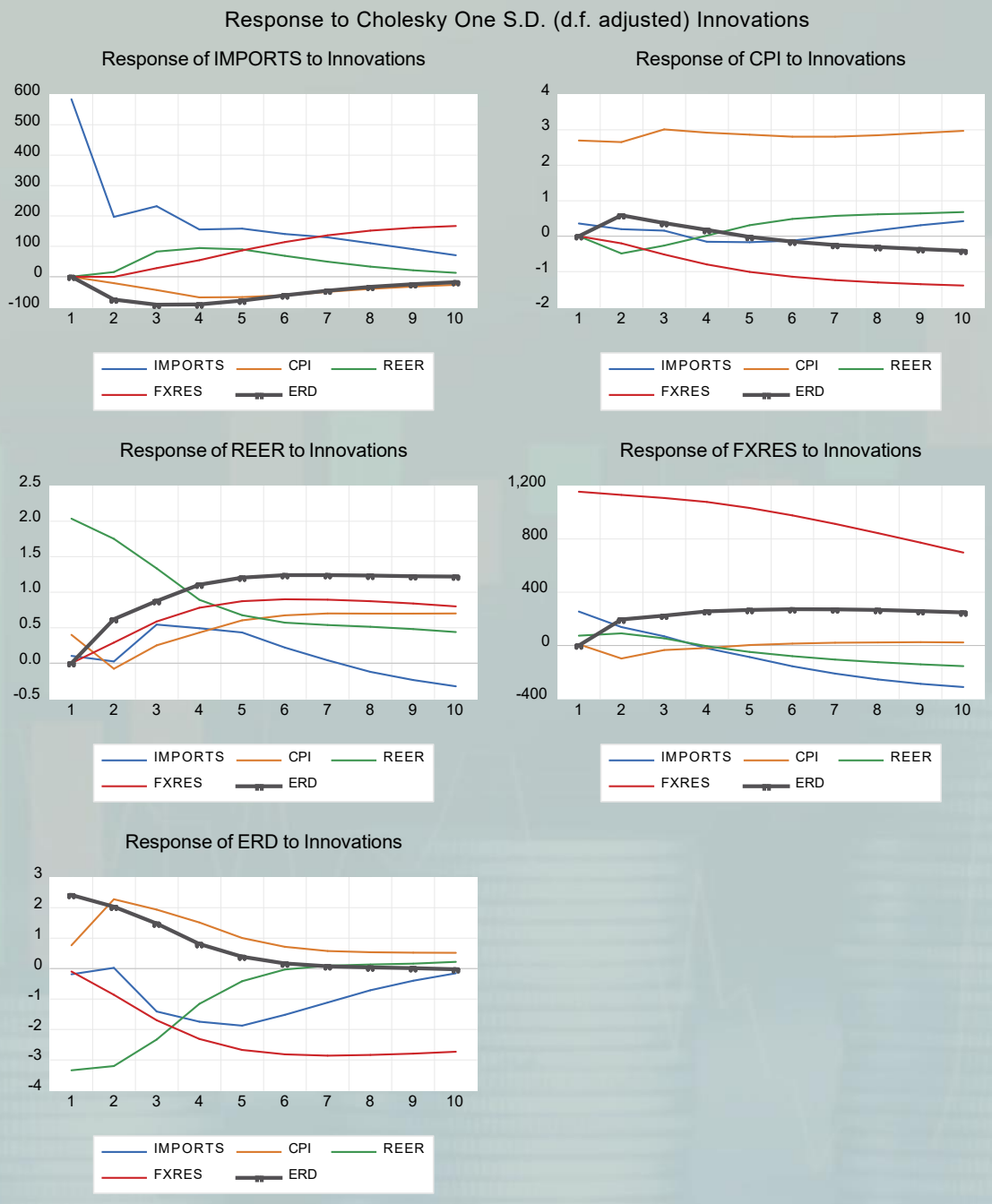

Figure 2: *Impulse (response) of ER to One SD Shock ±2S.E.*
Source: *Author's based on the SBP, PBS, and IMF data*

The above figure **(Figure 2)** provides the visual representation of VAR model results to identify which macroeconomic indicators are relevant to ER behaviour. Figure 2 shows that a bidirectional relationship exists among Imports (IM), the Consumer Price Index (CPI), foreign exchange reserves (FXRES), the Real Exchange Rate (RER), and the ER. After running multiple VAR models, the significant pass-through/response was found in CPI, FX reserves, REER, and imports (see "Response of ERD to innovations" in Figure 2).

Nominal Exchange Rate & Real Exchange Rate

Figure 3 shows that the ER in Pakistan was PKR 154.87/USD in April 2021. It moved to PKR 278/USD in January 2024 and remained constant at PKR 278/USD in December 2024. In contrast, the RER in Figure 4 shows a somewhat different picture. In January 2024, it was at PKR30; in December 2024, it was 157.34.

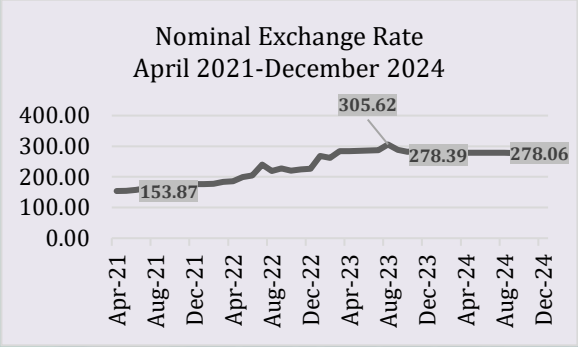

Figure 3: *Pakistan's Nominal Exchange Rate (End of Period Rate)*

***Source*: *IFS (2025)*[5]**

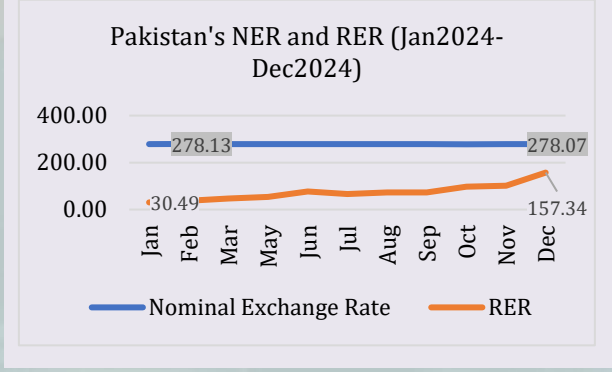

Figure 4: *Pakistan's NER & RER (Jan 24- Dec 24)*

***Source:** Author's, based on IFS (2025)*

Real Effective Exchange Rate

Figure 5 shows that in January 2024, a 0.7-point change in the REER was observed. In December 2024, it was 3. However, in May 2024, it touched a negative 4.

[5] Available at: https://data.imf.org/?sk=4c514d48-b6ba-49ed-8ab9-52b0c1a0179b&sid=1390030341854

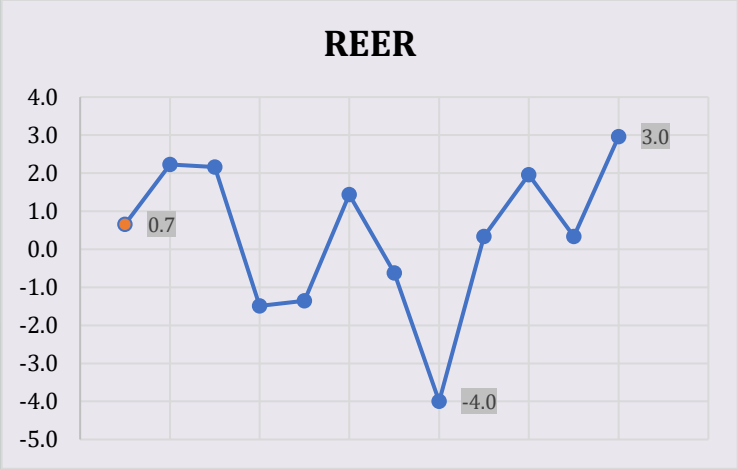

Figure 5: *Pakistan's REER--Jan 2024-December 2024--(SBP, 2024)*

Discussion and Findings

This segment provides discussions regarding Pakistan's ER based on the provided results. The VAR model (see Figure 2) suggests that CPI, REER, FX Reserves, and past ER (ERD) values impact ER in Pakistan. Therefore, indices based on these variables can provide information regarding Pakistan's ER regime. Insights from the VAR model-based indices are provided hereunder:

NER

Figure 2 above shows a significant change in the ER trajectory of Pakistan. However, it has remained constant since the beginning of 2024. The NER trajectory depicted in Figures 2 and 3 indicates a significant depreciation and appreciation of the PKR against the US dollar, from PKR 154.87/USD in April 2021 to PKR 278/USD by January 2024. The sharp depreciation suggests substantial economic pressures, including widening trade deficits, declining FX reserves, and heightened external debt obligations. The subsequent stabilisation at PKR 278/USD through December 2024, when the rest of the economic fundamentals were unstable, often stems from active market participation, such as selling/buying FX reserves.

RER

The RER trend in Figure 4 shows fluctuations in the RER despite a constant NER after January 2024. This divergence indicates the influence of price differentials and other macroeconomic variables that affect a country's competitiveness in the global market. For instance, an increase in domestic prices relative to trading partners, without a corresponding adjustment in NER, leads to RER appreciation, reducing export competitiveness. The significant rise in RER from PKR 30 in January 2024 to PKR 157.34 in December 2024 underscores potential inflationary pressures or shifts in policy rates that disproportionately impact the real exchange environment.

REER

Fluctuations in RER with a constant NER signal that non-market forces are influencing the ER to achieve a specific policy goal (such as a stable ER). However, ER is influenced more by the international trade of a country (as depicted in Figure 3) rather than by immediate price changes. The REER in Figure 5 highlights persistent volatility (from a notable dip to -4 in May 2024 to its peak of 3 in December 2024). Such instabilities also signal ER misalignment. Negative REER values during mid-2024, moreover, highlight a temporary loss of competitive parity in international trade markets with implications for export volumes and balance-of-payments stability.

The NER shows that Pakistan's RER has significantly changed. This trend provides evidence of non-market-driven ER (see Figures 2 and 3).

Further Determinants of Exchange Rate Fluctuations

PPP theory states that the ER between two countries should adjust so that identical goods and services cost the same in both countries. This theory highlights the role of prices in determining the ER. However, Mishkin (2018) argues that in the short run, ER fluctuations are influenced by factors beyond prices and trade volumes, which PPP theory does not fully account for. Figure 1 also shows that not only the price and trade factor (CPI and trade/imports) but also FX reserves influence ER of Pakistan.

Factors such as capital flows, speculation, and other financial market activities are not prominently addressed within PPP theory. However, they can impact short-term ER

movements. These factors include interest rate differentials. Higher domestic interest rates attract capital inflows, leading to an appreciation of the domestic currency. Likewise, speculation & investor sentiment make market expectations of future depreciation or appreciation hence influencing ER movements. Moreover, trade volumes and global commodity prices, particularly oil prices, have a direct impact on trade balances and ER, particularly for oil-importing economies like Pakistan. Oil imports increase the overall import bill of a country. Details of such determinants are provided here.

TOT improves the trade balance and current account, which reduces the demand for dollars and the need to draw down reserves or borrow externally. The bar chart in Figure 6 shows Pakistan's quarterly TOT from FY2019-20 to FY2024-25 (up to Oct-Dec). During FY2021-22, TOT dropped significantly, particularly in the Jul-Sep and Apr-Jun quarters (88.01 and 88.63, respectively). This signals that import prices rose faster than export prices, deteriorating Pakistan's trade position. As TOT worsened, the demand for foreign currency increased, exerting pressure on the ER.

TOT improved steadily in FY2022-23 and continued into FY2023-24 (as stated, an improving TOT improves the trade and fiscal balance), reaching 129.71 in Apr-Jun 2023. Later, in the first half of FY2024-25, TOT shows further improvement (130.24 and 133.88). This trend, accompanied by stable remittances and capital inflows, may have led to an appreciation of the PKR.

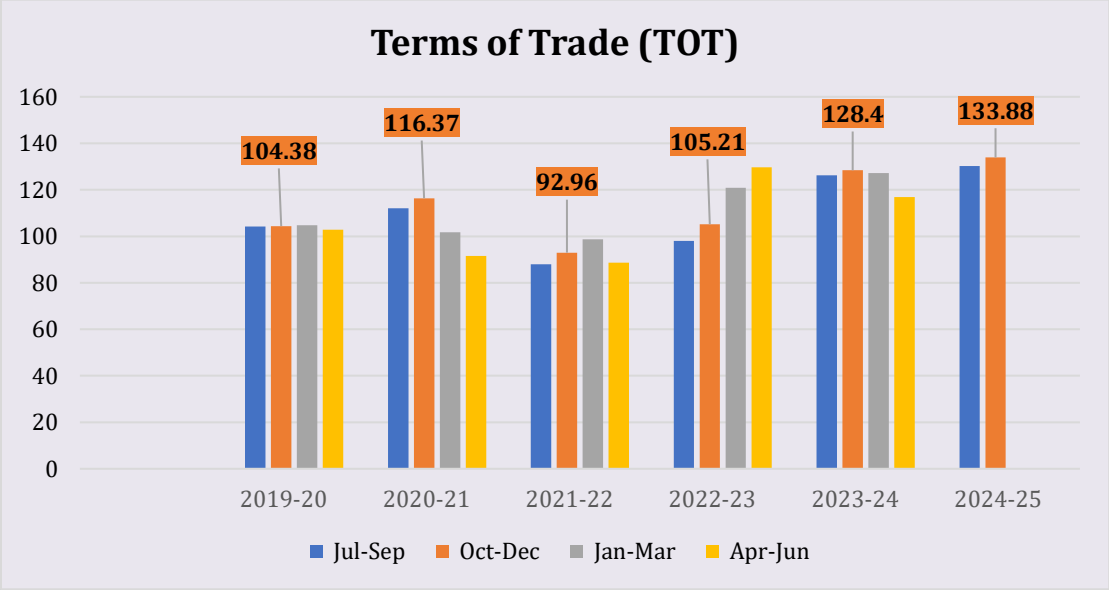

Figure 6: *Pakistan's Quarterly TOT--Jul 2020-October 2025--(PBS, 2025)*

ER also depends on factors other than a country's international trade dynamics (Mishkin, 2018). SBP (2015) also states that a country's equilibrium ER is time-dependent (short-run or long run) and depends on multiple microeconomic and macroeconomic factors. Among such other determinants, interest rate differential is a major determinant of ER. Interest rate differential is one of them. The interest rate differential depends on the theory of asset prices. This theory is applied to capture the short-run determinants of ER. It states that the ER is essentially the relative price of domestic and foreign assets, reflecting the expected returns on these assets. When domestic interest rates rise relative to foreign interest rates, the returns on domestic assets become more attractive, encouraging capital inflows. These inflows increase demand for the domestic currency, leading to its appreciation.

Fluctuations in investor preferences, risk perceptions, and liquidity conditions can significantly influence short-term ER dynamics. However, in the case of Pakistan, both the policy rate as well as the returns on assets experienced variations (the policy rate, which is the basis of such returns, reached an all-time high of 22% and then declined to 11%). Hence, this aspect of the ER equation has not been extensively explored within this paper, as it also experienced fluctuations. Figure 2 also shows that FX reserves have a significant role in the ER movements. The following Figure 7 shows the state of Pakistan's FX Reserves from December 2023 to December 2024; since the ER is constant. The figure shows upward fluctuations in the FX reserves that impact PKR/USD parity as well as its financial markets.

Figure 7: FX Reserves Pakistan (Dec-23 to Dec24)—SBP (2025)

Analysis of Regional and Global ER Related Indicators

Global oil prices, especially in countries with heavy dependence on petroleum products imports, play an important role in determining countries' price levels and ERs. Fluctuations in oil prices lead to an increase in the import bill and parallel changes in ERs, particularly in oil-importing economies like Pakistan.

Figure 8 depicts the fluctuation in global oil prices that impacts both international and regional indicators. WTI [(The West Texas Intermediate), a benchmark used for oil prices] reflects a $10 price change during 2024. The shift in oil prices impacts the import bills of Pakistan. It consequently creates a trade and budget deficit in the economy.

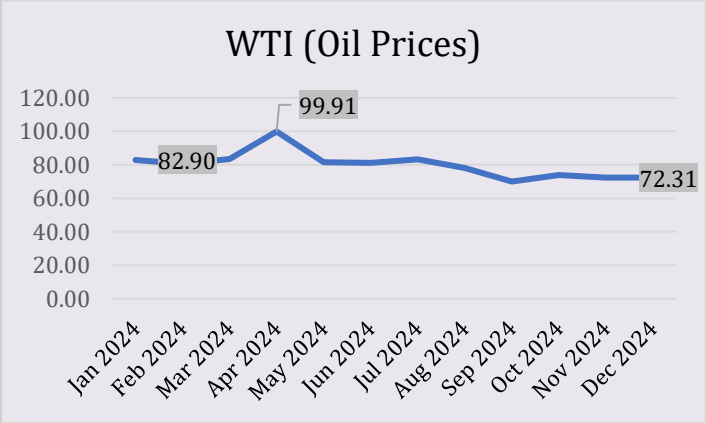

Figure 8: West Texas Intermediate (WDI, 2025)

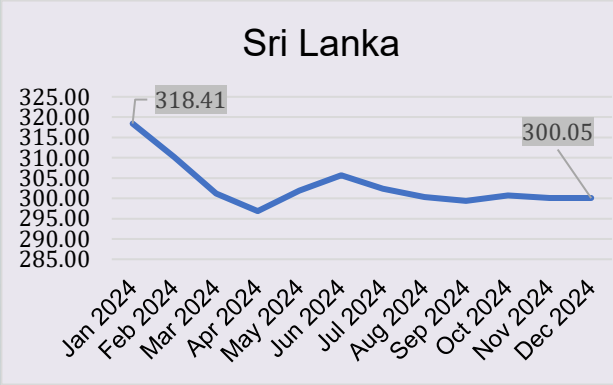

Figure 9: Sri Lanka's NER (IMF, 2025)

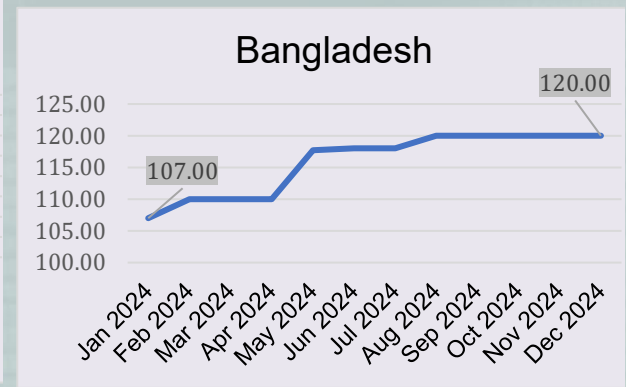

Figure 10: Bangladesh's NER (IMF, 2025)

To overcome the deficits, the government imposes taxes, which lead to an increase in consumer prices, and as a result, the ER of the rupee further loses its value and

depreciates against the US dollar. The WTI prices impact multiple regions around the globe.

Table 4: Fluctuations in Regional ER				
Country	**Jan 2024 Value**	**Dec 2024 Value**	**Change (Jan–Dec)**	**% Change**
Sri Lanka	318.41	300.05	-18.36	-5.77%
Bangladesh	107	120	13	12.15%
Source: Author's based on WDI (2025)				

The above figure shows that Bangladesh's ER fluctuates. Sri Lanka has experienced similar fluctuations in its ER. In contrast, Pakistan's ER remained (or remains) constant. This signals an intervention or managed stabilisation of ER.

FX intervention in Pakistan

On January 7, 2025, Jameel Ahmad, Governor of the SBP, stated (after a meeting with the Senate Standing Committee) that in 2024, the CB had purchased over $9 billion from the market[6]. Rao (2019) argues that a managed ER for a stable rupee requires billions of dollars that could be used otherwise for the production of goods and services in the short run. Such intervention often results in an ER shoot-up in the long run.

Since no specific ER theory supports this constant ER (see Table 1) when most economic fundamentals (trade, debt level, prices etc.) are changing. With a 30% change in the inflation rate and a 10% change in the policy rate, the ER remains constant for more than a year. Pakistan's economic outlook and its declining exports and industrial output also do not justify this constant ER. There has been intervention in the FX market in the form of foreign currency purchases. The proponents free floating ER regime (Hafsa, 2025)[7] as a result argues that Pakistan's ER is not entirely market driven as well as remained constant over the year 2024.

[6] According to multiple economists, such interventions act as non-market factors in the FX market. The News (2025). https://www.thenews.com.pk/print/1279807-sbp-net-fx-intervention-in-interbank-market-reaches-3-8bn-in-five-months Rana (2025). On January 27, 2025, an interview was conducted (with the corresponding author: Shahbaz Rana) to verify the statements and understand the context of the remarks made by the Governor of the SBP. The interview aimed to identify any ambiguities, additional explanations, or undisclosed purposes behind the Governor's statements.

[7] https://pide.org.pk/research/a-systematic-review-of-exchange-rate-studies-in-the-context-of-pakistan/

The Exchange Rate Policy Conundrum of Pakistan

Over the years in Pakistan, the proponents of the free-floating ER regime stated that the SBP may allow the supply and demand factors while determining the ER. Kasem (2022) argues that market-driven ERs, however, show fluctuations. They nonetheless stabilise over time (ceteris paribus). Paradoxically, in the case of Pakistan, the ER in 2021 was floating around PKR 150/USD. Later, despite allowing a free-floating ER for over a year, it crossed the 300 mark. But Pakistan's currency was still depreciating.

In 2023, after significant interventions by the SBP, including tightening imports and other non-market measures, the ER was stabilised. This shows that the free-floating, unstable rupee negatively impacts Pakistan's economy due to uncertainty and ER volatility. Meanwhile, a managed ER for a stable rupee requires billions of dollars that could be used otherwise for the production of goods and services. Rao (2019) likewise states that the SBP lost USD 112 billion in efforts to maintain the ER around the mandated level. However, the ER surged once the SBP ceased its interventions. Such a situation grapples the CB of Pakistan into an ER policy conundrum.

To solve the ER policy conundrum, multiple interviews, reviews, and discussions were carried out with monetary/finance policy experts in Pakistan. Their views, as well as evidence from the literature, are provided hereunder:

This study concludes that, for Pakistan, an optimal policy is to allow a managed-floating ER with intervention only in the case of a volatile rupee. However, during the intervention, there may be less focus on borrowed FX dollars since their cost is high.

The REER may serve as a valuable benchmark in this regard. The SBP may allow the PKR to fluctuate within ±3% around the index level of 100. That is, between 97 and 103. It may intervene when the ER hits the upper or lower limit of the band of the REER index in order to give some flexibility while still maintaining overall stability.

REERs have signalled large ER under/overvaluations in the run-up to many financial crises, making it essential for the IMF and other institutions to monitor bilateral RERs and multilateral REERs8. The use of REER is also common in transitional economies or those gradually liberalising their FX regimes. It, however, has limitations such as sensitivity to

[8] IMF Real Exchange Rates. https://www.imf.org/en/Publications/fandd/issues/Series/Back-to-Basics/Real-Exchange-Rates

the choice of trade weights and partners, price indices, and base year, as well as its inability to deal with speculative pressures or structural distortions. Hence, modifications to REER as well as the ER band may be regularly considered.

Another significant drawback of REER is that it does not account for the ER movements of countries that are the main competitors in the export markets. Therefore, it may not be the sole guide for ER policy. The REER may be complemented with broader fiscal assessments and market-based micro and macro indicators including the nominal bilateral ER trends, the forward premium in FX markets, the differential between multiple parallel ER markets, ER expectations derived from surveys or futures markets, capital low dynamics, sovereign credit default swap (CDS) spreads etc. of the country in particular when formulating ER policy.

Moreover, both fiscal reforms and monetary actions may move in tandem. Isolated action, as seen between 2018 and 2021 (when the ER was made “market-based” while fiscal tools remained weak and discretionary, caused harm, pulling the ER in an opposing direction).

In particular, the tax regime protects inefficient industries through high customs tariffs and duties, showing a significant anti-export bias. Heavy government spending and large fiscal deficits have meant that the impact of the tighter monetary policy was diluted, leading to higher inflation. External debt sustainability is another major area that concerns private investors and discourages FDI in Pakistan. Sustained measures to curtail the large fiscal deficits and improvements in the debt sustainability profile of Pakistan may support an independent monetary policy and market-based ER regime.

The real reform instruments are fiscal tools, not monetary policy tools like ER and interest rate. In the absence of credible and sustained fiscal reforms, the monetary policy tools remain largely ineffective, whether a CB follows a dirty float or a free float ER Regime.

While the end goal for the SBP may be a market-determined ER. However, the market-based ER regime is only viable once fiscal actions are fully exhausted and proven effective. Monetary tools are peripheral at best and they may be treated as such.

Pakistan’s recent experience shows that both administrative and market-based actions are essential for the ER stabilisation. In 2023, regulations on money changers played a key role in restoring stability in Pakistan’s FX market. Similar measures are required from

the CB for broader ER management. Intervention by the SBP remains necessary until fiscal reforms are fully implemented and have produced tangible results.

The following Table 5 provides further insights regarding the de facto classification of ER policies, the corresponding ER arrangements, and the monetary policy frameworks followed by selected countries. It highlights how peer economies such as India, Bangladesh, and the Philippines have adopted floating ER regimes alongside inflation-targeting monetary frameworks, thereby achieving a higher degree of policy flexibility and resilience to external shocks.

Moreover, the table shows that the broader trade-offs countries face between ER stability and monetary policy independence. This highlights the famous monetary policy trilemma. That is, countries that adopt hard or soft pegs typically anchor their monetary policy to the ER, limiting their ability to respond to domestic macroeconomic shocks through interest rate adjustments. In contrast, countries with floating regimes tend to pursue inflation targeting or monetary aggregate anchors, providing them with greater autonomy and responsiveness in domestic policy formulation.

Table 5: Exchange Arrangements and Monetary Policy Frameworks

Exchange Rate Arrangement (No. of Countries)	Monetary Policy Framework						
	Exchange Rate Anchor				Monetary Aggregate Target (26)	Inflation Targeting Framework (45)	Other (42)
	US Dollar (38)	Euro (25)	Composite (8)	Other (10)			
No separate legal tender (14)	Ecuador, El Salvador, Panama	Kosovo, Montenegro		Kiribati			
Currency board (12)	Djibouti, Hong Kong, Antigua and Barbuda	Bosnia and Herzegovina, Bulgaria		Macao, Brunei			
Conventional peg (40)	Bahamas, Bahrain, Iraq, Jordan, Qatar, Oman, Saudi Arabia, UAE	Denmark, Burkina Faso, Cameroon, Chad, Congo	Fiji, Libya	Bhutan, Namibia, Nepal	Samoa		
Stabilized arrangement (22)	Lebanon, Maldives, Ukraine, Trinidad	North Macedonia	Vietnam		Papua New Guinea, Bolivia, Tanzania, Tajikistan	Armenia, Romania, Guatemala	Azerbaijan, Sudan, Malawi
Crawling peg (3)	Nicaragua,		Botswana	Argentina			
Crawl-like arrangement (21)	Cambodia		Singapore		Afghanistan, Algeria, Nigeria, Rawanda	Kenya, Sri Lanka, Turkey, Uzbekistan, Jamaica	Egypt, Tunisia, Zambia
Pegged within horizontal bands (1)			Morocco				
Other managed arrangement (18)	Iran		Kuwait, Syria		Bangladesh, China, Zimbabwe	Ghana, Dominican Republic	Pakistan, Venezuela
Floating (32)					Liberia, Madagascar, Yemen	Brazil, Colombia, Hungary, India, New Zealand, S.Africa, Korea, Israel, Philippines, Thailand	Malaysia, Switzerland
Free Floating (51)						Australia, Canada, Japan, Mexico, Norway, Poland, UK, Sweden, Russia	U.S., Austria, Belgium, Germany, France, Greece, Ireland, Portugal, Spain, Italy

Source: IMF Annual Report on Exchange Arrangements and Restrictions 2023

Importantly, the table reiterates the findings of this study–that is, de facto classifications may diverge from de jure (official) policy declarations. Further solutions and recommendations for addressing the ER policy conundrum are presented at the end of this section.

Transparency

Research in advanced economies shows significant impacts of information among market participants, suggesting that increased visibility and timely disclosures can mitigate misuse and support market stability as well as trust in the ER regime of a country (Hussain, 2022). The intervention, however, not only requires resources but also distorts trust in a country's currency (Jalil, 2021). The most trusted currencies lose their value when faith in them dwindles. Thus, CB's transparency is considered a foundational mechanism for enhancing accountability.

Scholars argue that CB transparency ensures that monetary policy decisions are made autonomously, free from undue influence by political actors and financial institutions. However, these decisions must still align with the CB's socially and politically determined mandate. Transparent communication by a CB is particularly important as it provides guidance that helps shape market expectations and stabilise the economy. Transparent policies, moreover, strengthen the link between CB's immediate actions and long-term economic outcomes.

A CB signals its views to the market by making its operations known. If the signal is credible, it influences the expectations of the market on ER progress. However, a framework as well as disaggregated data regarding interventions in the FX market are not available in Pakistan. This raises questions about transparency and accountability in SBP's operations.

Despite the advantages, there are risks associated with outright transparency. Excessive transparency could trigger speculative attacks or market pressures by provoking unnecessary rumours about CB actions that result in uncertainty. However, adopting ex-post disclosures with a time lag can balance transparency and operational confidentiality. This can also be witnessed in the IMF's reporting requirements on international reserves and liquidity. Constructive ambiguity in intervention tactics can retain the element of surprise, particularly effective in floating ER regimes.

In summary, the FX intervention policy must inform:

Are the interventions transparent and rules-based? Are they consistent with the overall macroeconomic fundamentals and monetary policy? Any prolonged, large-scale, one-sided interventions in the absence of disorderly market conditions may be discouraged.

5. Conclusion & Policy Recommendations

Pakistan's ER regime has evolved significantly from a fixed ER to a managed ER, and finally, to a de facto market-determined ER regime. However, its import demand, export performance, and remittance inflows remain in jeopardy. Furthermore, the recurring signs of misalignment in the literature (Rao, 2019) raise significant concerns about the SBP and its operations. Since 1999, proponents of monetary policy have debated whether the SBP has genuinely adopted a flexible ER regime (Hafsa, 2024a, 2024b). The existing literature (Rao, 2019; Hafsa, 2024a, 2024b) shows the overvaluation and undervaluation of the Pakistani Rupee against the US dollar. Both overvaluation and undervaluation have yielded less significant beneficial results for the Pakistan economy.

The literature, moreover, suggests that such stabilisation efforts may provide SR relief, but over-reliance on interventions can obscure market signals and hinder structural reforms. Achieving a sustainable ER requires addressing core determinants like inflation control, fiscal discipline, advancing export competitiveness, maintaining adequate FX reserves, and industrial production (often termed as export-led growth), particularly in the case of Pakistan.

A stable ER can mitigate short-term volatility. However, it risks distorting market signals and creating long-term vulnerabilities (as happened in Pakistan multiple times) due to the reliance on SBP's actions rather than ensuring a market-driven equilibrium.

This paper also used an SVAR model on monthly data (January 2015 to December 2023). The movements in ER affect the CPI, FX reserves, REER, and so forth, confirming the presence of gradual ER pass-through or ERPT. This is primarily due to the dependence on international trade, which renders the country vulnerable to external factors. This paper concludes that the ER of Pakistan is not entirely market-driven.

In a country like Pakistan, where most prices are administratively managed, the possibility of ER interventions by the SBP cannot be ruled out. Historically, Pakistan has subsidised imports to serve narrow interest groups rather than national priorities[9]. This practice

[9] https://www.brecorder.com/news/4657154/reforming-exchange-rate-management-in-pakistan-20181219432492

distorts market signals and weakens external balances. Over the long run, prolonged suppression or distortion of the ER through administrative measures often results in ER volatility. Once interventions are withdrawn or become unsustainable (often due to tightening FX reserve conditions), the ER tends to adjust sharply (or shoot up) due to the accumulated pressure from delayed adjustments. The 2007 experience of Pakistan likewise shows how government controlled prices (particularly of oil) can lead to unsustainable fiscal and external imbalances, triggering crises down the line (PES, 2008)[10]. This is very important to appreciate that an entirely market based ER will be counter productive, and perhaps be harmful in many ways, in an environment where all the other prices (energy, food, etc.) are administratively managed, creating serious market distortions; thus, severely compromising ER as an effective monetary policy tool. On top of that expansionary fiscal policy complicates the matters even more, and has been the primary cause of balance of payment crisis over the last two decades. There is an urgent need to rein in the large fiscal deficits, including losses of SOEs and improve the debt sustainability profile. Under the IMF EFF program (2024-2027), the government has committed to significant fiscal tightening by maintaining a primary fiscal surplus over the medium term.

Pakistan's narrow export base may be considered. The country lacks product and market diversification. A "competitive" REER does not necessarily translate into higher exports if the supply side cannot respond effectively. Moreover, Pakistan's trade basket has evolved, but its price indices calculations often lag behind or fail to reflect services trade, remittance flows, and regional trade asymmetries.

Nonetheless, Pakistan must commit to a consistent policy direction rather than oscillating between multiple approaches. A managed or "dirty float" regime with intervention within a defined range appears most suitable.

Formulating an ER policy is inherently a complex task. Globally, countries have arrived at relatively stable ER systems only after years of experimentation, setbacks, and institutional learning. The process has often involved navigating financial crises, inflationary pressures, and structural adjustments (Mishkin, 2018). In a highly uncertain environment like Pakistan, where policymakers face the simultaneous challenge of

[10] https://www.brecorder.com/news/3520627

ensuring price stability, promoting employment, and supporting economic growth, in a nutshell, the responsibility of the lender of last resort (the SBP) becomes even more difficult.

The convoluted integrated web known as the economy is very dependent on all the stakeholders. Neither the SBP nor the rest of the economic agents can solve economic crises in isolation, as they are travelling in the same boat. A robust ER and a sound fiscal policy can only guide the economy toward prosperity.

To address the ER dilemma, the SBP may:

- Manage the ER rate within a range or band–that is, allow a managed or dirty float ER regime (a range bound to REER), particularly in times of economic crisis. A volatile rupee also negatively impacts an economy in many ways by creating uncertainty.
- Avoid acting as a market participant aiming to influence economic cycles, and intervene only to manage immediate risks.

Furthermore, a policy roadmap detailing recommended actions for implementation is provided hereunder:

Short-Term Actions

- Rebuild SBP FX reserves. Currently, despite new funding from the IMF and bilaterals, the SBP FX reserves remain low and below the threshold of 3 months of import cover. The credibility of monetary and ER policy will improve as the SBP rebuilds FX reserves.
- Publish a clear FX market participation policy framework detailing when and how the SBP will enter and exit the market.
- Manage short-term volatility with limited interventions, where necessary to protect the interest of the consumer, without trying to override long-term economic trends/cycles.
- Implement administrative controls to curb non-essential imports and manage parallel market activities.
- Regulate capital flight happening via digital and crypto platforms (like, Binance) to prevent speculative outflows that are impacting the ER.
- Ensure better coordination between fiscal initiatives and monetary policy tools to take the maximum benefit of each policy decision making vis a vis prices.

Medium-Term Actions

- Accumulate FX reserves by prioritising sustainable inflows.
- Build resilient reserves to withstand external shocks like oil price volatility and high inflation.

- Improve management of FX reserves through diversification in different currencies, investment in higher-yielding assets, and gold, as many CBs have done in the past few years.
- Transition gradually toward a market-based ER regime, in tandem with making the energy and food prices market based, and eliminating the overall distortions in the market.
- Adopt a gradual, well-communicated transition from managed to market-based regimes. In doing so, Thailand's transition can be considered as a case study.
- Balance policy-induced stability with market forces to reduce reliance on administrative tools.
- Use forward-looking macro-risk models and analytical tools (such as the VAR framework) to anticipate vulnerabilities and guide proactive policy.

Structural Reforms

- Shift the focus of ER policy toward addressing fundamental macroeconomic challenges, fiscal discipline, structural inefficiencies, and productivity enhancement.
- Promote consistent exportable surplus and productivity gains instead of relying solely on undervaluation for competitiveness.
- Reduce long-term import dependency through strategic industrial and energy diversification policies.
- Align ER management with broader policy goals like trade liberalisation, competitiveness, and economic integration.

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Appendix:

Glossary

Asset Market Approach: This approach considers exchange rates to be influenced by the interaction of demand and supply in the foreign exchange market.

Dirty Floating or Managed Floating Exchange Rate: A dirty float combines aspects of fixed and floating exchange rates and relies mostly on market forces for determining a currency's value, with some interventions from central banks and government.

Equilibrium Exchange Rate: The rate that balances the demand and supply of a currency in the absence of market interventions.

Exchange Rate: The price of one country's currency in terms of another.

Fixed Exchange Rate: An exchange rate that will not fluctuate in response to the shifts in the supply and demand for the country's currency.

Floating (Flexible) Exchange Rate: An exchange rate free to fluctuate (float) based on global supply and demand for a country's currency.

Foreign Exchange Market: The market where the exchange rate is determined by the supply and demand for foreign currency.

Interventions: A central bank's purchase or sale of foreign exchange in the market to impact/influence the exchange rate.

Nominal Exchange Rate: The number of units of the domestic currency that may be used to buy one unit of a specific foreign currency.

Pegged Exchange Rate: An exchange rate set within a specific range or against a major currency or basket of currencies.

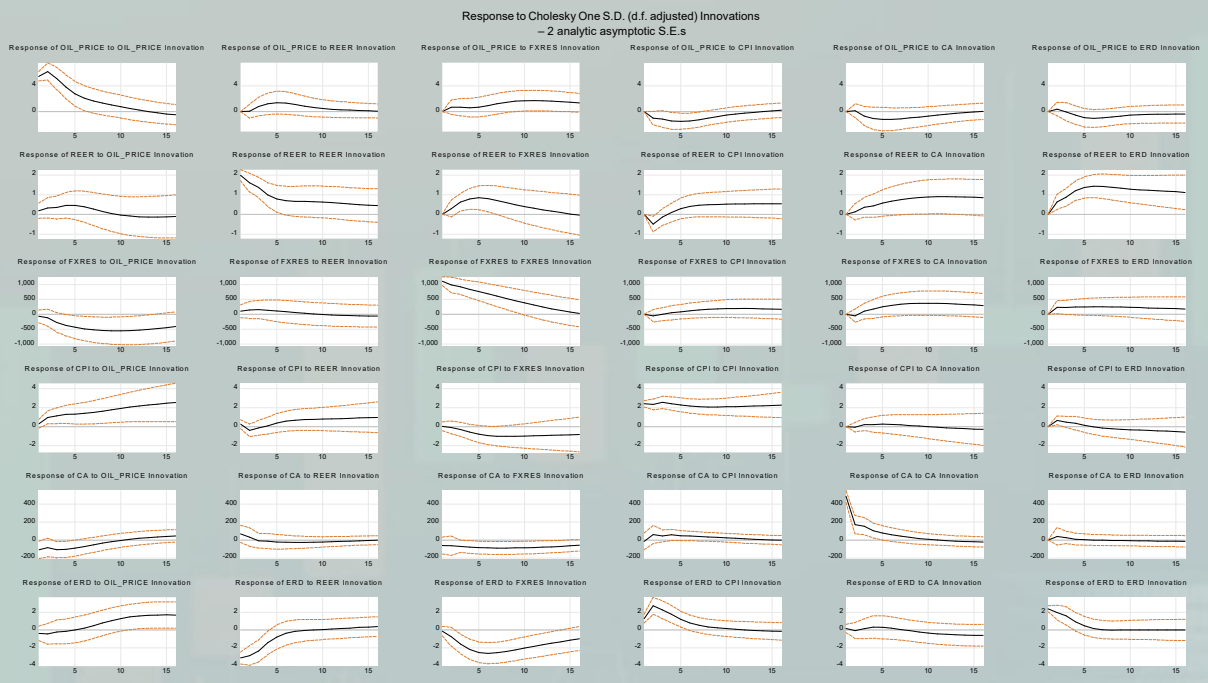
Purchasing Power Parity: A measure of the purchasing power of several countries to purchase the same basket of goods and services.

Real Effective Exchange Rate: When the nominal effective exchange rate index is corrected for relative changes in the national price or cost indicators of the home country and chosen countries.

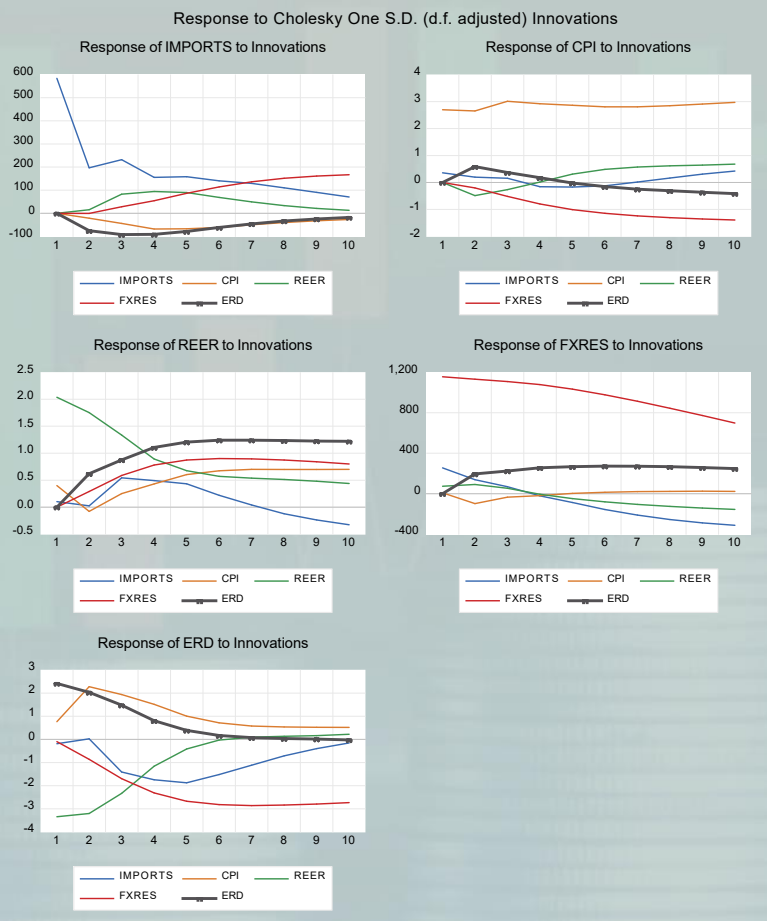
Real Exchange Rate: The ratio of the foreign and domestic price levels, where the nominal exchange rate is used to convert the foreign price level into the domestic currency units.

The Bretton Woods System: A system that established a unified framework of rules and policies to maintain fixed exchange rates.

VAR model Responses with different ordering, variables and lag lengths:



As the number of variables increased, the following VAR models gone out of the unit circle/insignificant (also shows the autocorrelation (p-value less than 0.05)


Response to Cholesky One S.D. (d.f. adjusted) Innovations
Response of IMPORTS to Innovations
Response of CPI to Innovations
Response of REER to Innovations
Response of FXRES to Innovations
Response of ERD to Innovations
IMPORTS
CPI
REER
FXRES
ERD

Response of OIL_PRICE:

Period	OIL_PRICE	REER	FXRES	CPI	CA	ERD
1	5.482537	0.000000	0.000000	0.000000	0.000000	0.000000
	(0.37304)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)
2	6.227231	0.065878	0.687988	-1.005087	0.155141	0.390268
	(0.67471)	(0.53765)	(0.55151)	(0.51654)	(0.53720)	(0.52211)
3	5.159876	0.802944	0.694285	-1.150384	-0.700250	-0.022820
	(0.86331)	(0.72019)	(0.66619)	(0.64598)	(0.73764)	(0.70701)
4	3.818603	1.208321	0.613809	-1.449323	-1.075972	-0.542220
	(0.92583)	(0.83542)	(0.72363)	(0.65464)	(0.87263)	(0.72116)
5	2.758979	1.407568	0.701820	-1.505518	-1.186901	-0.949747
	(0.96140)	(0.88581)	(0.77035)	(0.62278)	(0.90925)	(0.71102)
6	2.082023	1.327097	0.927922	-1.438143	-1.181363	-1.058527
	(0.97042)	(0.87563)	(0.79015)	(0.60166)	(0.88236)	(0.69573)
7	1.642343	1.113552	1.207114	-1.244163	-1.098821	-0.986332
	(0.95245)	(0.82468)	(0.79320)	(0.58347)	(0.83675)	(0.67372)
8	1.323367	0.864070	1.450725	-1.000450	-0.985713	-0.830417
	(0.92679)	(0.76508)	(0.79573)	(0.56707)	(0.79335)	(0.65837)
9	1.042773	0.648203	1.618608	-0.756555	-0.847828	-0.674778
	(0.90595)	(0.71462)	(0.80047)	(0.55827)	(0.75561)	(0.65733)
10	0.769597	0.487867	1.704642	-0.541608	-0.698631	-0.554322
	(0.88899)	(0.67547)	(0.80351)	(0.55637)	(0.72341)	(0.66525)
11	0.500552	0.377511	1.723185	-0.362955	-0.546838	-0.474810
	(0.87201)	(0.64468)	(0.80223)	(0.55710)	(0.69637)	(0.67552)
12	0.245225	0.300491	1.693740	-0.215846	-0.401174	-0.426787
	(0.85366)	(0.61960)	(0.79584)	(0.55790)	(0.67437)	(0.68504)
13	0.014457	0.240658	1.633140	-0.091889	-0.267593	-0.397849
	(0.83437)	(0.59805)	(0.78420)	(0.55842)	(0.65681)	(0.69270)
14	-0.184513	0.187405	1.552848	0.016234	-0.149643	-0.378462
	(0.81506)	(0.57840)	(0.76768)	(0.55899)	(0.64280)	(0.69784)
15	-0.348951	0.135943	1.459554	0.112984	-0.048759	-0.363385
	(0.79669)	(0.55994)	(0.74716)	(0.55970)	(0.63139)	(0.70004)
16	-0.479525	0.085547	1.356913	0.200266	0.035040	-0.350791
	(0.78006)	(0.54270)	(0.72386)	(0.56040)	(0.62167)	(0.69913)