“Impact of exchange rate fluctuations on Nifty bank and FinServ indices: A financial modelling perspective”

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IMPACT OF EXCHANGE RATE FLUCTUATIONS ON NIFTY BANK AND FINSERV INDICES: A FINANCIAL MODELLING PERSPECTIVE

Abstract

This study examines the impact of exchange rate fluctuations on banking and financial service indices in India. To validate this, five exchange rates are considered based on their relative share in the total foreign remittance inflows to India, viz., Arabian Dirham (AED/INR), Great Britain Pound (GBP/INR), Saudi Riyal (SAR/INR), Singapore Dollar (SGD/INR), and US Dollar (USD/INR). The study includes daily data of a decade (2015–2025), and employs various econometric techniques such as ADF test, Johansen cointegration, Vector Error Correction Model (VECM), and Impulse Response Function (IRF) for the analysis. The Johansen cointegration test indicates a long-run relationship between exchange rates and both the sectoral indices, as the probabilities are less than 0.05. The VECM analysis for both the Nifty Bank and Nifty FinServ identified USD/INR (2,308.66; 2,257.58) and SAR/INR (373.25; 360.73) as the dominant long-term drivers, whereas AED/INR (–2,671.406; –2,608.011) acts as a persistent structural anchor with a negative influence. In the short run, shocks in USD/INR and SGD/INR generate immediate positive effects, whereas volatility in AED/INR and SAR/INR leads to temporary negative deviations before the system converges back to the equilibrium. The impulse response function indicates that exchange rate shocks have temporary effects on both the indices, which dissipate quickly, reflecting rapid market adjustment and overall efficiency. The findings of this study will help policymakers to improve the exchange rate risk monitoring system and executives in banks and financial institutions to formulate their hedging strategies. For investors and portfolio managers, the findings suggest that exchange rate movements can serve as early indicators of market fluctuations, thereby supporting more informed investment decisions.

Keywords exchange rate, Nifty, bank, financial services, fluctuations, financial modelling

JEL Classification F31, G10, G32, N20

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INTRODUCTION

The increasing interconnectivity of global finance has resulted in greater cross-border capital flows, accelerated transmission of financial shocks, and heightened sensitivity of domestic markets to fluctuations in foreign exchange rates. Diversification of domestic banking and financial services has become a critical channel for the transmission of fluctuations caused by foreign exchange movements across national economies, particularly in emerging markets like India. The liberalization process in the 1990s; the expansion of multinational banking; and the increased involvement of Indian financial organizations in global payment settlements, and derivatives markets have further broadened this relationship. Therefore, global movements in exchange rates now have implications for liquidity conditions; foreign investment patterns; asset prices; and the valuation of listed financial institutions in India. In terms of narrowing the focus down to the Indian

stock market, Nifty Bank and Nifty FinServ (indices that represent the performance of major banks; non-banking financial companies; insurance companies and financial services companies) are the indicators of financial system stability. These indices are also heavily influenced by capital inflows; foreign currency borrowings; hedging costs; external exposure; and global risk perceptions, thus they are also responsive to changes in the values of the major foreign exchange rates.

As a significant recipient of global remittances, India's financial system can also benefit from understanding the macroeconomic relevance of currency movements that reflect the remittance source country. The top five currencies, namely the UAE Dirham (AED), British Pound Sterling (GBP), Saudi Riyal (SAR), Singapore Dollar (SGD), and US Dollar (USD), together make up the majority of India's inward remittances, and will therefore be a source of liquidity into the financial system, determine interest rate expectations, influence corporate profitability, and alter investor confidence. The banking and financial services sector of India get a significant portion of the inward remittances, and hence, it is vulnerable to fluctuations in the value of currency of the remitting country against the Indian rupee in terms of deposits, lending, treasury and other foreign exchange transactions.

In this context, the present study aims to investigate the relationship between exchange rate fluctuations and the performance of the banking and financial services sector of India. These sectors play an important role in raising foreign capital and absorbing macroeconomic shocks. By investigating the sectoral indices, the present study aims to understand how exchange rate movements get reflected in the market valuation and gain insight into the financial markets in India.

1. LITERATURE REVIEW AND HYPOTHESES

Foreign exchange rate connects domestic economies to global economies. The exposure of currencies to external shocks and policy uncertainties have grown due to increased globalisation, economic integration, and trade openness. Further geopolitical issues also deepen the foreign exchange rate fluctuations. The literature establishes the relationship between exchange rate movements and stock market performance in international finance through several channels including capital flows, firm competitiveness, valuation effects, and investor expectations. Phylaktis and Ravazzolo (2005) and Baeriswyl et al. (2024) recognize exchange rate fluctuation as an important risk factor in asset pricing and as a critical driver of cross-border investment behaviour. Fluctuations in major currencies significantly trigger stock volatility; although their effects vary according to market structure and macro-economic conditions (Pan et al., 2006; Merritt & Roache, 2006; Mohanty et al., 2023).

In developing countries, the exchange rates are more unstable and prone to volatility as compared to developed economies because of high dependence on foreign capital and greater exposure to external market and shocks and lower market depth (Chue & Cook, 2007; Rath, 2022; Fadilah et al., 2024). Asian economic studies suggest that during financial predicament there is more uncertainty and stock prices decline, leading to currency depreciation (Fang & Miller, 2002; Kumar & Singh, 2022; Goswami et al., 2023). Exchange rate shocks in ASEAN economies can cause movements in stock indices causing directional spillovers from currency to equity to markets (Pan et al., 2006; Tule et al., 2017; Ogawa & Luo, 2025). According to Kustina et al. (2024) and Shan (2024), sectoral indices across Korea, Malaysia, Singapore, and China indicate that industries with greater foreign currency exposure exhibit higher sensitivity to exchange rate fluctuations.

Empirical studies have reported a steady linkage between exchange rate movements and stock market returns in India; where the magnitude and tenacity of effects vary across periods and sectors (Victor et al., 2021; Sreenu, 2023; Salisu, 2024). Due to lower hedging cost and superior investor sentiments, an appreciation of the Indian rupee is seen against the US dollar with a reduced fluctuating equity market (Lakshmanasamy, 2021; Matha et al., 2022; Shravan, 2022; Mohapatra et al., 2024). To the contrary, currency depreciation has been

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shown to amplify uncertainty and negatively affecting equity valuations in the sectors linked to foreign borrowing and trade exposures (Fama, 1970; Victor et al., 2021; Shravan, 2022; Rath, 2022; Hussain et al., 2023).

A major strand of Indian literature emphasizes sector-specific responses to exchange rate fluctuations rather than aggregate effects of the market. According to Tule et al. (2017) and Matha et al. (2022), banking and financial services sectors are highly sensitive to exchange rate movements because of their high involvement in foreign currency borrowing, treasury operations, remittance handling, and derivatives transactions. Variability in USD/INR exchange rate has a significant influence on intra-day movements of bank stocks and equity derivatives (Acharya & Vij, 2020; Salisu, 2024). Moreover, Chakraborty et al. (2024) and Mohapatra et al. (2024), provided empirical evidence that suggests bi-directional relation between exchange rates and benchmark indices such as Nifty, endorsing feedback effects between currency expectations and stock market performances.

Present day research highlights that the US dollar no longer fully controls the evolving structure of India's external financial linkages. Trade in the British Pound, UAE Dirham, Saudi Riyal, etc. have influenced domestic liquidity conditions and financial sector performance (Avdjiev et al., 2016; Hussain et al., 2023). Gulf countries with large NRI customer bases can affect balance sheets and deposit bases of Indian banks (Fama, 1970; Jijin et al., 2021; Sreenu, 2024; Ogawa & Luo, 2025). Barik and Rao (2019) Bulatov et al. (2021), and Shah (2024) suggest that GBP/INR and SGD/INR affect Indian financial institutions through derivative exposures and European market linkages; as well as cross-border payment activities in South-East Asia.

Indian financial sector stability, including liquidity creation, credit growth, non-performing assets (NPA), and treasury income are all affected by exchange rate fluctuation (Fama, 1970; Cooray, 2012; Jijin et al., 2021; Jameaba, 2022; Baeriswyl et al., 2024). Goswami et al. (2023) and Kustina et al. (2024) suggest that studies during heightened uncertainty (post-COVID phase) demonstrate banking and financial sector became more responsive to currency fluctuations because of reduced liquidity and increased global risk perceptions. Several studies report that despite strong short-run interactions, the long-run equilibrium relationship between exchange rates and Indian market indices are often weak or absent, indicating information absorption and market efficiency (Kumar & Singh, 2022; Kumar & Gupta, 2024; Mohanty et al., 2025).

On the overall, the literature review found that exchange rate fluctuations play a significant role in the changing dynamics of stock markets of developing economies and financially concentrated sectors such as banking and financial services. Prior studies examining exchange rate dynamics remain fragmented, primarily due to variations in currency selection, sectoral focus, and differing time horizons. Consequently, the relationship between exchange rate movements and sector-specific performance particularly within emerging economies, may yield heterogeneous outcomes. Addressing this gap, the present study aims to analyse the impact of exchange rate fluctuations (AED/INR, GBP/INR, SAR/INR, SGD/INR, and USD/INR) on the banking and financial services sector in an emerging economy such as India.

Based on the extant literature and the study's objective, the research examines the impact of selected exchange rates (AED/INR, GBP/INR, SAR/INR, SGD/INR, and USD/INR) on India's financial sector indices – Nifty Bank and Nifty FinServ. Accordingly, the following hypotheses are proposed:

H_1: *Exchange rates positively influence the return of Nifty Bank.*

H_2: *Exchange rates positively influence the return of Nifty FinServ.*

2. METHODOLOGY

This study is conducted to analyze the impact of exchange rate fluctuations on banking and FinServ indices. Nifty Bank and Nifty FinServ are taken as dependent variables, and UAE Dirham (AED/INR), Great Britain Pound (GBP/INR), Saudi Riyal (SAR/INR), Singapore Dollar (SGD/INR), US Dollar (USD/INR) are the independent variables. The period selected for the study is 10

years i.e. from 1st August 2015 to 1st August 2025. Initially the data of exchange rate were accounted to around 2600 observations but found only 2,479 observations in the sectoral indices for the study. Further the data were sanitized according to the trading dates, using VLOOK UP formula of Excel, and finally 2463 number of observations are considered and converted to log return for further analysis.

As the study includes time series data, a standard unit root (Augmented Dickey-Fuller) test is applied to check stationarity of the series, based on Schwartz Information Criterion. The standard unit root equation of the ADF test with intercept and no trend is:

$$\Delta Y_t = \alpha + \gamma Y_{t-1} + \sum_{i=1}^{p} \delta i \Delta Y_{t-1} + \varepsilon_t, \qquad (1)$$

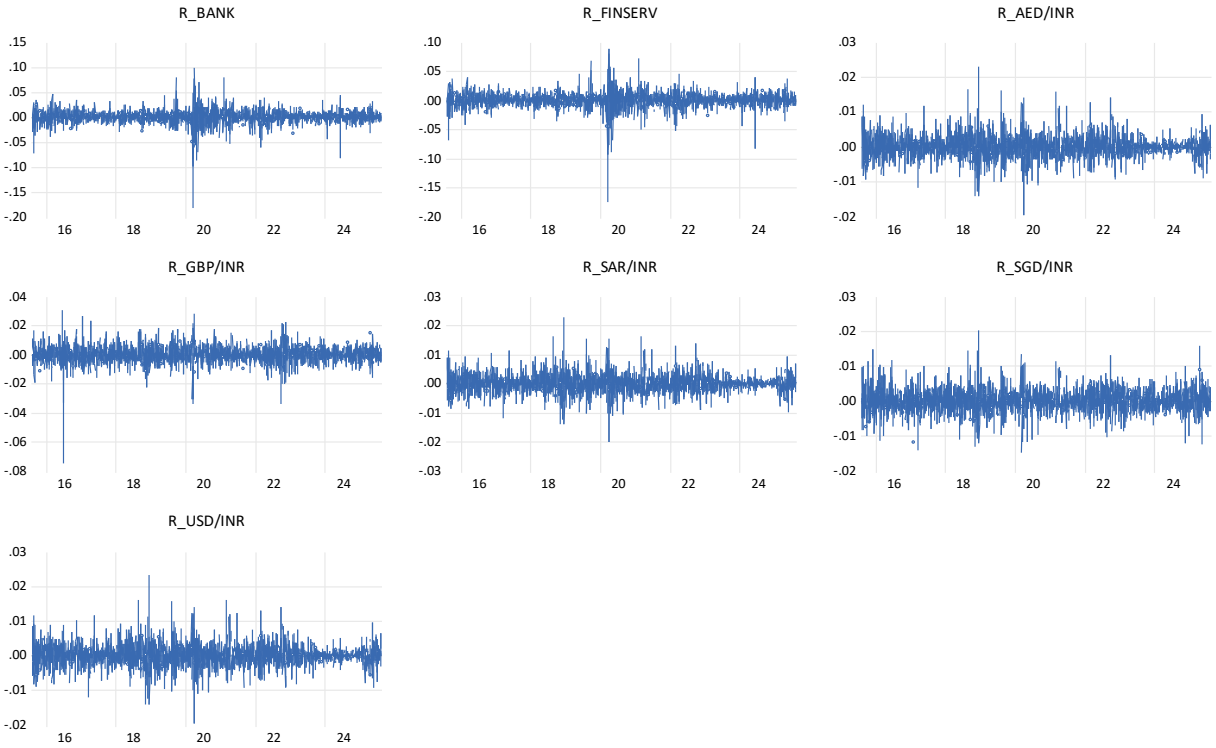
where $\Delta Y_t = Y_t - Y_{t-1}$; α = constant; γ = coefficient; p = no of Lag; ε_t – error term.

Johansen cointegration test is applied to study the long-run association among select variables. The VECM is used in the study to capture the speed at which the system corrects back to its long-term steady state following a temporary deviation caused by exogenous shocks. After confirmation of long-run equilibrium by cointegration test, then the VECM model is applied.

In addition, Impulse Response Function (IRF) applied to understand how a shock to one variable affects other variables over time. The IRF traces dynamic effect of shock to a variable on the current and future value of the variables in the system. This is derived from Vector Moving Average (VMA) model, which expresses each variable is a function of current and past shocks.

3. RESULTS AND DISCUSSION

The series are found to be mean reverting which implies that the data are suitable for further time series analysis. The line and symbol graph illustrates the movement of the return series (Figure 1). The fluctuations of Nifty Bank and Nifty FinServ are significantly higher compared to those observed in the exchange rate series.



Note: X-axis represents the year and Y-axis represents the log returns.

Figure 1. Time series graph

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ADF test is applied to examine the presence of unit root and stationarity of the time-series as the preliminary requirement (Table 1). The probability values (p-values) are found to be between 0.0000 and 0.0001, which are significantly lower than the standard threshold level of 0.05. So, it is found that series are stationary at levels, therefore further analysis can be conducted without transforming the data into first difference.

Table 1. ADF test

Variables	Probability
R_BANK	0.0001
R_FINSERV	0.0000
R_AED/INR	0.0001
R_GBP/INR	0.0001
R_SAR/INR	0.0001
R_SGD/INR	0.0001
R_USD/INR	0.0001

Descriptive statistics of selected sectoral indices and exchange rates are calculated and presented in Table 2. The Nifty Bank (0.013977) and Nifty FinServ (0.013429) indices show significantly higher standard deviations. The stock indices (R_BANK and R_FINSERV) have negative skewness (–1.15 and –1.23) which indicates they are prone to frequent small gains and occasional large negative shocks (left-tail events). The kurtosis values of all the variables exceed 3, which means the data are leptokurtic. The kurtosis of Nifty Bank and Nifty FinServ is found to be very high, and the negative skewness indicates a pronounced bias toward negative shocks. Furthermore, the probability values of Jarque-Bera test are 0.0000, which shows the data are not normally distributed.

Johansen cointegration test is applied to study the long-run association between variables. The result shows that trace statistics are much higher than the critical values; and also, the probabilities are less than 0.05, indicating the presence of cointegration. This confirms a strong long-run equilibrium between Nifty Bank and exchange rates (Table 3). Similarly, FinServ also exhibits a long-run association with exchange rates.

Table 3. Cointegration test

Cointegration test of Nifty Bank			
Hypothesized No	**Trace Statistics**	**Critical Values**	**Probability**
None*	4,253.363	125.6145	0.0000
At Most 1*	3,127.984	95.75366	0.0000
At Most 2*	2,322.200	69.81889	0.0000
At Most 3*	1,738.747	47.85613	0.0000
At Most 4*	1,204.649	29.79707	0.0000
At Most 5*	752.0284	15.49471	0.0000
Cointegration test of Nifty FinServ			
Hypothesized No	**Trace Statistics**	**Critical Values**	**Probability**
None*	3,674.410	25.75366	0.0000
At Most 1*	2,550.150	61.81889	0.0000
At Most 2*	1,751.646	47.85313	0.0000
At Most 3*	1,214.546	29.79707	0.0000
At Most 4*	761.6257	15.49471	0.0000
At Most 5*	353.0755	3.841466	0.0000

Note: * denotes significance at 1% level.

The selection of optimum lag length is important for capturing the dynamic relationship among variables while avoiding over-parameterization of the model. Schwarz Information Criterion (SC) is employed to select the optimal lag for the analysis (Table 4). The result/criterion consistently identifies two lags as the optimum lag length for every select variable including the sectoral indices

Table 2. Descriptive statistics

Statistic	R_BANK	R_FINSERV	R_AED_INR	R_GBP_INR	R_SAR_INR	R_SGD_INR	R_USD_INR
Mean	0.000457	0.000521	0.000124	6.23E–05	0.000123	0.000152	0.000123
Median	0.00068	0.000745	0.000066	6.58E–05	0	0.000113	4.79E–05
Maximum	0.099951	0.089107	0.02306	0.030586	0.023026	0.020243	0.023156
Minimum	–0.18313	–0.17362	–0.01943	–0.07505	–0.01987	–0.01483	–0.01965
Std. Dev.	0.013977	0.013429	0.003193	0.005988	0.003208	0.003379	0.003182
Skewness	–1.15053	–1.23753	0.310245	–0.88663	0.30581	0.169698	0.320723
Kurtosis	21.62647	21.08721	6.869601	15.42393	6.83855	5.091451	6.945793
Jarque-Bera	36,148.67	34,202.14	1,576.199	16,163.29	1,550.515	460.7204	1,640.023
Probability	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sum	1.125776	1.283796	0.304195	0.153526	0.303659	0.375132	0.304167
Sum Sq. Dev.	0.480997	0.443993	0.025098	0.088288	0.025335	0.028116	0.024923
Observations	2,463	2,463	2,463	2,463	2,463	2,463	2,463

(R_BANK, R_FINSERV) and currency exchange rates (R_AED_INR, R_GBP_INR, R_SAR_INR, R_SGD_INR, & R_USD_INR).

Table 4. Lag length criteria

Variable	SC Criterion	Optimum Lag
R_BANK	–5.69962*	2
R_FINSERV	–5.778441*	2
R_AED_INR	–8.64753*	2
R_GBP_INR	–7.38415*	2
R_SAR_INR	–8.63817*	2
R_SGD_INR	–8.53041*	2
R_USD_INR	–8.5674*	2

Note: * denotes value of SC criterion of optimum lag.

The VECM result of Nifty Bank (Table 5) shows a distinctive divergence between immediate market volatility and long-term structural equilibrium. In the long-run USD/INR (2,308.663) and SAR/INR (373.2495) maintain a strong positive relationship, suggesting that these currencies act as primary growth drivers over an extended horizon. Conversely, AED/INR, GBP/INR and SGD/INR show negative relationship. Short-term dynamics reveal that USD/INR (3.03563) and SGD/INR (0.258287) provide an immediate positive stimulus to the index following a currency shock. GBP/INR (0.025903) also shows positive relationship in the short-run but the magnitude is less. In contrast, AED/INR and SAR/INR exert initial downward pressure, although the Saudi Riyal eventually reverses this trend to achieve its positive long-term trajectory. Equation 2 specifies VECM dynamics for Nifty Bank, integrating the long-run cointegrating equilibrium with a system of lagged short-term innovations to capture the transmission of currency shocks.

Table 5. VECM results of Nifty Bank

Variable	Short-term relationship	Long-term relationship
R_AED_INR	–3.241489	–2671.406
R_GBP_INR	0.025903	–0.679182
R_SAR_INR	–0.272336	373.2495
R_SGD_INR	0.258287	–3.78613
R_USD_INR	3.03563	2308.663

$$
\begin{aligned}
D(R\_BANK) = {} & C(1)\cdot(R\_BANK(-1) \\
& -2{,}671.40648339\cdot R\_AED\_INR(-1) \\
& -0.679182096011\cdot R\_GBP\_INR(-1) \\
& +373.24952962\cdot R\_SAR\_INR(-1) \\
& -3.78612969134\cdot R\_SGD\_INR(-1) \\
& +2{,}308.66282343\cdot R\_USD\_INR(-1) \\
& -0.000451938618064\ ) \\
& +C(2)\cdot D(R\_BANK(-1)) \\
& +C(3)\cdot D(R\_BANK(-2)) \\
& +C(4)\cdot D(R\_AED\_INR(-1)) \\
& +C(5)\cdot D(R\_AED\_INR(-2)) \\
& +C(6)\cdot D(R\_GBP\_INR(-1)) \\
& +C(7)\cdot D(R\_GBP\_INR(-2)) \\
& +C(8)\cdot D(R\_SAR\_INR(-1)) \\
& +C(9)\cdot D(R\_SAR\_INR(-2)) \\
& +C(10)\cdot D(R\_SGD\_INR(-1)) \\
& +C(11)\cdot D(R\_SGD\_INR(-2)) \\
& +C(12)\cdot D(R\_USD\_INR(-1)) \\
& +C(13)\cdot D(R\_USD\_INR(-2)) \\
& +C(14)\ .
\end{aligned}
\tag{2}
$$

The VECM analysis reveals a complex relationship between select exchange rates and FinServ Nifty. In the long-run, USD/INR (2,257.582) and SAR/INR (360.7276) show a strong positive relationship with the index suggesting that sustained appreciation of these currencies supports sector growth over time. Conversely, AED/INR (–2,608.011) and SGD/INR (–3.68811) exhibit significant negative long-run relationship, indicating that these exchange rate movements act as a persistent drag on the index's equilibrium. Short-term dynamics, represented by the lagged differenced terms, show that USD/INR (2.0237) and SGD/INR (0.3161) provide an immediate positive stimulus following a currency fluctuation. However, AED/INR (–1.8643), GBP/INR (–0.01178) and SAR/INR (–0.6858) report negative short-term impact, with the latter suggesting a temporary market dip be-

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fore the positive long-term trend takes a hold. Equation 3 reflects the VECM framework.

Table 6. VECM results of Nifty FinServ

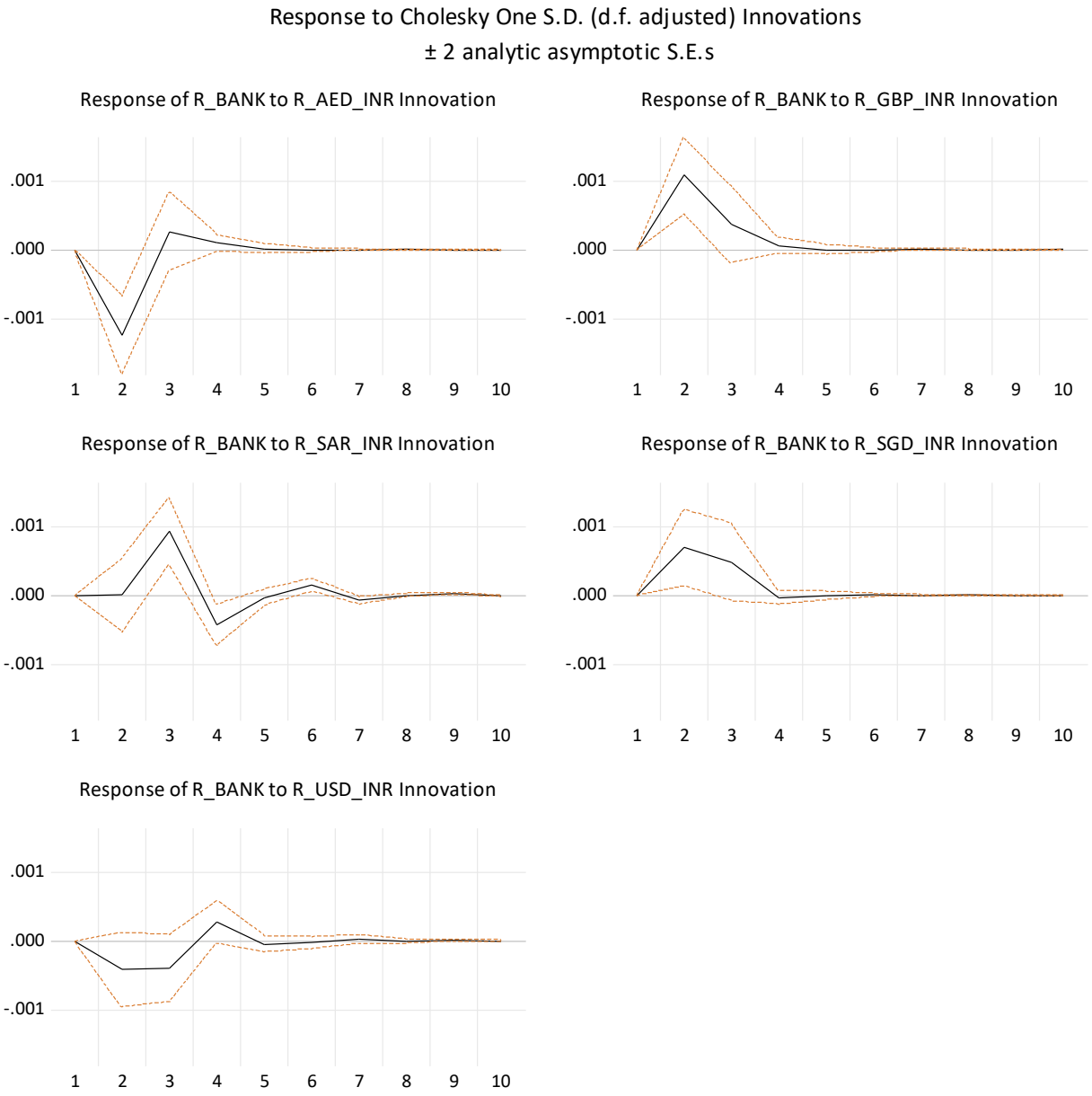
Variable	Short–term relationship	Long–term relationship
R_AED_INR	–1.864334	–2,608.011
R_GBP_INR	–0.01178	–0.650767
R_SAR_INR	–0.685879	360.7276
R_SGD_INR	0.316183	–3.68811
R_USD_INR	2.023794	2,257.582

$$
\begin{aligned}
&D(R\_FINSERV)\\
&=C(1)\cdot(R\_FINSERV(-1)\\
&-2,608.0106829\cdot R\_AED\_INR(-1)\\
&-0.650767268471\cdot R\_GBP\_INR(-1)\\
&+360.727588214\cdot R\_SAR\_INR(-1)\\
&-3.68810999251\cdot R\_SGD\_INR(-1)\\
&+2,257.58228332\cdot R\_USD\_INR(-1)\\
&-0.000525670877445\ )\\
&+C(2)\cdot D(R\_FINSERV(-1))\\
&+C(3)\cdot D(R\_FINSERV(-2))\\
&+C(4)\cdot D(R\_AED\_INR(-1))\\
&+C(5)\cdot D(R\_AED\_INR(-2))\\
&+C(6)\cdot D(R\_GBP\_INR(-1))\\
&+C(7)\cdot D(R\_GBP\_INR(-2))\\
&+C(8)\cdot D(R\_SAR\_INR(-1))\\
&+C(9)\cdot D(R\_SAR\_INR(-2))\\
&+C(10)\cdot D(R\_SGD\_INR(-1))\\
&+C(11)\cdot D(R\_SGD\_INR(-2))\\
&+C(12)\cdot D(R\_USD\_INR(-1))\\
&+C(13)\cdot D(R\_USD\_INR(-2))\\
&+C(14)\,.
\end{aligned}
\tag{3}
$$

The Impulse Response Function (IRF) illustrates the dynamic relationship between Nifty Bank and selected five exchange rates, with responses estimated at 95% confidence interval. The results reveal a clustered pattern of behaviour: R_AED, R_SAR, and R_USD all have a nearly identical "down-up" oscillation, indicating their economic linkage. A shock to these currencies leads to a sharp negative response in banking index by the second period, followed by a corrective rebound (Figure 2). Specifically, a shock in R_AED_INR cause an immediate decline, reaching approximately to –0.0012 by the second period. In contrast, response to the shocks of R_GBP (peak expansion of +0.001) and R_SGD (peaking at approximately 0.0007 in the second period) result in a positive response, pushing banking returns higher in the days immediately after the event. Most crucially, all five graphs show that the market is efficient and the fluctuations dies out-the ripples cease-and returns to the zero baseline in around day six or seven, indicating that the Indian market absorbs currency information rapidly and settles down within a week.

The IRF function also applied on Nifty FinServ and selected exchange rates (Figure 3). The findings indicate that the shocks to the British Pound (R_GBP_INR) and Singapore Dollar (R_SGD_INR) result in an immediate positive response, wherein the financial services index leaps upward and peaks on day 2. In contrast, a shock to the USD-pegged currency shows a different pattern. A shock to the US Dollar (R_USD_INR) results in a notable negative dip in returns on the second day, followed by a corrective rebound during the third or fourth period (with a minimum magnitude of about –0.0004). Similarly, a shock to the UAE Dirham (R_AED_INR) leads to a sharp decline in the index reaching approximately to – 0.0014 in the second period. The Saudi Riyal (R_SAR_INR) display highest volatility, characterized by a sharp increase followed by an equally sharp decline (reaching its maximum positive magnitude of 0.0009). Importantly, these effects are short-lived, as all impulse responses converge back to the baseline within five to six periods. This behavior is consistent with efficient market hypothesis, suggesting the market quickly absorbs exchange rate shocks and stabilizes in a short time frame.

The findings of this study provide important insights into how exchange rate fluctuations impact the performance of the banking and the financial



Note: X-axis represents the year number and Y-axis represents the response of the dependent variable.

Figure 2. Impulse response (Nifty Bank)

services sector. The descriptive analysis confirms that both the sectoral indices exhibit high fluctuations and negative skewness compared to exchange rate returns, suggesting the stock market responds more aggressively than the currency market. The results are consistent with previous studies that stock market exhibits non-normal characteristics (Fama, 1995; Lakshmanasamy, 2021; Kustina et al., 2024). The ADF test confirms that all the series are stationary at levels as the p-values are less than 0.05. Johansen cointegration test confirms that there is a long-run relationship between exchange rate and sectoral indices. These findings validate the earlier studies that Indian financial market maintains stable long-run equilibrium with currency markets (Acharya & Vij, 2020). Emerging market prices adjust rapidly to the latest information and do not allow prolonged misalignment between the currency market and sectoral indices.

The analysis of VECM indicates significant long-run interactions, especially between SAR/INR and USD/INR to Nifty Bank. Conversely, other exchange rates exhibit significant negative coeffi-

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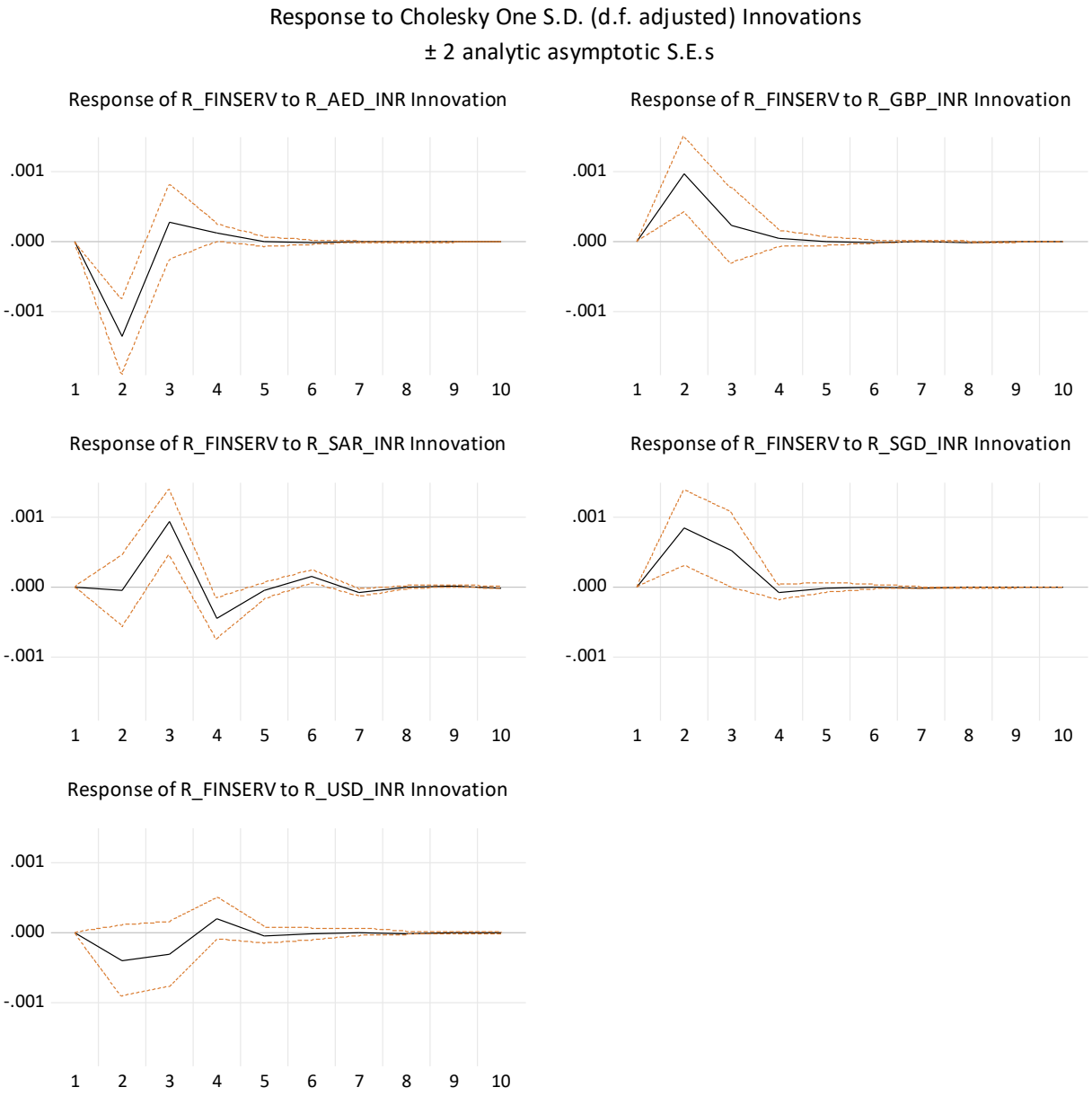

Note: X-axis represents the year number and Y-axis represents response of the dependent variable.

Figure 3. Impulse response (Nifty FinServ)

cients, implying an inverse relationship with the dependent variable in the long-run. In the short-run, however, GBP/INR, SGD/INR and USD/INR display a positive relationship with the Nifty Bank, while the remaining exchange rates show negative effects, indicating differing short-run dynamics across currencies. The hypothesis (H_1) is partially supported, with mixed directional effects observed. The model asserts that exchange rate movements can temporarily influence stock prices through capital flow adjustments and macroeconomic expectations (Dornbusch & Fisher, 1980).

The long-run results indicate a significant positive relationship between SAR/INR, USD/INR, and Nifty FinServ, suggesting that movements in these exchange rates positively influence the index over time. In contrast, other exchange rates exhibit a negative relationship, implying an inverse long-run impact. In the short-run, USD/INR and SGD/INR continue to show a positive association with the Nifty FinServ, while the remaining exchange rates demonstrate negative relationships, reflecting differing short-run dynamics across currencies which is consistent with the earlier literature

(Barik & Rao, 2019; Sinha, 2016). Hence, the hypothesis (H_2) is partially supported, with mixed directional results observed.

Impulse Response further confirms the short-lived nature of these effects, echoing the Efficient Market Hypothesis (Fama, 1970), which postulates that market incorporate currency information quickly, causing shocks to dissipate within days. Similarly, short-run reaction and correction behavior has been documented in exchange rate and stock market studies in India and other emerging economies (Goswami & Mohammed, 2023; Hussain et al., 2023).

CONCLUSION

This study is an attempt to analyse the impact of select exchange rates (AED, GBP, SAR, SGD, & USD) on Nifty Bank and Nifty FinServ. Cointegration test revealed that there is a long-run equilibrium, which implies that currency shocks create long-term impacts on India's financial sectors. The VECM results confirm significant long-run relationships, with USD/INR and SAR/INR positively influencing the Nifty Bank and Nifty FinServ, while other three exchange rates exhibit negative impacts. In the short-run, USD/INR, GBP/INR, and SGD/INR show positive impacts, whereas the remaining currencies exhibit inverse relationship with Nifty Bank. However, SGD/INR and USD/INR show positive relationship with Nifty FinServ. Overall, the findings highlight that exchange rate movements have both short-run and long-run implications for sectoral stock performance. The results from the Impulse Response Function show that the shocks are, in general temporary, i.e., some of the currencies created a negative impact, which was short-lived, and some created a positive impact, which too, was short-lived. In both the cases, the market has been able to cope-up with the information conveyed by the currency shocks. These findings suggest that India's financial markets are relatively efficient in interpreting global currency signals, as deviations from equilibrium are corrected immediately rather than persisting in the long-run.

From a policy perspective, the findings emphasize the importance of tracking remittance-linked currencies in order to monitor their influences on short-term liquidity conditions and investor sentiment. Strengthening hedging mechanisms, improving foreign exchange risk disclosures, and developing more robust macroprudential frameworks may help mitigate abrupt market reactions. From an investment perspective, understanding the short-term sensitivity of the financial market to exchange rate fluctuations may assist investors with timing their entry into the market, and making effective risk management decisions, particularly during periods of global economic uncertainty and challenges.

AUTHOR CONTRIBUTIONS

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Writing – reviewing & editing: Amiya Kumar Mohapatra, Debasis Mohanty, Aditya Prasad Sahoo, Shradha Gupta, Rajesh Kumar Panda.

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