

Returns, interest rate variations and changes in foreign exchange rates in Asia

David Umoru*

PhD in Economics, Professor
Edo State University Uzairue
Km7 Auchi-Abuja Rd., Iyamho, Nigeria
<https://orcid.org/0000-0002-1198-299X>

Beauty Igbiovvia

PhD in Economics, Lecturer
Edo State University Uzairue
Km7 Auchi-Abuja Rd., Iyamho, Nigeria
<https://orcid.org/0009-0005-6820-1110>

Timothy Igbafe Aliu

Postgraduate Student
Edo State University Uzairue
Km7 Auchi-Abuja Rd., Iyamho, Nigeria
<https://orcid.org/0000-0002-1920-6901>

Abstract. The aim of the paper was to resolve the contradictory findings on exchange rate variability and stock returns on the basis of comparative evidence from Asian markets with interest rate variation serving as a moderator of the observed effect. The study applied the quantile and Bayesian Vector Autoregression technique from 2000 to 2023. The findings suggest that currency rate volatility and interest rate risk are two market risk variables that have a large and negligible direct influence on stock return, particularly over the long term. The results demonstrated a significant positive relationship between variations in exchange rates and return on assets, the latter being established at the medium to higher quantile of exchange rates. Return on assets reacts favourably to shocks related to interest rates and exchange rates. This may suggest that stock markets with substantial international operations are robust enough to withstand the volatility and risk brought on by currency rate swings. The results indicate that interest rate variations, which are favourable to the market, have a positive effect on returns. It implies that banks are motivated to extend credit to more people. When these factors move in same direction, there is a low sentiment in the market, a low risk and positive investor behaviour. Additional quantification of the magnitude and direction of volatility spillovers between exchange rates and stock returns show how these linkages are dynamic and vary depending on nations, time periods and market. The interdependence of exchange rate changes and stock returns within the larger financial ecosystem is highlighted by the volatility spillover that influences economic policy decisions, risk management techniques and investment strategies. The study concluded that during the analysed periods in Asia, the market risk variables taken into account in this model are important and substantial predictors of return on assets

Keywords: risk; quantile regression; fluctuations; credit; volatility; financial crisis

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*Corresponding author



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● INTRODUCTION

Due to currency volatility, exchange rate risk is now considered one of the primary issues with foreign portfolio diversification. Risk of losing money (financial losses) due to hostile and unfavourable fluctuations in exchange rates is commonly referred to as exchange-rate risk or currency risk. Currency risk exposes investors and business owners, who operate internationally and have assets to financial losses. Higher profits are among the advantages of a stable currency and a reduced risk profile from foreign portfolio diversification. Thus, managing exchange rates and currency volatility are crucial aspects of portfolio management, which is the primary focus of this research. Currency risk can result in erratic gains and losses. Foreign exchange or currency risk can be divided into three categories: the risk that occurs when the exchange rate changes before the deal is finalised (transaction risk); the currency risk, with which a vulnerability to exchange rate swings lower than a company's market value (economic risk); the currency risk associated with a business, retaining a sizable amount of its assets, liabilities, or stocks in foreign currencies (translation risk).

In this sense, J.W.M. Mwamba *et al.* (2019) demonstrated that when looking for advantages from foreign portfolio investment and international diversification, African investors face with significant currency rate risk. Hence, when there is less currency fluctuation, greater diversification worldwide yields higher returns at lower risk. The succession of local currency depreciations in major regional economies over the past two years has shown that foreign exchange is likely the most important component of the risk equation for any organisation. H. Napitupulu & N. Mohamed (2023) pointed out that the unanticipated COVID-19 epidemic increased stock market volatility and extreme price shocks since the markets are vulnerable to events that limit investors' mobility. The results obtained by A. Gbadebo (2023) suggest that share prices respond positively to positive shocks in exchange rates in one-way, whereas share prices do not react negatively to negative changes in exchange rates. This implies that the depreciation of the naira serves as a motivator for investors to engage in more stock market trading. According to C. Chikwira & J.I. Mohammed (2023), there is a considerable positive link between growth success and the stock market.

According to C. Urom *et al.* (2023), energy markets are the main sources of shocks and have poor connections with other markets. The analysis also showed that equity markets in France and South Africa communicated the highest volatility spillover. S.R.M. Ali *et al.* (2022) examined the connection between oil and stock market volatility and discovered that the returns of both markets were positively correlated. The findings further revealed that the currency rate, stock market and oil market all supported co-movement. S.A. Nusair & D. Olson (2022) presented scientific evidence supporting the connection that runs from stock prices and exchange rates in the G7, apart from the Italian economy. Using the spillover index, I. Jebabli *et al.* (2022) studied volatility spillovers between the global energy market and the stocks markets. They realised that the energy industry was impacted by global equities markets. After conducting research for the BRICS, K. Rai & B. Garg (2022) came to the conclusion that during the pandemic, an increase in stock returns had a negative impact on the changes

in exchange rate. Y. Li *et al.* (2021) also proposed compelling evidence of COVID-19 fatality instances. The stock market responds to patients' deaths more than to their recoveries. Using the VAR-GARCH technique, B. Aydogan *et al.* (2024) examined the spillover between cryptocurrency and stocks in seven developing nations and the G7. The study discovered significant return and volatility spillover between cryptocurrencies and G7 stock markets, with most developing countries experiencing unidirectional spillover and most G7 markets experiencing bidirectional spillover.

The purpose of this research was to evaluate empirically how stock returns react to changes in foreign exchange rates and interest rates in Asia countries. The significance of this study derives from the fact that the research focuses on the analysis of volatility connectivity and spillover rather than their causation. The research has looked into the relationships and spillovers of volatility between exchange rates and stock price returns in Asia countries. The volatility of "giver" and "receiver" has been measured. As it can be seen from the analysed literature, a lot of attention is paid to the study of exchange market or stock market connection. Stock market and exchange rate volatility have been measured, and potential correlations between financial markets in Asia have been examined. Additionally, the volatility connection between exchange rates and asset returns, which has not been extensively studied in the past, has been explored.

● LITERATURE REVIEW

The international Fisher effect theory and the portfolio theory provide the theoretical foundation for the relationship between the foreign exchange and stock markets. The co-movement of stocks and exchange rates can be explained by both theories; however, they may have an impact on a market at the same time. International Fisher effect theory upholds that currency rate fluctuations throughout time are based not on inflation rates but on market interest rates. The Fisher hypothesis simply states that as long as financial market arbitrage opportunities exist, which usually occurs in the form of capital flows, real interest rates are the same across nations. Real interest rate equality eventually leads to a slow drop in the real value of the country's currency since the country with the higher interest rate is supposed to have a greater inflation rate as well. The interest rate theory of exchange rate predictions explains the connection between foreign currency rates and comparative interest rates.

Exchange rate changes are sometimes reflected in the nominal interest rate differentials between two nations. Interest rate parity theory upholds the idea that changes in two nations' currency exchange rates balance out differences in interest rates. According to this hypothesis, when two countries have different interest rates, the difference in forward and spot exchange rates is also present. Interest rate parity, which links interest rates, spot exchange rates and foreign exchange rates, is crucial to the operation of foreign currency markets. R. Aydin *et al.* (2024) validated portfolio theory for the BRICS, excluding China, prior to the pandemic; nevertheless, the same authors could only establish the traditional theory for the Chinese stock market. For the G7 countries, S.A. Nusair & D. Olson (2022) found evidence in favour of the portfolio balancing approach over

the long term. The crux of the PBT is an inverse relationship between interest rates and stock prices based on the idea that falling stock prices lead to declining wealth, which in turn causes capital outflows and currency devaluation since falling money demand also lowers interest rates.

N.Mwenda Mutwiri *et al.* (2021) investigated the performance of the Kenyan stock market and systematic risk. The efficient market hypothesis, APT, and integration analysis served as the study's pillars and were used to determine the correlations between its variables. The analysis revealed a strong, long-term positive correlation between Kenya's stock market performance, inflation and interest rates. For the sake of investors, the research recommends investment businesses and financial analysts to forecast future stock exchange performance using historical data on the rate of 91 Treasury notes and inflation. Bidirectional volatility spillovers across the global equities, gold and energy markets were identified by M.M. Elgammal *et al.* (2021). Substantial evidence of volatility connectivity and spillover in the worldwide exchange market has been discovered by I.O. Fasanya *et al.* (2021). In their investigation of the connections and spillover between the oil, stock and foreign exchange markets, E. Bouri *et al.* (2021) discovered spillover between these asset markets. K. Morema & L. Bonga-Bonga (2020) discovered a notable correlation between the volatility of the gold and equities markets in Africa, as well as between the equity market in South Africa and crude oil.

From 2000 to 2016, D.F. Kassi *et al.* (2019) examined how market risk affected the financial performance of companies listed on the Casablanca exchange. The differenced and system GMM methodologies, as well as panel regression with fixed and random effects, were used. The findings suggested that the financial performance of 31 firms, taken into consideration in the sample, was significantly negatively impacted by several indicators of market risk, including the degree of financial leverage, the gearing ratio and the book-to-market ratio. From 2015 to 2007, considerable influence of market risk indicators on the return on Indonesian stocks was reported by T. Farlian *et al.* (2019). The Chow test technique and the common effect were applied. Earlier researches investigating the relationship between foreign exchange and stock markets primarily used linear regression approaches and models, disregarding the possibilities of cross-variable dynamics that enables interactions. This is due to the fact that financial economics encompasses a variety of related topics, including exchange rate passed on effects, interdependence and co-movements in financial markets, transmission effects of currency crises and volatility spillover.

● MATERIALS AND METHODS

The Bayesian vector autoregression (BVAR) model is used to evaluate the stock return effects of exchange rate and interest rate changes in Asian countries. The SBVAR model combines panel data with traditional VAR models. It is widely used in several sectors. Similar to the traditional VAR model, the SBVAR model considers each variable in the system to be endogenous. Panel data analysis, which can regulate the individual variability that is not discovered, is another advantage. This suggests that the SBVAR model may capture the relationship between economic variables more accurately and distinctly. Additionally,

variance decompositions have been performed using the BVAR model. In real-world applications, a BVAR model with excessive delays has less freedom and a larger chance of multicollinearity. To avoid this, a number of lags in the model were fixed using the Schwarz's Information Criterion (SIC), the Akaike's Information Criterion (AIC) and additional lag length selection criteria. In this paper, the lag order and duration in this model were estimated using the Akaike, Bayesian, and Hannan-Quinn information criteria. This criterion was selected due to its ability to yield more consistent and durable outcomes. Basing the methodology on the asset pricing model that is applicable to scenarios in which foreign variables, common to all or specific asset classes, are mixed with local variables that effect exclusively domestic markets, the information, used to identify the BVAR model, was chosen based on the characteristics that the economies of the Asia nations are most affected by. The estimated model is derived from the return-generating process for a portfolio in terms of a particular reference currency, which is a linear function of exchange rate and interest rate:

$$ROA_t = \beta_0 + \beta_1 EXR_t + \beta_2 INTR_t + e_t, \quad (1)$$

where ROA is the return on assets in Asia pacific; EXR is the real exchange rate volatility; and $INTR$ is the short-term interest rate. The standard VAR model is specified as:

$$X_t = c + \sum D_i X_{t-i} + e_t, \quad (2)$$

where X_t is a $K \times 1$ vector of response variables in period t ; D_i is the coefficient matrix of the i^{th} lag of X_t . The relevant BVAR model to capture the interactions amongst exchange rate, ROA inflows and interest rate is thus specified as:

$$ROA_t = \alpha_0 + \sum_{j=1}^p \alpha_{j-1} ROA_{t-i} + \sum_{j=1}^p \alpha_{j-2} EXR_{t-i} + \sum_{j=1}^p \alpha_{j-3} INTR_{t-i} + \mu_{1t}; \quad (3)$$

$$EXR_t = \beta_0 + \sum_{j=1}^p \beta_{j-1} EXR_{t-i} + \sum_{j=1}^p \beta_{j-2} INTR_{t-i} + \sum_{j=1}^p \beta_{j-3} ROA_{t-i} + \mu_{2t}; \quad (4)$$

$$INTR_t = \gamma_0 + \sum_{j=1}^p \gamma_{j-1} INTR_{t-i} + \sum_{j=1}^p \gamma_{j-2} ROA_{t-i} + \sum_{j=1}^p \gamma_{j-3} EXR_{t-i} + \mu_{3t}. \quad (5)$$

The robustness of the BVAR model estimation was ascertained on the basis of quantile regression estimations. The α -quantile of the ROA in a nonparametric context may be expressed as follows, initially:

$$ROA_t = \beta^\alpha EXR_t + \beta^\alpha INTR_t + \varepsilon_t^\alpha, \quad (6)$$

where ROA , EXR and $INTR$ represent return on assets, exchange rate and interest rate. The linearisation of the coefficient vector was based on the first-order Taylor expansion of β^α around EXR^u and $INTR^u$ which generates the following equations:

$$\beta^\alpha(EXR_t) = \beta^\alpha(EXR^u) + \beta^\alpha(INTR^u)(INT_t - EXR^u); \quad (7)$$

$$\beta^\alpha(EXR_t) = \beta_0(\alpha, u) + \beta_1(\alpha, u)(INT_t - EXR^u). \quad (8)$$

Equation (8) can be substituted with equation (7) to get the following equation:

$$ROA_t = \beta_0(\alpha, u) + \beta_1(\alpha, u)(INT_t - EXR^u) + \varepsilon_t^\alpha \quad (9)$$

Equation (9) captures the connection between the α^{th} quantile of exchange rate and interest rate and the u^{th} quantile of the ROA, given that β_0 and β_1 are reciprocally indexed in α and u . Accordingly, the estimated values of α and u were used in equation (10) respectively:

$$\min_{b_0, b_1, \sum_{t=1} \partial_\alpha (ROA_t - b_0, -b_1 (INT_t - EXR^u)) G(F_n EXR_t - u), \quad (10)$$

where ∂_α represents the tilted absolute value, which provides the α -conditional quantile of ROA_t as a solution. The sample of 20 Asia stock markets in the study includes the stock markets of Bangladesh, India, Pakistan, Sri Lanka, North Korea, Singapore, China, Taiwan, Malaysia, Cambodia, Thailand, New Zealand, Indonesian, Maldives, Mongolia, Vietnam, Philippines, Australian, Russia and Japan. The World Trade Organisation (2024) and United Nations Conference on Trade and Development (Free access..., n.d.; The trade data..., n.d.) were the major sources of the research data. The covered period is from 2000 to 2023. The interest rate variable was calculated as the variation in the short-term rate of the central monetary authorities. The foreign exchange rate changes were calculated as the percentage change in the bilateral exchange rate measure.

Since the US dollars is the currency that is traded most frequently worldwide, the value of each currency in the Asiatic nations included in the study was measured in relation to the US dollars, which was used to determine the percentage change in the bilateral exchange rate measurement. Hence, the percentage changes were obtained in the BDT/USD, INR/USD, PKR/USD, LKR/USD, KPW/USD, SGD/USD, CNY/USD, TWD/USD, MYR/USD, KHR/USD, THB/USD, NZD/USD, IDR/USD, MVR/USD, MNT/USD, VND/USD, PHP/USD, AUD/USD, RUB/USD and JPY/USD. The rationality behind the use of the bilateral exchange rates was the daily exposure of businesses and consumers to these rates

when making travel-related purchases, ordering goods and services from other nations, purchasing input from international markets, and signing agreements to export their goods and services abroad. Return on a stock was calculated as the difference between the current price of the most traded stock and the immediate former price of the stock in each Asian market is divided by the stock's immediate former price multiplied by 100. The calculation was done iteratively in order to account for longer time periods. Augmented Dickey-Fuller (ADF), panel unit root (IPS), Perdoni co-integration and Pairwise Granger causality tests were also conducted.

● RESULTS

Selected series were descriptively tested to ensure that they followed a normal distribution. The descriptive statistics results are shown in Table 1-3 for returns exchange rate and interest rate respectively as follows: each series' average (i.e., mean and median) in Table 1 above demonstrates a high degree of consistency. None of their values were too high or low, which served as evidence for this. When it came to how the selected series were distributed around their average, almost all of them were distributed quite equally. This was demonstrated by the low standard deviation values that each series possessed. As a result, the series lacked truly large values. Every single variable had a positive skewness statistic. Given that each series was symmetrical around the mean, the coefficient of skewness suggests that they were all very close to having a normal distribution. The kurtosis values of each variable were more than 3. This suggested that they were all fairly distributed. At the 5% level of significance, the Jarque Bera statistics for the return series showed that all the variables were not normally distributed since the pro-value was less than 0.05. The results also show that the kurtosis of the distribution of return is greater than 3 meaning that stock market return of all countries is not normally distributed.

Table 1. Descriptive statistics for ROA

Countries	Mean	Skewness	Jarque-Bera	Std. deviation	Kurtosis
Bangladesh	13.0467	1.386	124.587	4.73377	3.39213
India	10.0699	0.356	179.585	5.033917	2.45758
Pakistan	10.9365	5.387	123.489	4.147537	6.44638
Sri Lanka	14.1143	1.289	190.487	3.253622	9.13422
China	10.7955	0.948	176.489	1.813415	3.42306
Taiwan	11.9871	0.187	166.380	2.713514	3.41891
Japan	19.5141	1.267	120.346	1.733901	8.43258
Malaysia	16.3479	1.387	190.347	1.753104	7.9344
Cambodia	14.2529	1.938	145.387	3.190895	8.38456
Thailand	13.3466	1.224	129.300	2.990663	8.86787
New Zealand	10.1306	1.763	188.256	1.888456	9.34234
Indonesian	15.8946	1.092	199.367	3.729956	9.82245
Maldives	17.3558	1.284	144.367	3.915112	10.3245
Vietnam	18.4193	1.654	123.346	3.755022	9.16666
Russia	11.1277	1.902	190.267	3.041525	7.25833
Philippines	13.5641	1.327	189.367	3.571426	4.3568
Australia	10.1423	0.387	100.373	3.592145	5.44167
North Korea	11.0145	0.445	122.346	4.137363	7.53333
Singapore	19.5001	0.192	135.287	3.338271	9.62589
Mongolia	19.2896	1.387	187.267	4.077459	2.71666

Source: created by the authors

Table 2 shows the exchange rate volatility of all countries. The volatility in the exchange rate of Malaysian Ringgits is the highest with a standard deviation of 112.733901, followed by Indian Rupee and Thai Baht with volatility of

110.05363 and 33.190895 respectively. The Chinese Yuan has the lowest volatility of a single digit of 9.098929. The kurtosis of Singapore is normally distributed since their kurtosis value is less than 3, i.e. 1.071432.

Table 2. Descriptive statistics for *EXR*

Countries	Mean	Skewness	Jarque-Bera	Std. deviation	Kurtosis
Bangladesh	21.306573	0.457612	12.172500	21.045201	6.977792
India	61.123786	0.486592	123.75190	110.05363	3.795228
Pakistan	21.123983	0.515571	110.96160	22.053045	2.914132
Sri Lanka	71.124190	0.544551	134.94540	23.053342	2.928003
China	21.326146	0.57353	121.07030	9.098929	3.056633
Taiwan	22.000000	0.576191	146.00002	17.000000	25.78090
Japan	31.88395	0.578852	100.07005	11.34840	3.817673
Malaysia	22.403678	0.581513	111.733901	112.733901	9.459200
Cambodia	33.832343	0.584174	113.753104	13.753104	3.248800
Thailand	40.698363	0.586834	123.190895	33.190895	6.248800
New Zealand	41.713812	0.589495	122.990663	12.990663	11.248800
Indonesian	33.102332	0.592156	161.888456	31.888456	10.588200
Maldives	31.903075	0.594817	113.729956	23.729956	2.0000005
Vietnam	22.732926	0.597478	156.915112	26.915112	14.82003
Russia	17.030536	0.600139	199.755022	13.755022	7.214293
Philippines	16.5920868	0.603833	124.041525	14.041525	6.428572
Australia	19.253379	0.607528	113.571426	27.571426	15.64286
North Korea	19.599323	0.611222	167.592145	29.592145	4.857152
Singapore	18.674762	0.614917	189.137363	24.137363	1.071432
Mongolia	16.984415	0.618611	123.338271	25.338271	3.285712

Source: created by the authors

Table 3 shows the interest rate volatility results of all countries. The Pakistan has the highest volatility in interest rate with a standard deviation of 97.74769. The average rates of Japan, North Korea and Singapore are negative.

The implication is that banks are encouraged to lend more. Similar to this, businesses and consumers are drawn to the very low cost of borrowing to ease businesses and this goes a long way to increase investment expenditures.

Table 3. Descriptive statistics for *INTR*

Countries	Mean	Skewness	Jarque-Bera	Std. deviation	Kurtosis
Bangladesh	17.04991	2.218530	128.50	25.41591	1.887133
India	12.16513	1.863000	158.800	34.81709	1.616117
Pakistan	5.566063	2.381717	374.840	97.74769	54.73799
Sri Lanka	23.81629	2.568400	127.520	44.19648	45.47097
China	7.020982	8.014310	493.890	5.16843	2.875120
Taiwan	13.32735	1.831267	877.380	22.33962	1.891009
Japan	2.434138	4.222402	142.02	56.60517	3.287907
Malaysia	20.25127	3.069062	132.54	13.77857	2.9309
Cambodia	16.29240	1.346505	141.772	17.25714	6.187029
Thailand	6.27121	41.92525	152.004	20.73571	1.4111
New Zealand	-13.58754	3.78133	172.236	24.21429	-2.891078
Indonesian	31.48709	7.385528	122.468	27.69286	1.1810345
Maldives	5.466435	0.161560	182.712	31.17143	7.002164
Vietnam	13.84138	14.00937	142.75	14.01865	6.454617
Russia	4.099958	4645.183	102.816	35.66667	1.525560
Philippines	10.02946	0.000000	173.875	36.68333	12.34874
Australia	8.294092	2.820468	192.933	23.48951	2.691256
North Korea	-5.4828943	5.007325	123.991	30.54582	1.289723
Singapore	-2.3802873	11.3873	128.052	21.48464	
Mongolia	7.3673442	9.36745	124.591	29.46759	

Source: created by the authors

The results of unit root test are shown in Table 4. Table 4 above presents the unit root result for the ADF and

IPS test, which was calculated using intercept and trend. It shows that the exchange rate became stationary after the

first difference I(1), while the return on assets and interest rate were stationary at levels I(0), using a maximum 5% threshold of significance. The cointegration test must be performed to ascertain whether a long-term relationship

exists since the I(0) and I(1) variables have been mixed together. Table 5 results showed that most tests had probabilities less than 0.5%, which allowed accepting the hypothesis of cointegrating relation amongst the variables.

Table 4. Unit root results

Variables	ADF	First difference	IPS	First difference	Remarks
	Levels		Levels		
ROA	9.1651** (0.0004)	–	–1.72889 (0.0419)	–	1(0)
EXR	1.98257 (0.2002)	130.11* (0.0001)	0.27152 (0.6070)	3.19809** (0.007)	1(1)
INTR	189.544* (0.0000)	–	–223.06557* (0.0000)		1(0)

Note: *(**) significant at 1% (5%)

Source: created by the authors

Table 5. Perdoni cointegration test result and Pairwise Granger causality test

Statistics	Statistic	Prob.
Group RHO statistic	0.286601	0.008
Group PP statistic	–2.191460	0.002
Group ADF statistic	0.552223	0.006

Source: created by the authors

At 1%, 5%, or 10% level of significance, accepting the null hypothesis implies that there is no causal relationship between the variables, while rejecting it implies that no variable truly Granger causes the

other (Table 6). This is used to show the way in which the rising commercial activity of international and local investors in developing nations is leading to the causality emissions.

Table 6. Pairwise Granger causality test results

Null hypothesis	Obs	F statistic	Prob.
EXR does not Granger cause ROA	839	0.04185	0.9590
ROA does not Granger cause EXR		0.14622	0.8640
INTR does not Granger cause ROA	839	0.08308	0.9203
ROA does not Granger cause INTR		0.08118	0.9220
INTR does not Granger cause EXR	839	0.10159	0.9034
EXR does not Granger cause INTR		0.08587	0.9177

Source: created by the authors

This suggests that the degree of production activities is considerable enough to induce ROA, which validates the study's results that EXR and ROA have a positive

relationship. The general economic activity of the nation is what drives the investment seen in the nations of Asia Pacific. Table 7 illustrates the selection-order criteria.

Table 7. Selection-order criteria

Lag	Log of lags	Likelihood ratio	Final prediction error	Akaike information criterion	Hannan-Quinn information criteria	Schwarz-Bayesian information criteria
0	–29,961.95	NA	7.54e + 28	75.00613	75.02371	75.01288
1	–27,769.39	4363.152	3.19e + 26	69.54041	69.61075	69.56743
2	–27,555.57	423.8961*	1.91e + 26*	69.02772*	69.15081*	69.07501*
3	–27,549.44	12.10453	1.92e + 26	69.03490	69.21075	69.10246

Source: created by the authors

Table 8 indicates that, within a narrow range of 100.00%, the fluctuations in exchange rates contributed to 0.00 to 0.019% of the variation in return on assets, which is generally considered to be a negligible portion. The fact that this ratio seems to be relatively small implies that certain large public investments with delayed economic consequences may have been motivated by a different exchange rate regime. Over the long term, interest rates had a

bigger impact on the variation of return on assets than exchange rates. Nevertheless, with a positive value range, the contributions of the interest rate and currency rate components appear negligible. This demonstrates a significant impact of foreign events on the economies of these continents. An excessive dependence on external factors outside the system might seriously damage the economy and make it more susceptible to shocks from outside sources.

Table 8. BVAR forecast error variance decomposition results of ROA

Variance decomposition of ROA				
Period	S.E.	ROA	EXR	INTR
1	5.37E+09	100.0000	0.000000	0.000000
2	5.99E+09	99.99843	0.001001	0.000568
3	7.35E+09	99.99707	0.000665	0.002263
4	8.16E+09	99.99733	0.000545	0.002129
5	9.13E+09	99.99682	0.000501	0.002676
6	9.96E+09	99.99668	0.000537	0.002788
7	1.08E+10	99.99626	0.000720	0.003022
8	1.16E+10	99.99585	0.001012	0.003143
9	1.24E+10	99.99528	0.001443	0.003276
10	1.32E+10	99.99463	0.001999	0.003372
Variance decomposition of EXR				
Period	S.E.	ROA	EXR	INTR
1	376.1175	0.005890	99.99411	0.000000
2	519.8602	0.003737	99.99514	0.001127
3	634.8596	0.003004	99.98947	0.007529
4	734.1258	0.004593	99.98336	0.012044
5	823.4512	0.009404	99.97510	0.015494
6	905.8253	0.017228	99.96476	0.018008
7	983.0464	0.028561	99.95154	0.019902
8	1,056.292	0.043423	99.93521	0.021367
9	1,126.383	0.062108	99.91536	0.022534
10	1,193.922	0.084752	99.89176	0.023487
Variance decomposition of INTR				
Period	S.E.	ROA	EXR	INTR
1	6.780775	0.109191	0.014776	99.87603
2	6.897255	0.105642	0.017052	99.87731
3	6.935274	0.105286	0.016868	99.87785
4	6.939097	0.108597	0.017036	99.87437
5	6.939921	0.113307	0.017436	99.86926
6	6.940213	0.118793	0.017931	99.86328
7	6.940452	0.124786	0.018472	99.85674
8	6.940696	0.131167	0.019035	99.84980
9	6.940951	0.137921	0.019612	99.84247
10	6.941218	0.145039	0.020199	99.83476

Source: created by the authors

Return on assets is insignificantly related to changes in the exchange rate. According to impulse response function in Table 9, a positive influence on one variable might

have a positive or negative level effect on another (Fig. 1). In terms of short-term analysis, exchange rate shocks and interest rate shocks, ROA reacts positively.

Table 9. BVAR impulse response of ROA

Period	ROA	EXR	INTR
1	5.376709	0.000000	0.000000
2	2.6648709	-18,940,706	-14,269,797
3	4.2538709	498,225.6	31,892,940
4	3.562309	-1,999,631.3	14,060,142
5	4.093009	7,397,729.3	28,509,171
6	3.982909	10,725,980	23,118,157
7	4.212009	17,596,120	27,711,049
8	4.2628909	22,908,618	26,706,638
9	4.422909	29,397,543	28,621,343
10	4.5220909	35,617,783	28,976,573

Source: created by the authors

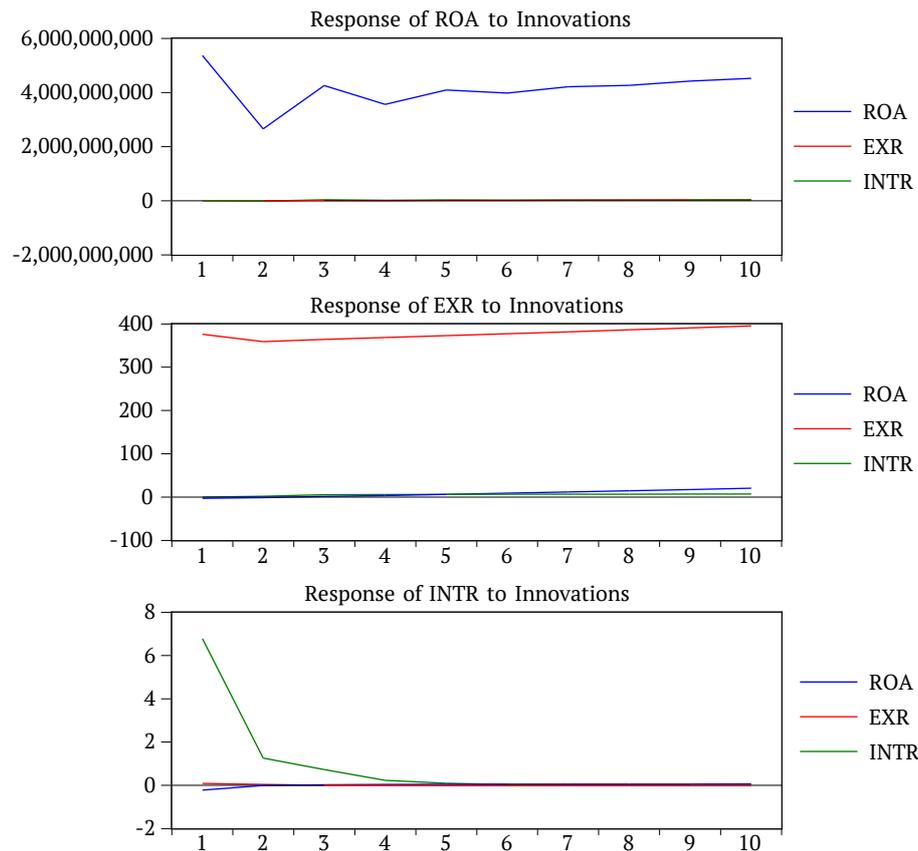


Figure 1. BVAR impulse response

Source: created by the authors

This could suggest that stock markets with significant international operations have the resilience due to hedging to withstand the risk and uncertainty that characterised exchange rate movements. The findings corroborate those of E. Endri *et al.* (2021), who previously reported strong positive effect of the changes in interest rates on stock returns in emerging economies. Negative changes in interest rates are indeed market friendly and it positively affects stock prices and exchange rates simultaneously, leading to higher return. It implies that banks are motivated to extend greater credit. In a similar vein, consumers and businesses are driven to the extremely low cost of borrowing to facilitate businesses, which significantly raise investment return. All these result in low market sentiment, low risk appetite and investor behaviour, aligned in a positive direction. Accordingly, exchange rate risk is priced in equity markets. This is the outcome of the research conducted by L. Bonga-Bonga & S. Mpoha (2024), where the generalised linear model regression, a two-stage model estimation technique was executed, and it was discovered that the South African equities market requires a greater risk premium than the US equity market. Findings vary based on time periods, countries and specific market conditions, highlighting the dynamic and evolving nature of these relationships. Volatility spillover between stock returns and exchange rates underscores their interconnectedness within the broader financial ecosystem, impacting investment strategies, risk management practices and economic policy decisions.

Taking into account the abovementioned, this study has identified three key patterns in the connectivity of financial market volatility. There is a considerable interdependence between the stock and foreign exchange markets in Asia. The authors think there is a variety of explanations for this high correlation. For instance, as a result of bilateral connections and economic cooperation, the economies of Russia and India have grown more intertwined (Mukherjee *et al.*, 2022). Increased economic activity has taken place between Russia and India as a result of the two nations' strengthening economic links, the opening up of the Indian economy and the growth of Russian financial markets. Likewise, the findings indicate that there is a substantial correlation between volatility and financial markets in Africa. The fact that Africa has strong political and economic linkages may perhaps be the driving force behind such results. Particularly, the multinational companies operating in the African Economic Community of West African States have partnerships and joint ventures (Diko & Sempijja, 2021), leading to cross-border financial transactions and investments. The financial markets in both nations have seen remarkable growth, which has enhanced bilateral and international investment between them. *BVAR* impulse response of *ROA* can be seen in Table 9.

Table 10 combined the lower and upper quantiles of the interest rate (0.10-0.90) with the lower and upper quantiles of the exchange rate (0.10-0.90) to illustrate the impact of varying exchange rates on returns at various conditional distribution levels. From the medium quantile to the higher

quantile of the exchange rate (0.40-0.90), there is a substantial and significant influence of the exchange rate on return on assets. However, at the lower quantile of the exchange rate (0.10-0.30), the degree of the exchange rate's

beneficial effect on return on assets diminishes. Ultimately, it can be pointed out that the exchange rate exhibits a positive impact at all quantiles (low, medium and high) with the strongest positive influence occurring at lower quantiles.

Table 10. Results of the quantile regression

Explanatory variable	10 th	20 th	30 th	40 th	50 th
<i>EXR</i>	1.05	1.45	0.425	3.925**	17.35**
<i>INTR</i>	4.63	3.94	0.10	-0.02	-0.92
Constant	-0.83	-1.22	-0.25	-1.28	-1.65
Explanatory variable	60 th	70 th	80 th	90 th	
<i>EXR</i>	29.96**	5.07**	52.65**	11.22**	
<i>INTR</i>	0.13	0.68	3.34**	10.63**	
Constant	-0.32	0.39	2.91**	15.94**	

Note: (***), (**) and (*) indicate significance at 1%, 5% and 10%, respectively

Source: created by the authors

Additionally, the analysis demonstrates that the interest rate is substantial at the upper quantile (0.80-0.90). This implies that the return on assets in Asia due to changes in exchange rates and interest rates remunerates the markets. According to the findings at the quantile, Asian stocks are mostly net transmitters (receivers) of shocks. There are notable increases with the start of the Russia-Ukraine war and the pandemic, which occurred around November 2021. On the other hand, the majority of financial assets

and commodities are net receivers. The switching between net transmitters and receivers of shocks is significantly more prominent at the tail-end distribution of the quantile connectivity than it is at the median quantile. Nonetheless, with this distribution, certain markets are reliably net receivers/transmitters. For instance, exchange was a significant shock transmitter at the fifth quantile. The quantile regression coefficients in Table 11 were compared, which displayed the symmetric quantile results.

Table 11. Symmetric quantiles test results

Test Summary	Variables	Chi-Sq. statistic	Chi-Sq. d.f.	Prob.
Wald Test		53.95121	3	0.0000
Quantiles		Restr. value	Std. error	Prob.
0.25, 0.75	<i>EXR</i>	-133,626.9	37,320.83	0.0003
	<i>INTR</i>	4,119,102.0	1,965,871.0	0.0361
	C	1.23E+08	18,993,628	0.0000

Source: created by the authors

In both the lower and upper quantiles, a bidirectional causal relationship between the exchange rate and asset returns was found. Overall, the findings demonstrated bidirectional causation, which holds those changes in the exchange rate influence return on assets and vice versa. There are a few noteworthy findings. Most of the currencies demonstrated strong sensitivity to at least one of the two volatility measures, even after accounting for the typically large impacts of dollar and yen fluctuations. Compared to the more volatile index, estimated sensitivities to the composite index often have a higher statistical significance. It is important not to exaggerate the distinctions between the two sets of estimated sensitivity, though. Second, as volatility increases, the yen tends to climb versus the dollar due to its negative sensitivity to the volatility indicators. Conversely, developing market currencies typically see a decline in value when volatility is high. The Australian, Indonesian, Korean, New Zealand, and Philippine currencies exhibit particularly high levels of sensitivity to fluctuations in global volatility as compared to other currencies in the Asia region. Under the flexible exchange rate system (market forces), the monetary authority is expected to have a modest role in stabilising the market rate. The central bank

frequently intervenes in the foreign exchange market because maintaining this regulation would have significantly changed the country's destiny. As a result, there are now fewer incentives for private banks and investors to engage in arbitrage, or speculative activity, and more credit is available to the economy's real sector, promoting growth and development.

Conversely, the exchange rate had little effect on returns in the BVAR results. The outcome demonstrated that whereas interest rate variations have large and favourable influence on returns, currency rates have negative impact on returns. This suggests that a unit change in this variable lowers return in the short term and considerably lowers return in the long term. The research findings thus revealed that while integrating markets tended to increase returns, currency exchange had a negative impact on each market separately. Thus, it may be concluded that portfolio return yield is improved by diversity. The findings demonstrated the need for African investors to place a greater emphasis on certain Asian stock markets if they want to optimise their investments while accounting for exchange rate risk.

The study discovered that during the analysed periods in Asia, the market risk variables taken into account in this

model are important and substantial predictors of return on assets. Multinational corporations and investment managers that aim to achieve high returns at little risk seem to be concentrating mostly on international portfolios. When it comes to international portfolio diversification, exchange rate risk is crucial since financial assets are mostly denominated in other currencies are subject to exchange rate risk. The findings suggest that the Singaporean dollar and Chinese Yuan have a negative influence on portfolio performance due to volatility in foreign exchange rates. Additionally, it was observed that the volatility of the current period is negatively impacted by the results from all of the sample markets' prior periods. As a result, these stock markets are more vulnerable to the leverage effect, which suggests that negative news affects currency market volatility more than positive news does. It is also discovered that raising the model's shape parameter tends to enhance its performance, and that increasing the fatness and skewness of the left tails considerably lessens the influence of exchange rates.

As a result, the study suggests the following: in order to maximise their profits, rational investors may utilise fundamental analysis to examine the actions of these market risk variables prior to making any decisions on investments in the stock market or other financial markets. Determining the proper monetary policy decisions is a tough task for policymakers, as the effects of exchange rate volatility vary throughout companies. More importantly, this study's findings suggest that the influence of exchange rate fluctuations vary according to the condition of the stock market and the exchange rate. Consequently, policymakers might utilise the findings of this study to avoid making monetary policy decisions when they are not required. As this study's findings identify the slope coefficients at quantiles, regulators may mitigate the negative impacts of exchange rate volatility on listed businesses by determining when to interfere in the market. Foreign investors exposed to exchange rate risk would need to get higher yield compensation for holding local currency bonds when there is increased uncertainty about the future direction of the currency rate.

The proven empirical result is advantageous to investors and portfolio managers, as it can aid in taking action regarding stock market behaviour by providing knowledge of the dynamics between the two financial markets. Fund managers need to be cautious of fluctuations in interest and exchange rates in their search for the ideal portfolio. In order for protect market investors from the consequences of exchange rates spilling over into the stock markets, investors and portfolio managers need to actively manage and rebuild their portfolios in accordance with the state of the market. Stock market regulations like demutualisation and transparency should be implemented by stock exchange market authorities. In order to promote the growth in stock turnover, which contributes to stock return increase, it is advisable to improve stock market patronage, while minimising transaction costs and market uncertainty.

● DISCUSSION

The obtained results imply that Asia stocks are more resilient to market shocks in calm market conditions but more vulnerable in turbulent ones. This supports the idea that, especially in the post-COVID era, African stocks have

grown increasingly intertwined with international markets (Agyei & Bossman, 2023). In terms of diversification, stock returns show resistance to interest rate shocks in a variety of market conditions, which means that investors, looking to diversify their portfolio, should give these investments some thought. These results run counter to those of M. Omane-Adjepong & I.P. Alagidede (2021), who contend that cryptocurrency diversification is superior for Asia equity investments. According to the quantile results, the findings also demonstrate that interest rate risk has a non-substantial short-term impact on asset return before becoming important over the long term. This suggests that interest rates have a major catalytic influence on stock return in Asia not only in the long run but over the periods under study.

According to research by J.C. Odionye *et al.* (2023), a 3.68% interest rate differential threshold indicates that a large interest rate variation above the predetermined threshold results in an enormous inflow of foreign money into the country. Additionally, I. Haruna *et al.* (2023) discovered that a two-way directional nexus of the positive and substantial contribution of interest rates lags in explaining the fluctuations in the exchange rate of currencies. J. Hambuckers & M. Ulm (2023) provided empirical support for theories of currency crash risk on the role of interest rate changes or variations in the dynamic asymmetry of exchange rate changes. An increase in the monetary policy interest rate is known to appreciate currency rates, decrease stock prices and lower bond yields, according to empirical findings published by S. Indra & J.A. Cep (2022). T.Y. Liu & C.C. Lee (2022) observed a considerable nexus between variations in interest rates and changes in the currency exchange rates in the US and China. However, S. Mohammed *et al.* (2021) discovered that fluctuations in interest rates lead to instability in exchange rates. A strong positive association between variations in interest rates and exchange rate instability in emerging economies was also discovered by I. Haruna *et al.* (2023). In contrast to conventional carry trading techniques, J. Yung (2021) found out that interest rate variance plays a crucial role in explaining exchange rate changes that occur both within and outside of sample, especially over longer time horizons, and producing highly profitable currency portfolios.

Results obtained by A. Gashchyshyn *et al.* (2020) indicate that short-term fluctuations had significant positive impact on the changes in the currency exchange rate. The argument that market unpredictability is a reflection of stock market volatility, which significantly restricts portfolio investment management analysis, was reinforced by R. Chaudhary *et al.* (2020). T. Shoko *et al.* (2020) found robust scientific evidence of an uptrend between the currency exchange rate of Zimbabwe's economy and GDP growth, based on the ARDL model specification but they also revealed a negligible positive link between interest rate changes and GDP growth. Z. Xie *et al.* (2020) identified a causal link between stock prices and exchange rate returns in both industrialised and emerging nations. Markov switching model, which took structural breaks into account, was the basis for T.M. Karimo (2021) analysis, which provides evidence of the significant impact of interest rate differentials on foreign portfolio investment. According to A.O. Adewuyi & J.O. Ogbode (2019) and T.M. Karimo (2021), interest rate

changes and forward premium spot exchange rates are critical factors that explain capital mobility. According to S. Capasso *et al.* (2019), positive changes in the exchange rate result in reduced variation in interest rates in Mexico.

Following the collapse of the Bretton Woods system in 1971, the 1944 fixed exchange rate system was dismantled and replaced with a flexible exchange rate scheme, sometimes referred to as the Nixon shock. Globally, currencies have significantly increased in volatility. For instance, South Africa, which implemented a floating exchange rate system in March 1995, has similarly seen fluctuations in exchange rates over time (Thaba *et al.*, 2023). However, with the Asian currency crisis of 1997 and the Latin American crisis of 1994, exchange rate risk management started getting attention (Agarwal & Vandana, 2022). African businesses have faced a considerable rise in financial risks since the global financial crisis of 2007 and the Marikana strikes. In particular, currency risk has grown due to recent increases in major currency volatility. Given that the exchange rate is influenced by factors that also affect bond rates, evaluating the effect of exchange rate risk on local currency sovereign yields is not straightforward. Bond rates are influenced by investor risk preferences, worldwide variables shared by all EMEs and country-specific factors (Fathi *et al.*, 2024). Changes in inflation, local interest rates and sovereign credit risk in relation to other EMEs and major currency zones are examples of country-specific variables. Exchange rate fluctuations throughout the EMEs as a whole can be influenced by external shocks, interest rates in key currency regions and shifts in the risk appetites of international investors. This agrees with Z. Venter (2020) study, where a SVAR model was employed to examine the influence of monetary policy shocks on three proxies for financial market stability. The representation of monetary policy included policy rates for emerging market economies and shadow rates for advanced economies. The main findings from the research revealed that, in most cases, monetary policy rate was utilised to address asset mispricing, managed fluctuations in the real business cycle and curbed credit cycles. Additionally, the study indicated that, consistent with traditional economic wisdom, positive monetary policy shocks tend to result in the appreciation of local currencies in the majority of instances.

Mature financial markets may experience spillover effects that extend to developing markets. One rising nation's instability might potentially spread to the emerging economies nearby. For instance, the study results published by X. Hao *et al.* (2024) demonstrated that the time-varying sensitivity of African bond spreads to exchange rate movements and showed the dynamic effects of worldwide economic shocks on African bond investors. P. Engler *et al.* (2023) showed that monetary policy stance of the United States and economic news considerably influenced the financial conditions of emerging markets. Particular findings suggest that the principal channel with which the US economic news was transmitted internationally to emerging markets was through risk perception. Additionally, Y. Ying & D. Xinyu (2023) discovered that prior to COVID-19, developed markets most often sent jump risk to emerging markets. This supports M. Tumala *et al.* (2023) findings, which proved that greater percentage of risks associated with the Nigerian Stock Exchange were stimulated

by global shock. Additionally, the analysis demonstrated a robust association between the global financial crises heighten volatility and return spillovers.

Similarly, the findings of M. Khan *et al.* (2023) demonstrated that the stock markets of Taiwan and South Korea are two largest spillover transmitters in the Asian developing economies. Also, X. Zhou *et al.* (2022) discovered that developed capital markets had a sizable global risk spillover effect on the Chinese capital market during the era of financial crisis. A. Panda *et al.* (2021) findings demonstrated that during crisis situations, the Asia-Pacific equities markets experienced more spillover shocks. The findings of A. Shaghil *et al.* (2021) further support this, showing that higher US interest rates had generated spillovers to the economic activities of emerging market economies with stronger fundamentals, while such rates had harmful spillovers for vulnerable EMEs. On the other hand, all EMEs experienced a significant slowdown in activities as a result of US monetary tightening brought on by a more aggressive policy approach. Moreover, it has been observed that all through the last twenty-five years, spillovers from developing markets to grown economies have only accounted for 5% of those from developed to emerging markets (Liu & Arezki, 2021). The direction of causation between local currency sovereign yields and exchange rate risk presents another challenge. The authors' approach has been formed by the theory that local currency sovereign yields are causally related to exchange rate risk.

The findings of B.A. Nugroho (2021) and D.C. Yildirim *et al.* (2022) somewhat support the notion that Asia nations offer the highest risk reduction for foreign investors during the global financial crisis (GFC) and Employment and Social Development Canada (ESDC). China's restrictions on foreign capital flows, such as the limited influence that foreign investors have over shares on Chinese stock exchanges, may have contributed to the crisis's containment in other markets. Consequently, there may be a decrease in foreign investment, commerce and opportunities for cross-border liquidity. Considering how undeveloped the Asian markets are, compared to the size of their economies, these possibilities make sense. From the standpoint of the transmission route, the overall orientation of the arrows offers additional proof. The other markets appear to be ahead of the Asian markets when contagion is considered. Before the housing bubble of 2006, the US was the most significant market due to its domination over the markets in Asia and the strong interconnectedness over an extended period of time. The Chinese markets, however, do better than the US, according to the GFC and ESDC. It is clear and revealing how much exchange rate risk affects return on assets. Investors are the main forces behind employment and economic expansion. Therefore, it would seem that these industries can function better when the exchange rate is stable, which might lead to an increase in employment and higher economic production.

It suffices to outline that in Singapore, the monetary policy is intended at guaranteeing low and stable inflation. As a result, the intermediate goal of monetary policy set by the Singaporean central bank is the nominal value of the Singapore dollar. This is due to the fact that the exchange rate has a significantly greater impact on inflation than the sizeable portion of the economy's tradable sector. When

there are large short-term capital flows that would cause the nominal exchange rate to diverge from a level consistent with the inflation rate, the central bank of Singapore effectively uses consistent intervention in the foreign exchange market to carry out its monetary policy stance. Thailand has kept the Thai baht exchange rate under strict control since July 1997. The Thai baht was once linked to a currency basket (Wuthisatian, 2021). Since 2016, Malaysia, a small open economy, has used the ringgit as its internal currency under a floating exchange rate framework. Prior to this, the Asian financial crises of 1997-1998 led to the ringgit being fixed to the US dollar. In July 2005, following the crisis, Malaysia moved to a managed float exchange rate system. The ringgit does not track a peg, instead, the exchange rate is set in the interbank market.

Indonesia has maintained a free-floating exchange rate regime with the Indonesian Rupiah since August 1997 (Aggarwal & Jha, 2023). According to this system, the supply and demand of Indonesian Rupiahs on the foreign exchange market determine the exchange rate. Comparably, the controlled exchange rate floating system is used in Cambodia. When the Riel exchange rate deviates from the predefined range and becomes too volatile, the National Bank of Cambodia committee steps in to maintain the stability of the exchange rate. Amidst some crawling pegs, the Vietnamese government runs the managed floating system with a constant pace of depreciation of the Vietnamese dong. Vietnam had a system of several exchange rates up until March 1989, with separate rates applied to trade transactions. Presently, there are trade reforms that entail tariff rationalisation, lowering non-tariff barriers etc. Burma has recently adopted a system of multiple parallel currency rates following the imposition of foreign exchange restrictions by the State Bank of Vietnam that limited access to US dollars. These foreign exchange restrictions include licenses for trading foreign exchange to specific companies subject to approved conversion rates, mandatory surrender requirements for converting export revenue, limited options for citizens to purchase foreign exchange with a maximum of 500 USD, and a requirement for foreign nationals living abroad to remit home 25% of their foreign exchange income. However, these restrictions have also seriously distorted the foreign exchange markets.

Australia has had floating exchange rate system since 1983. Prior to this, Australia experienced several different regimes, one of which was a fixed exchange rate regime. Hong Kong Special Administrative Region uses a US dollar-based exchange rate system (Rathke *et al.*, 2024). Given that the Hong Kong Special Administrative Region is a small, open economy whose growth is impacted by external factors, adopting a currency board helps reduce exchange rate volatility and external risks. India's exchange rate strategy has evolved over time as the country's economy has progressively opened up since the early 1990s as part of a broader plan of macroeconomic reforms and liberalisation. Korea implemented a freely floating exchange rate system in 1997. The won exchange rate is freely determined by supply and demand. Rising inflation and exchange rate volatility led New Zealand's central bank to move from a fixed to a floating exchange rate regime in 1985 (Albagli *et al.*, 2020; International Monetary Fund, 2023).

The pace at which information is transmitted from the foreign market to the stock market and the reaction of investors to that information may be used to assess the effectiveness of the market. This will undoubtedly advance understanding of the nature of market efficiency that the financial market possesses and even advance understanding of behavioural finance. The research findings serve as a foundation for further research. More investigation into the relationship between the foreign exchange and stock market might lead to the possibility of hedging policies or arbitrage possibilities. Since there is evidence to suggest that exchange rates are good diversifiers in stock portfolios, even though the precise nature of their effectiveness is unknown, authors would advise further research on the subject. Just as commodity prices are influenced by price, exchange rates should likewise have an impact on supply and demand. This might be very useful information for commodity investors, as they will be able to more accurately predict future prices if they have a better grasp of how exchange rates affect supply and demand for certain commodities.

● CONCLUSIONS

The aim of this study was to evaluate how stock returns and associated risk premium react to changes in foreign exchange rates in order to resolve the contradictory findings seen in the literature. The data were analysed using quantile regression and BVAR method. According to the study results, two market risk variables that have a large and negligible direct influence on stock return are currency rate volatility and interest rate risk, respectively, particularly over the long term. Furthermore, currency rate risk becomes apparent only over a longer period. Return on assets responds favourably to exchange rate changes and variations in short-term interest rate. This may indicate that stock markets with sizable global operations are resilient enough to resist the risk and unpredictability associated with fluctuations in exchange rates, which may affect their stock values due to hedging expenses or operational concerns.

The findings suggest that market-friendly negative fluctuations in interest rates have a beneficial impact on returns. It suggests that banks have an incentive to give out more credit. Similarly, the incredibly low cost of borrowing to support enterprises that greatly increase investment return drives consumers and businesses. This research has certain boundaries. Given the financial market's dynamic and quickly changing nature, it is recommended to conduct a similar study in other financial markets and with a wider range of currencies. To further understand the magnitude and direction of the spillover effects, more advanced econometric models may be used, which will further increase the significance of this research. Analogous tests, conducted in developing, would be undoubtedly helpful to investors, who are particularly interested in diversifying their foreign portfolios.

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● CONFLICT OF INTEREST

None.

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Прибутковість, коливання процентних ставок та зміни валютних курсів в Азії

Девід Умору

Доктор економічних наук, професор
Університет штату Едо Узаїруе
Шосе Аучі-Абуджа, Км7, м. Іямхо, Нігерія
<https://orcid.org/0000-0002-1198-299X>

Б'юті Ігбіновія

Доктор філософії з економіки, викладач
Університет штату Едо Узаїруе
Шосе Аучі-Абуджа, Км7, м. Іямхо, Нігерія
<https://orcid.org/0009-0005-6820-1110>

Тімоті Ігбафе Аліу

Аспірант
Університет штату Едо Узаїруе
Шосе Аучі-Абуджа, Км7, м. Іямхо, Нігерія
<https://orcid.org/0000-0002-1920-6901>

Анотація. Метою статті було вирішити суперечливі питання щодо мінливості обмінного курсу та доходності акцій на основі порівняльних даних з азійських ринків, де варіація відсоткових ставок виступає модератором спостережуваного ефекту. У дослідженні було застосовано квантильну та байєсівську векторну авторегресію з 2000 по 2023 рік. Отримані дані засвідчили, що волатильність валютних курсів і процентний ризик є двома змінними ринкового ризику, які мають великий і незначний прямий вплив на прибутковість акцій відповідно, особливо в довгостроковій перспективі. Результати продемонстрували значний позитивний зв'язок між коливаннями валютних курсів і прибутковістю активів, водночас останній встановлюється у середньому та вищому квантилі валютних курсів. Дохідність активів позитивно реагує на шоки, пов'язані з відсотковими ставками та обмінними курсами. Це може свідчити про те, що фондові ринки зі значними міжнародними операціями є достатньо стійкими, щоб протистояти волатильності та ризикам, спричиненим коливаннями валютних курсів. Показано, що сприятливі для ринку коливання процентних ставок позитивно впливають на прибутковість. Це означає, що банки вмотивовані надавати кредити більшій кількості людей. Коли ці фактори рухаються в одному напрямку, на ринку спостерігаються низькі настрої, низький ризик і позитивна поведінка інвесторів. Додаткова кількісна оцінка величини і напряму впливу волатильності між обмінними курсами і доходами від акцій показує, наскільки ці зв'язки є динамічними і змінюються залежно від країн, часових періодів і ринків. Взаємозалежність змін обмінних курсів і доходності акцій у рамках ширшої фінансової екосистеми підкреслюють наслідки волатильності, які впливають на економічні політичні рішення, методи управління ризиками та інвестиційні стратегії. Зроблено висновок, що впродовж аналізованих періодів в Азії змінні ринкового ризику, враховані в цій моделі, є важливими і суттєвими предикторами доходності активів

Ключові слова: ризик; квантильна регресія; коливання; кредит; волатильність; фінансова криза