EXPLORING THE ROLE OF STOCK EXCHANGES AND EXCHANGE RATES FOR SUSTAINABLE ECONOMIC DEVELOPMENT: A CROSS CULTURE STUDY OF EMERGING AND DEVELOPED MARKETS

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ABSTRACT

The study seeks to analyze the developed and emerging countries forecasting the business market strategy of Stock Markets index and Exchange rate index and impact on the country's economy from 1991 to 2021. Annually date of nine developed and nine emerging countries has been considered as sample data for this study. Unit-root-test for stationary, Johansen's Co-integration, VECM, Granger Causality, ARDL, GMM (panel data) applied to test the short run/long-run impact, association, and behavior of variables among the economic development, stock return and exchange rates. Result of stock returns and exchange rate indicates highly significant and asymmetrical relationships exist each other and with countries growth. Robustness test validates the finding of study. Recommendation and implication are cleared; investment efficiency, portfolio diversification and exchange management to make significant investment decision and predict market behavior, preventive actions for validate both markets.

KEYWORD: Unit root test (ADF), Johansen's Co-integration, VECM, ARDL, GMM, Robustness

1. INTRODUCTION

1.1. BACKGROUND OF THE STUDY

The business strategy significant for performance and business relationship (Rodrigues, 2002; Monroe, 2006; Chen and Jermias, 2014; Anwar, 2017). To achieve investment efficiency should employ the defender strategy. Policymakers, practitioners, and academics who wish to enhance the investment efficiency of their firms and support the economy will find the study's conclusions helpful.

Stock Returns of every country plays an important role in country development. Stock indicator of growth considers as economic growth of the nations. Microeconomic indicators and the impact of Stock Returns is a leading research topic of every country (Audi et al., 2023; Ajaz et al., 2017; Al-Zararee & Ananzeh, 2014; Fama, 1981; Ghosh et al., 1997; Lee, 1992; Nasseh & Strauss, 2000) are most considerable studies. Empirical studies investigating the link among financial development of public and Stock Returns and growth have on quite limited Goldsmith (1969) (Levine, 2003; Pagano, 1993) report showing a significant relationship among level of development of finance, financial assets divided by GDP as economic growth (p.48). Schumpeter (1912) (Witt, 2016) argued that technology invention is the force underlying long-run countries growth. The cause of the financial sector has innovation ability to extend credit to the entrepreneurs.

An Important debate question is whether the exchange rate fluctuation influences countries' economic growth. Growth theory and exchange rate literature suggested the exchange rate has consequences on the medium-term growth of nations, the Effect of adjustment of Stock and other essential determinants such as investment, financial developments, and international trade on economic growth. Economic theory also supports the exchange rate impact analysis on economic growth—empirical studies a small number which examine the cross-countries context of stock and exchange rate impacts on growths. There was no systematic difference in the growth rate of cross countries exchange rate, 136 cross countries analysis and period was 1960 to 1989 (Ghosh et al., 1997). In the mid-1990s, most of the researcher's failure to identify the relationship among countries exchange rate fluctuation and economic growth of countries, as International Monetary Fund (IMF, 1997) also confirm these results (Levy-Yeyati & Sturzenegger, 2005).

1.2. HOW CAN EXCHANGE RATE ENCOURAGE ECONOMIC GROWTH?

Empirical studies raise whether exchange rates have a role in developing countries. By examining the exchange rate data from 1991 to 2021, we can determine the impact and significance of the exchange rate for economies. These researchers were researching like developed countries and never focused on developing countries. Developing countries like Pakistan are struggling and need more to measure stock markets and exchange rate impact on the economic growth of nations. Measure the relationship of the country economy of developed and emerging countries, market not measurable due to high volatility in the stock markets, exchange rate and economic indicators. These factors have to make study more exciting and

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relationships more valuable. In 1991 Pakistan Government and policymaker innovation in the Stock market for the first time in its history had a tremendous positive impact on foreign investors. Many foreign investors come into the market as a direct and indirect investment in equity markets in Pakistan (Nishat, Shaheen, & Hijazi, 2004). Researcher examines the monetary performance effect by exchange rate and inflation. Exchange rate was used policy in general and currency devaluation like japan was most successful for stability (Jamil, 2022). Latest study provide detail investigation on CSR impact on firm performance; Leverage on Assets, firm age and size of 296 firms data used by researcher. The shows results Sustainable Corporate Social responsibility is the leading factor that enhances the firm performance (Jamil et al., 2022). Friendly environment have significant impact on sustainable performance (Jamil & Rasheed, 2023a) Companies Social Responsibility and Social Capital (Jamil & Rasheed, 2023b). Macro indicator impact on Growth and Performance (Jamil et al., 2023).

1.3. HOW CAN STOCK RETURNS ENCOURAGE ECONOMIC GROWTH?

Stock Returns trading on a public exchange is essential for countries' economic growth. Companies raise capital through public funding and use the fund to pay off debts or expand the business. In this way, companies have advantages as Stock Returns trading to avoid incurring debt and paying interest charges.

Introduction and study background has identified the importance of this study. Pakistan is an important Asian trading country and trades with japans, Taiwan, China, Malaysia and other valuable countries. In this study, we will investigate the linkage between exchange rate and the stock returns; both markets impact the economic growth of nations. Previous studies do not focus on this direction, and it's valuable and equally useful for countries and foreign investors, policymakers and regulators of stock returns and exchange rates. The fluctuation of Markets has afraid the indigenous, foreign investors and is seeking to invest new horizons in Asia's stock returns and exchange rate markets rather than Pakistan.

The study raises the following Research Questions:

There is a relationship among stock returns and Countries growth?

There is a relationship among the exchange rate and Countries growth?

There is a relationship among Stock return and exchange rate having an impact on countries growth?

In foreign investor perspective, there is a need to search cross-border securities, especially in developing countries like Pakistan, which is essential geographically, politically and strategically and investor for investment point of view. This study analyses the relationships of stock returns, exchange rate markets, and countries' economic growth. Foreign and Global investors area great interest showing in the past and invest direct investment in Stock returns. This study would positively impact indigenous, foreign investors and government financial policymakers, stakeholders, shareholders and portfolio managers for risk minimize as confidence on markets. This study will be beneficial for research scholars and government decision-makers. The main objective of this paper is to analyze the relationship and impact of the fluctuations of Stock Returns and exchange rates between economic growths of countries and explain with Macroeconomic Indicators any other factor of Stock Returns. There is a relationship among exchange rate; Stock Returns rate, and countries' economies?

1.4. HYPOTHESIS

Ha: Fluctuation of Stock Returns does impact the Economic Growth of Countries.

Ha: Exchange Rate does impact the Economic Growth of Countries.

Ha: Exchange Rate does have any impact on the Stock returns.

Ha: Stock Returns does have any impact on the Exchange Rate.

2. LITERATURE REVIEW

Empirical studies have a vast amount of research literature according to the subject of developing and developed countries, which are more focused on identifying the impact of Stock Returns and exchange rates on the countries growth. The researcher investigated the relationship of the Stock Returns of Palestine with GDP, exchange rate, inflation and Balance of trade. Analysis of the data through unit root test, Granger Causality test, Regression analysis and reported any causal relationship GDP, Exchange rate and Stock Returns of the countries (Abu-Libdeh & Harasheh, 2011; Harasheh & Abu Libdeh, 2011; Audi et al., 2022). Studied reported the association of macro-economic variables link the gold price's growth rate with Tehran's Stock Returns. The researcher used the VAR Model and Johansen Co-integration analysis test. The result showed a long-run positive association between Stock Returns and volume of transactions. While the researcher investigates, the exchange rate increase decreased in Stock Returns activities.

Also reported Gold (exchange) market and stock market have a relationship in the short run. Sustainability's in the stock and gold markets played an important role in market trends (Mashayekh, Moradkhani, & Jafari, 2011). Indian Stock Returns were long-run relationship with Marco Economic variables; Gold Price, Exchange rate. The multi Regression model was used to determine the connection between Indian Stock Returns and Macro-economic Variables. Researchers Investigate a high correlation among Stock Returns and exchange rates and gold market prices (Sharma & Mahendru, 2010). The researcher investigated the relationship among the Stock market of Iran and the growth of Iran (Gross Domestic Product). The researcher analyzed the unit root ADF stationary test, VAR (Vector Auto-regressive Model), VECM and Granger Causality analysis. Results found a long-run positive relationship among Gross domestic product and Stock Returns of Iran. Granger Causality test confirmed the relationship in the short run between Stock Returns and the economic growth of Iran (Oskooe, 2010). The researcher examined the "Sims" causality of Granger defined relationship among stock markets and Cameroon economic

growth as time-series data from 2006-2010. The researcher suggested Cameroon Stock Returns still do not affect Cameroonians' economic growth.

There was a positive relationship among financial stock market development and the Cameroonian economy. The market's capitalization positively affects Cameroonian economic growth like gross domestic products (Ake & Ognaligui, 2010). The researcher found a causal relationship among Stock Returns and macro-economic variables like exchange rate, trade balance and industrial production index for 1990 to 2008. The researcher applied the ADF test, Johansen co-integration and Granger Causality test. There found no causality relationship among Stock Returns KSE 100 index and macroeconomic variables (Imran et al., 2009). An indicator of Economy financial health was a stock market. Which showed the mood of investors of every country like stock market development was an essential ingredient for country growth. The researcher examined the time series data for the pier of 1989 to 2006 and analyzed both short-run and the long-run relationship with the help of ECM. Two stock markets development used as data; size and liquidity. Reports showed the stock market development positively affects the gross domestic product in both the short and long run (Nowbutsing & Odit, 2009).

Long term relationship found among financial developed market and Belgium economic development. The researcher used data set of the stock market and argued that the economic Effect of the market is affected by economic growth. The researcher was strong evidence that Belgium stock market development caused Belgium economic growth, specially specified period of 1873 to 1935. The researcher also argued the time-varying nature of the stock market-linked among Belgium stock market development and Belgium economic growth (Van Nieuwerburgh, Buelens, & Cuyvers, 2006). The researcher examined the association between the creation of stock returns and countries economic growth. The analysis found results were economic growth increases of the world after opening stock returns. Evidence indicated the increased growth of productivity as rise the growth rate of Gross domestic products rather than physical capital of the countries (Baier, Dwyer Jr, & Tamura, 2004). The researcher examined the Causality relationship among Stock Returns and macroeconomic variables of Pakistan. Found Unidirectional Causality was Macroeconomic variables and Stock Returns of Pakistan (Husain & Mahmood, 2001). The research examined the relationship between Stock Returns and expenditures of the country. Results showed a causality relationship among Stock Returns and macro-economic variables like the consumption expenditure of the country (Nishat & Saghir, 1991). Unidirectional Causality was reported Stock Returns price to investment spending in the context of Bangladesh and India (Darrat & Mukherjee, 1986; Mukherjee & Naka, 1995).

3. RESEARCH METHODOLOGY

Data; the study analyzes the fluctuation impact of stock returns and exchange rates on countries' growth from 1991 to 2020. This paper collects the time serious data economic growth as gross domestic product and fluctuation of Stock Returns the closing date and exchange rate as a change in real exchange rate data. We are collected data from different sources, economic surveys, ministerial financial websites, and State bank of Pakistan reports, World Bank and financial organization websites. For this research, we will use secondary data collected by different financial sources from 1991 to 2021. We use economic growth variable (Husain & Mahmood, 2001) as a gross domestic product, fluctuation of Stock Returns closing date index, real exchange rate, other financial and market variables to estimate the relationship and impact on markets and countries' economies use the following models and techniques.

We adopt GMM Panel regression and ARDL Model techniques to investigate the impact of Stock Returns and money market rates on each other's and countries' economic growth.

$Y = \alpha + \beta X + \delta d + \varepsilon_t$ ..... (1)

Y denotes the Economic growth, X determinants of impact, D dummy for the variables, T for time Error term (Hsiao & Wang, 2007; Wang & Hsiao, 2005) (Cheng & Siyan (2005) and (Di Giovanni & Shambaugh, 2008) (Julian & Jay (2008) examine the effects of variables on the economy (Barro, 1991).

The general framework outlined in equation (1) stipulates that a country's growth rate at

Time t is a function of its state, and control variables form the basis for the following econometric specification:

$Y_{i,t} = ßx_{i,t} + \eta K_{i,t} + Y_t + Q_i + \varepsilon_{i,t}$ ..... (2)

Where the dependent variable $Y_{i,t}$ is showing the growth rate of real per capita GDP in country i at time t, $X_{i,t}$ is a vector of explanatory variables, $K_{i,t}$, is a vector of like exchange rate dummies, Y_t are time-specific effects, Q_i are country-specific effects, $\varepsilon_{i,t}$ are error terms and the ß's and η's are parameters to be estimated. The estimators were designed to incorporate individual and time results (Greene, 2008) to hold the systematic trend of $\varepsilon_{i,t}$ to be higher for some countries than others and higher for several periods than others. There is a long-run relationship check between GDP, stock returns, and exchange rate using the following equation (Bahmani-Oskooee & Sohrabian, 1992).

$LnSP_t = \alpha + ßLnEX_t + \varepsilon_t$ ..... (3)

$LnEX_t = \alpha + ßLnSP_t + \varepsilon_t$ ..... (4)

ßˆ is used to measure how sensitive the real output is due to changes in the real exchange rate and stock returns. Coefficient significant stationary residuals are less than variable if variable near order 1 means residual also stationary at the level it's showing the long-run relationship (Engle & Granger, 1987). Error correction model is used for short-run check integration as follows;

$$\Delta LnSP_t = \alpha + \sum_{k=1}^{n} \beta i \Delta LnSP_t - i + \sum_{k=0}^{n} \delta i \Delta LnEX_t - i + \lambda \varepsilon t - 1 + \mu_t \quad \ldots\ldots\ldots (5)$$

$\Delta LnEX_t = \alpha + \sum_{k=1}^{n} \beta i \Delta LnEX_t - i + \sum_{k=0}^{n} \delta i \Delta LnSP_t - i + \lambda \varepsilon t - 1 + \mu_t$ …… (6)

Co-Integration and non-Stationery granger test: The last two decades analyzed data using different co-integration and time series methods. As most researchers used in empirical studies, co-integration recommended Engle and Granger (1987) were. Integrated order was more significant than or equal to 1, a non-stationary variable (Asteriou and Hall, 2007).

We can amend Dependent variable to check the asymmetric impact of stock returns on exchange rate. Linear and Non-Linear ARDL models can be described as under:

$\Delta LnEXi = \alpha + \sum_{i=1}^{n} \beta i \Delta LnEXt - i + \sum_{k=0}^{n} \delta i \Delta LnSPt - i + \lambda 1 LnEXt - i + \lambda 2 LnSPt - 1 + \mu t$…… (7)

$\Delta LnSPi = \alpha + \sum_{i=1}^{n} \beta i \Delta LnSPt - i + \sum_{k=0}^{n} \delta i \Delta LnEXt - i + \lambda 1 LnSPt - i + \lambda 2 LnEXt - 1 + \mu t$…..... (8)

$\Delta LnEXt = \alpha + \sum_{i=1}^{n} \beta i \Delta LnEXt - i + \sum_{k=0}^{n} \delta i \Delta POSt - i + \sum_{k=0}^{n} \delta i \Delta NEGt - i + \lambda 1 LnEXt - 1 + \lambda 2 POSt - 1 + \lambda 3 NEGt - 1 + \mu t$……..……..... (9)

$\Delta LnSPt = \alpha + \sum_{i=1}^{n} \beta i \Delta LnSPt - i + \sum_{k=0}^{n} \delta i \Delta POSt - i + \sum_{k=0}^{n} \delta i \Delta NEGt - i + \lambda 1 LnSPt - 1 + \lambda 2 POSt - 1 + \lambda 3 NEGt - 1 + \mu t$……..…… (10)

ARDL equation long run, short-run and linear, non-linear use for analyzing the impact of Stock returns and exchange rate on each other.

4. COMPARISON, RESULTS AND DISCUSSION

Table 1: Descriptive Statistic

VARIABLE	DEVELOPED COUNTRIES USA. UK. Canada. Australia. New Zealand. Hong Kong. Japan. Germany. France.			EMERGING COUNTRIES Brazil. Malaysia. Thailand. Philippines. Korea. China. Indonesia. India. Pakistan.			Obs.
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	
GDP GROWTH	4.61	5.09	4.07	1.82	2.24	2.76	279
REER	100.48	99.29	17.57	101.56	101.13	15.61	279
STOCK MARKETS INDEX	7756.21	1687.14	16950.63	8791.77	6223.00	6775.59	279

Table 2: Unit Root Test

Unit Root Test	DEVELOPED COUNTRIES				EMERGING COUNTRIES			
Variable	ADF - F.Chi-square		ADF Choi Z-stat		ADF - F.Chi-square		ADF Choi Z-stat	
	LEVEL	1ST DIF.	LEVEL	1ST DIF.	LEVEL	1ST DIF.	LEVEL	1ST DIF.
GDP GROWTH	41.74***	139.57***	-3.09***	-9.72***	46.95***	200.45***	-3.42***	-12.51***
REER	26.15*	105.07***	-1.29***	-8.08***	19.41	152.07***	-0.46	-10.39***
STOCK MARKETS INDEX	6.68	127.83	4.11	-9.18***	3.64	114.03***	6.60	-7.67***

***** 01% ** 05% *10%** the above table 2 showing the stationary level according *** 01%, ** 05%,*10%; Level, 1st difference level.

The above table 1 shows the descriptive statistic comparison of developed and emerging countries. GDP mean 4.61 of developed and 1.82 of emerging countries, while standard deviation 4.07 and 2.76 respectively showing countries growth impact. Stock markets indexes developed countries mean 7756.21 and emerging countries mean 8791.77 showing the importance of stock markets especially for emerging country more Effect showing as compared to developed countries. The Real Effect of the exchange rate (REER) is also the same response, as the impact of 100.48 and 101.56, respectively. Therefore comparing the standard deviation of stock markets indexes of developed countries 16950.63, emerging 6775.59 and REER 17.57 of developed and 15.61 of emerging countries is more Effect for developed countries.

There is Table 2 showing the trend and relationship of GDP, REER and Stock Markets indexes. GDP at level significant showing on developed and emerging countries, while Real Effect of exchange and stock markets indexes at first level difference significance showing the importance of the variables.

4.1. JOHANSEN CO-INTEGRATION TEST

Table 3: Developed Countries

Alternative hypothesis: common A.R. coefs. (within-dimension)					
				Weighted	
		Statistic	Prob.	Statistic	Prob.
Panel ADF-Statistic		-4.427790	0.0000	-4.280532	0.0000
		Statistic	Prob.		
Group ADF-Statistic		-4.327543	0.0000		
Augmented Dickey-Fuller results (parametric)Cross-section specific results					
Cross ID	AR(1)	Variance	Lag	Max lag	Obs
USA.	0.383	2.624624	0	6	30
UK.	0.647	6.504341	0	6	30
CANADA.	0.372	6.597248	0	6	30
AUSTRALIA.	0.538	1.574822	0	6	30
NEW ZEALAND.	0.451	1.510177	0	6	30
HONG KONG.	0.204	12.21716	0	6	30
JAPAN.	0.085	3.797798	0	6	30
GERMANY.	0.142	5.132652	0	6	30
FRANCE.	0.279	4.420674	0	6	29
					269

Table 4: Emerging Countries

Alternative hypothesis: common A.R. coefs. (within-dimension)					
				Weighted	
		Statistic	Prob.	Statistic	Prob.
Panel ADF-Statistic		-4.274208	0.0000	-3.698513	0.0001
		Statistic	Prob.		
Group ADF-Statistic		-3.965682	0.0000		
Augmented Dickey-Fuller results (parametric)Cross-section specific results					
Cross ID	AR(1)	Variance	Lag	Max lag	Obs
PAKISTAN.	0.545	3.085938	0	6	30
INDIA.	0.312	7.790326	0	6	30
INDONESIA.	0.304	13.38307	0	6	30
CHINA.	0.590	2.336273	0	6	30
KOREA.	-0.282	8.847552	1	6	29
PHILIPPINES.	0.689	10.69806	0	6	30
THAILAND.	0.438	14.38035	0	6	30
MALAYSIA.	0.127	16.64556	0	6	30
BRAZIL.	0.319	7.005738	0	6	30
					270

The above table 3 shows the Johansen Co-integration developed countries test results; Panel ADF developed countries -4.42 statistic showing highly significant but negative relations. Hong Kong variance is the highest level in the above table 3 in developed countries list of 12.21 and Australian 1.57, New-Zealand 1.51 at lowing. Variances of countries show variation impact and long relation for the period of 1971 to 2021.

Table 4 shows the Johansen Co-integration emerging countries test results, Panel ADF emerging countries -4.27 statistic showing highly significant but negative relations. Malaysian variance is the highest level in the above table 4 in emerging countries list of 16.64 and Chinas 3.08 at lowing. Variances of countries show variation impact and long relation for the period of 1971 to 2021.

The table 5 shows Vector Error Correction Estimates of developed countries, which show the short-run and long-run behaviour for the economy, real Effects of exchange rate and stock markets indexes. REER developed countries -0.130415 showing negatively behave and stock markets indexes 0.000331showing the positive behaviour for developed countries' economic growth.

Table 5: Vector Error Correction Estimates (Developed Countries)

Co-integrating Eq:		CointEq1	
GDP GROWTH(-1)		1.000000	
REER(-1)		-0.130415	
		(0.03319)	
		[-3.92896]	
STOCK MARKETS INDEX (-1)		0.000331	
		(8.4E-05)	
		[3.94550]	
C		8.275573	
Error Correction:	D(GDP_GROWTH)	D(REER)	D(STOCK_MI)
CointEq1	-0.155568	0.474756	48.63564
	(0.05518)	(0.12602)	(36.9668)
	[-2.81940]	[3.76735]	[1.31566]
D(GDP GROWTH(-1))	-0.221181	-0.287047	-168.9263
	(0.06917)	(0.15797)	(46.3399)
	[-3.19773]	[-1.81708]	[-3.64537]
D(GDP GROWTH(-2))	-0.136288	-0.081448	-92.99859
	(0.06865)	(0.15679)	(45.9929)
	[-1.98526]	[-0.51948]	[-2.02202]
D(REER(-1))	-0.029688	0.376885	0.360378
	(0.02657)	(0.06067)	(17.7976)
	[-1.11757]	[6.21192]	[0.02025]
D(REER(-2))	0.018185	-0.085955	6.268669
	(0.02678)	(0.06117)	(17.9430)
	[0.67901]	[-1.40525]	[0.34937]
D(STOCK MARKETS INDEX (-1))	-2.97E-05	-0.000837	0.138428
	(0.00012)	(0.00027)	(0.07870)
	[-0.25262]	[-3.11845]	[1.75899]
D(STOCK MARKETS INDEX (-2))	-0.000479	-8.97E-05	-0.236452
	(0.00012)	(0.00026)	(0.07771)
	[-4.12720]	[-0.33873]	[-3.04276]
C	-0.135317	0.263753	422.7654
	(0.15661)	(0.35768)	(104.922)
	[-0.86404]	[0.73741]	[4.02932]
R-squared.	0.260959	0.193443	0.095099
Adj. R-squared.	0.239757	0.170305	0.069139
Sum sq. resids.	1290.490	6731.256	5.79E+08
S.E. equation.	2.299759	5.252344	1540.745
F-statistic.	12.30821	8.360091	3.663245
Log likelihood.	-563.3744	-771.4936	-2203.193
Akaike AIC.	4.534717	6.186457	17.54915
Schwarz SC.	4.646762	6.298502	17.66120
S.D. dependent.	2.637583	5.766254	1596.938

The table 6 shows Vector Error Correction Estimates of Emerging countries, which shows the short-run and long-run behaviour for countries economy, the real Effect of exchange rate and stock markets indexes. REER emerging countries 0.11314 showing positive behaviour and stock markets index -0.000115 showing the negatively behave for emerging countries economic growth.

The table 7 shows the Causal relationship structure between Gross Domestic Product, REER and Stock Markets Index analysis of developed countries through the Granger Causality approach. The Granger causality approach is used to test whether the above variables are useful for forecasting another. When the probability value is less than any level of significance, then we cannot reject the hypothesis and accept it at that level. If the value is above the significant level, we can reject the hypothesis. REER does not Granger Cause Gross Domestic Product Growth at 0.9307 we can reject the hypothesis. While Gross Domestic Product Growth does not Granger Cause REER at 0.10% level, we can accept the hypothesis.

Table 6: Vector Error Correction Estimates (Emerging Countries)

Co-integrating Eq:			CointEq1
GDPGROWTH(-1)			1.000000
REER(-1)			0.113141
			(0.04316)
			[2.62148]
STOCK MARKET INDEX(-1)			-0.000115
			(5.4E-05)
			[-2.12259]
C			-15.23534
Error Correction:	D(GDP GROWTH)	D(REER)	D(STOCKMARKETINDEX)
CointEq1	-0.144263	0.129753	-240.1731
	(0.05801)	(0.15066)	(43.9123)
	[-2.48677]	[0.86122]	[-5.46938]
D(GDPGROWTH(-1))	-0.279347	0.396025	70.25983
	(0.07720)	(0.20048)	(58.4334)
	[-3.61868]	[1.97536]	[1.20239]
D(GDPGROWTH(-2))	-0.223052	0.169221	7.293381
	(0.07333)	(0.19044)	(55.5054)
	[-3.04186]	[0.88859]	[0.13140]
D(REER(-1))	-0.024689	-0.013970	23.85810
	(0.02578)	(0.06696)	(19.5161)
	[-0.95760]	[-0.20864]	[1.22248]
D(REER(-2))	-0.031385	-0.059236	-13.59691
	(0.02527)	(0.06564)	(19.1314)
	[-1.24178]	[-0.90245]	[-0.71071]
D(STOCKMARKETS INDEX(-1)	1.57E-05	0.000476	0.176011
	(9.4E-05)	(0.00024)	(0.07082)
	[0.16728]	[1.95709]	[2.48520]
D(STOCKMARKETS INDEX(-2))	-0.000140	-8.78E-05	0.185662
	(9.4E-05)	(0.00024)	(0.07105)
	[-1.49599]	[-0.36026]	[2.61311]
C	-0.397845	0.104619	557.5305
	(0.23020)	(0.59785)	(174.253)
	[-1.72823]	[0.17499]	[3.19955]
R-squared.	0.187271	0.070170	0.292372
Adj. R-squared.	0.163955	0.043495	0.272071
Sum sq. resids.	2799.084	18879.15	1.60E+09
S.E. equation.	3.386983	8.796225	2563.780
F-statistic.	8.031867	2.630515	14.40198
Log likelihood.	-660.9324	-901.4370	-2331.516
Akaike AIC.	5.308988	7.217754	18.56758
Schwarz SC.	5.421033	7.329799	18.67963
S.D. dependent.	3.704233	8.993995	3004.943

Table 7: Granger Causality Tests (Developed Countries)

Null Hypothesis:	Obs.	F-Statistic	Prob.
REER does not Granger Cause GDP GROWTH	261	0.07181	0.9307
GDP GROWTH does not Granger Cause REER		2.57218	0.0783
STOCK MARKETS INDEX does not Granger Cause GDP GROWTH	261	7.20501	0.0009
GDP GROWTH does not Granger Cause STOCK MARKETS INDEX		5.30962	0.0055
STOCK MARKETS INDEX does not Granger Cause REER	261	4.69610	0.0099
REER does not Granger Cause STOCK MARKETS INDEX		0.98777	0.3738

Stock Market Indexes does not Granger Cause Gross Domestic Product Growth 0.01%, and Gross Domestic Product Growth does not Granger Cause Stock Market Indexes 0.01% level of significance we can accept the hypothesis. Stock Market Indexes does not Granger Cause REER at 0.01% significant accept the hypothesis, as REER does not Granger Causal Stock Market Indexes at 0.3738 can reject the hypothesis. The above result shows the Gross Domestic Product, REER and Stock Market indexes in developed countries have a significant relationship and affect each other at their significance levels. In contrast, REER does not affect Gross Domestic Product and Stock Market Indexes in developed countries.

Table 8: Granger Causality Tests (Emerging Countries)

Null Hypothesis:	Obs.	F-Statistic	Prob.
STOCKMARKETS INDEX does not Granger Cause GDP GROWTH	261	4.06704	0.0182
GDP GROWTH does not Granger Cause STOCKMARKETS INDEX		4.36150	0.0137
REER does not Granger Cause GDP GROWTH	261	2.71212	0.0683
GDP GROWTH does not Granger Cause REER		7.32676	0.0008
REER does not Granger Cause STOCKMARKETS INDEX	261	3.52784	0.0308
STOCKMARKETS INDEX does not Granger Cause REER		5.34465	0.0053

Table 9: ARDL

ARDL	Stock Markets and Exchange rate impact on Countries Growth		Stock Markets Impact on Exchange rate		Exchange rate Impact on Stock Markets	
Variable	Developed Countries Coefficient	Emerging Countries Coefficient	Developed Countries Coefficient	Emerging Countries Coefficient	Developed Countries Coefficient	Emerging Countries Coefficient
	Long Run Equation					
REER	-0.021 -1.17	-0.02 -1.18	-95.14*** -2.28	33.13** 2.05		
STOCK MARKETS INDEX	-0.03*** -6.17	-0.02*** -4.26			-0.01 -0.23	0.02*** 4.17
	Short Run Equation					
COINTEQ01	-0.47*** -7.69	-0.33*** -3.01	-0.064 -1.51	-0.01 -0.31	-0.16*** -7.52	-0.17*** -2.60
D(REER)	-0.02 -0.85	0.03 0.73	14.82 1.56	39.11 1..17		
D(STOCK_MI)	0.09*** 4.81	0.04*** 3.09			-0.02 -0.81	-0.02 0.29
D(STOCK_MI(-1))					0.04 0.48	0.05* 1.70
D(STOCK_MI(-2))					0.01 0.24	
D(STOCK_MI(-3))					-0.01 -1.32	
C	3.27*** 5.17	3.65*** 3.07	1690.73** 2.21	353.07* 1.67	16.66*** 8.01	15.73** 2.47
Akaike info criter.	4.11	4.77	16.31	15.28	5.17	6.32
Mean dep. Var	-0.20	-0.32	405.43	717.25	-0.10	0.14
S.E. of regression	2.00	2.88	1545.65	2584.56	4.26	7.86
Log-likelihood	-534.40	-627.85	-2247.24	-2103.95	-657.49	-844.96
S.D. dep. Var	2.63	3.66	1600.38	2908.13	5.64	8.92
Observations	270	270	270	270	243	261

*** 01% ** 05% *10% Maximum dependent lags: 4 (Automatic selection), Model selection method: Akaike info criterion (AIC) &Number of models evaluated: 16

The table 8 shows the Causal relationship structure between Gross Domestic Product, REER and Stock Markets Index analysis of Emerging countries through the Granger Causality approach. The Granger causality approach is used to test the hypothesis the above variables are useful for forecasting another. When the probability value is less than any level of

significance, then we cannot reject the hypothesis and accept it at that level. If the value is above the significant level, we can reject the hypothesis. Stock Market Indexes do not Granger Cause Gross Domestic Product Growth, and Gross Domestic Product Growth does not Granger Cause Stock Market Indexes at 0.05% significant level; we can accept the hypothesis. As REER does not Granger Cause Gross Domestic Product Growth at 0.10% and Gross Domestic Product Growth does not Granger Cause REER at 0.01% level of significance can accept hypothesis his level. While REER does not Granger Cause Stock Market Indexes at 0.05% and Stock Market Indexes does not Granger Cause REER 0.01% level of significance, we can accept hypothesis at his significance level. The above result shows the Gross Domestic Product, REER and Stock Market indexes in emerging countries have a significant relationship and affect each other at their significance levels.

ARDL Stands for Autoregressive Distributed Lag. The table 9 shows the ARDL for developed countries; it was used for decades to test time series long run/short-run relationships between economic developments of countries. It's useful for forecasting and sorting out the long-run relationship from short-run dynamics. Model one; Stock Markets and Exchange rate impact on Countries Growth; Stock market indexes at -0.03 for developed countries and emerging countries at -0.02 level of significance but negative slops for the long run. It's an essential impacting variable for long run countries developments. While REER at -0.021 for developed and emerging at -0.02 negatively long run slops. Model two; Stock Markets Impact on Exchange rate; REER at -95.14 highly significance negatively slops for developed Markets and emerging at 33.13, 5% level of significance showing. This means REER is an essential and impacting variable for Stock Markets indexes in the long run. Model three; Exchange rate Impact on Stock Markets; Stock Markets index at -0.01 for developed countries negatively sloped and but for emerging at 0.02 high significance positive slop showing. Mean its significant Stock markets index variable for emerging countries compared to developed countries for the long run. In Short Run, Equation COINTEQ01 shows significance and importance highly for model one and model three with negative slops; While model two shows less significance in the short-run for developed and emerging countries.

Table 10: GMM

GMM	Stock Markets and Exchange rate impact on Countries Growth		Stock Markets Impact on Exchange rate		Exchange rate Impact on Stock Markets	
Variable	Developed Countries Coefficient	Emerging Countries Coefficient	Developed Countries Coefficient	Emerging Countries Coefficient	Developed Countries Coefficient	Emerging Countries Coefficient
REER	0.02*** 8.68	0.04*** 18.08	86.30*** 22.19	67.43*** 6.63		
STOCK MARKETS INDEXES	-0.06*** -2.64	-0.04*** -2.95			0.07*** 22.19	0.02*** 6.63
R-squared.	0.014644	-0.021262	0.03	-0.04	-14.692153	-28.189128
Adjusted R-squared.	0.011087	-0.024949	0.03	-0.04	-14.692153	-28.189128
S.E. of regression.	2.743557	4.12124	6675.21	17326.90	61.83422	94.94819
S.D. dependent var.	2.758894	4.070773	6775.59	16950.63	15.60945	17.57422
J-statistic.	3.10*	26.32***	0.18	30.21***	260.81***	269.12***
Observations.	279	279	279	279	279	279

*** 01% ** 05% *10%

The above table 10 shows the generalized method of movements (GMM) results of Developed countries and emerging countries from 1991 to 2021. GMM estimator used for dynamic panel data combines moment's conditions with moment conditions for differential equation according to the model level. If the difference of GMM estimated coefficient of a lagged dependent variable is close to 0.87, then estimation is downward biased because of weak instrumentation. The GMM model is preferable and useful. The above two REER at 86.30***, so GMM is a more helpful estimator. The above GMM results highly significantly affect models one, two and three, which show the importance of REER and Stock markets index for countries growth and REER for stock Markets index and stock Markets index for REER positively sloped as developed and emerging countries. While stock markets for economic growth model one developed at -0.06*** and emerging countries at -0.04*** highly significant but negative slop affecting variables.

The robustness test is used in the table 11 to check the regression coefficient estimates behave regressors adding or removing resistance to outliers. In simple words, the median is not affected by outliers; to weigh the observations how well on behaved. Test the observation and results in reliabilities. Results showing REER at 0.0239*** developed and 0.0509*** for emerging showing the observation well behave and results are highly significant positively slopes and reliable for countries growth. The stock markets index is at -0.0469*** for developed countries and -0.0445*** for emerging countries negative slop, but highly significant observations behave and result in reliabilities. The indication model and observation is the best fit for this research.

Table 11: Robust Test

Variable	Developed Countries Coefficient	Emerging Countries Coefficient
REER	0.0239*** 3733.7620	0.0509*** 19068582
STOCK_MI	-0.0469*** -789.319	-0.0445*** -3040724
Robust Statistics		
Rw-squared	0.008942	0.032898
Scale	1.727874	3.018884
Adjust Rw-squared	0.008942	0.032898
Rn-squared statistic	27301421***	382000000000000***

*** 01% ** 05% *10% Method: Robust Least Squares (M-estimation) M settings: weight=Fair, tuning=1.4, scale=MAD (median centered) Huber Type I Standard Errors & Covariance.

5. CONCLUSION

The study seeks to analyze the developed and emerging countries forecasting impact and relationship of countries growth, real Effect of exchange rate and Stock Markets index through unit root test for stationary, co-integration estimator use to the existence of the long-run relationship, after co-integration test Vector error correction method used for short-run relationship estimation. In contrast, the Granger Causality test applies for causal relationship estimation, ARDL for test time series long run/short-run relationships between economic developments of countries, and GMM estimator use for dynamic panel data combines moment's conditions with moment condition for differential equation according to the model level. Observations result in validity acceptance estimate through robustness test for 1991 to 2021. We rely on the hypothesis design of a bivariate predictive model that links countries growth, real Effect of exchange rate and stock markets index differential and estimate long run and short run. While several empirical studies have analyzed the hypothesis as vitality, growth and otherwise, (see, e.g., (Chen & Hsu, 2019; Curcuru, Thomas, Warnock, & Wongswan, 2014; Gelman, Jochem, Reitz, & Taylor, 2015; Hau & Rey, 2006) but its focus mostly developed countries, even single impact estimates with insufficient information about simple size and forecast. This is the motivation of the study to investigate the relationship and impact of stock return and exchange rate on the economic growth of countries for leading nine developed and nine emerging countries of the world. Unit root test the stationary level according *** 01%, ** 05%,*10%; Level, 1st difference level. They're showing the trend and relationship of GDP, REER and Stock Markets indexes. GDP at level significant showing on developed and emerging countries, while Real Effect of exchange and stock markets indexes at first level difference significance showing the importance of the variables. The Johansen Co-integration Panel ADF developed countries -4.42 statistic showing highly significant but negative relations. Hong Kong variance is the highest level in developed countries list of 12.21 and Australian 1.57, New-Zealand 1.51 at lowing variances of countries. While the Johansen Co-integration Panel ADF emerging countries -4.27 statistic showing highly significant but negative relations. Malaysian variance is the highest level in emerging countries list of 16.64 and Chinas 3.08 at lowing variances of countries is showing variation impact and long relation for the period of 1971 to 2021. Vector Error Correction Estimates of developed countries show the short-run and long-run economic behaviour, the real Effect of exchange rate and stock markets indexes. REER developed countries -0.130415 showing negatively behave and stock markets indexes 0.000331showing the positive behaviour for developed countries' economic growth. While Vector Error Correction Estimates of Emerging countries show REER emerging countries, 0.11314 showing positive behaviour and stock markets indexes -0.000115 showing the negative behaviour for emerging countries' economic growth. The Granger causality approach is used to test whether the variables are useful for forecasting another. Developed countries; Gross Domestic Product Growth does not Granger Cause REER at 0.10% level; Stock Market Indexes does not Granger Cause Gross Domestic Product Growth, Gross Domestic Product Growth does not Granger Cause Stock Market Indexes, Stock Market Indexes does not Granger Cause REER at 0.01% significant level; we accept the hypothesis, while REER does not support Granger Causal Gross Domestic Product Growth at 0.9307 and REER does not Granger Cause Stock Market Indexes at 0.3738 at the level of significance we can reject the hypothesis. While emerging countries; Stock Market Indexes does not Granger Cause Gross Domestic Product Growth, Gross Domestic Product Growth does not Granger Cause Stock Market Indexes, REER does not Granger Cause Stock Markets Index at 0.05%, REER does not Granger Cause Gross Domestic Product Growth, Gross Domestic Product Growth does not Granger Cause REER, Stock Market Indexes does not Granger Cause REER 0.01% level of significance, and we can accept hypothesis at his significance level. Autoregressive Distributed Lag (ARDL) is useful for forecasting and sorting the long-run relationship from short-run dynamics. Model one; Stock Markets and Exchange rate impact on Countries Growth; Stock market indexes at -0.03 for developed countries and emerging countries at -0.02 level of significance but negative slops for the long run. While REER at -0.021 for developed and emerging at -0.02 negatively long run slops. Model two; Stock Markets Impact on Exchange rate; REER at -95.14 highly significance negatively slops for developed Markets and emerging at 33.13, 5% level of significance showing. Model three; Exchange

rate Impact on Stock Markets; Stock Markets index at -0.01 for developed countries negatively sloped and but for emerging at 0.02 high significance positive slop showing. Mean its significant Stock markets index variable for emerging countries compared to developed countries for the long run. In Short Run Equation, COINTEQ01 is significant for model one and model three with negative slops; While model two shows less significance in the short run for developed and emerging countries. GMM estimator use for dynamic panel data combines moment's conditions, GMM results highly significantly effecting in model one, two and three, which showing the importance of REER and Stock markets index for countries growth and REER for stock Markets index and stock Markets index for REER positively sloped as developed and emerging countries. While stock markets for economic growth model one developed at -0.06 and emerging countries at -0.04 highly significant but negative slop affecting variables. The robustness test is used to check the regression coefficient estimates behave regressors, weight the observations how well on behaved, test the observation and results in reliabilities. REER is at 0.0239 developed and 0.0509 for emerging, showing the observation well behave and results are highly significant positively slopes and reliable for countries growth. The stock markets index is at -0.0469 for developed countries and -0.0445 for emerging countries negative slop, but highly significant observations behave and result in reliabilities. The indication model and observation is the best fit for this research. Research indicates the high impact of stock returns and exchange rates on countries growth for the long run/short run. Stock return strongly influences the exchange rate in the long run/short run; while the exchange rate has less impact on countries growth, the exchange rate is less influencing on a stock return during short-run ARDL estimation for the period of 1991 to 2021. This study is contributing in policymaking that if countries can going to depreciate their currencies, then it's necessary to improve their countries growth through stock return, be aware the Effect of stock returns and exchange rate on countries growth, Stock returns influence and exchange rate impact on stock returns of their future policies.

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