

FINANCIAL INTEGRATION DETERMINANTS IN EMERGING ECONOMIES

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Abstract

Financial integration is about creating a global financial market and financial institutions. In respect of this, this study seeks to identify economic, financial and institutional factors that significantly influence the level of financial integration in emerging economies using a time series data of twenty nine years from 1996 to 2024 and employing the autoregressive distributive lag technique (ARDL). The model specified financial integration (dependent variable) as a function of trade balance, FDI, institutional quality and exchange rate (independent variables) The general findings from the study show that the independent variables specified have an effect (varying dimensions) on the dependent variable both in the long run and short run. One of the recommendations made was strengthened regulatory quality/framework that would ensure stability and transparency in financial markets and institutions.

Introduction

Financial integration is a game changer in global trading; forming the backbone of international financial markets. Financial integration is about linking financial systems across countries and creating a seamless global market and financial institution where capital can flow effortlessly across borders. By ditching trade restrictions on goods, services and capital developing economies can tap into this integrated market and reap the benefits (Ifurueze, 2023).

The scope financial integration goes beyond buying and selling securities; it extends to creating a cohesive global financial system. This means syncing up regulations, standards and practices worldwide which can have a huge impact on the stability and efficiency of global finance (Ayadi, 2021). This stability and efficiency can be achieved by removing barriers to capital flows, harmonizing rules and standards and developing common infrastructures (financial infrastructures).

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Financial integration can unfold on various scales or levels, and it is not a one-size-fits-all concept. It could be regional, continental or global. It can manifest in different ways such as market integration, where financial markets become increasingly interconnected or institutional integration where financial institutions collaborate from partnership or merge to form stronger alliances (Mehmen, 2020).

While financial integration offers many benefits to developing economics, it also has a flip side; it has increased the vulnerability of developing economics to external shocks and further worsened income inequality as capital flows tends to favour countries with more developed financial markets and systems: this therefore exacerbates global economic disparities.

Additionally, financial integration brought about some risks associated with trade openness, including job displacement /unemployment as some industries are not particularly competitive to meet up global standards, and this also births the loss of domestic industries. In some emerging economies, financial integration has lead to trade deficits; where the imports of these countries are more than their exports, these deficits weakens the country's currency and increases its foreign debts (Boamah, 2020).

As economies record increased capital inflows or outflows from financial integration, the problem that manifests is the volatility in exchange rates and inflation rate, this further leads to financial instability. Emerging economies overdependence on foreign markets, lack of well-developed infrastructure and regulatory frameworks hinders the efficacy of financial integration and increases operational risks for investors (Mail, Hnadayo, Rizman & Razak, (2020).

These issues highlighted above lead to this study; it is therefore the primary aim of this study to investigate the determinants of financial integration in emerging economics. Focusing on identifying the economic, financial, and institutional factors that significantly influence the level of financial integration. This research also aims to provide policy recommendation for enhancing financial integration and promoting economic growth in EEs.

This research work is organised such that following this introduction, the next section is the literature and empirical review. The study's methodology and model specification will be presented, while the analysis, findings and discussion of findings will follow as the next section. Conclusion and policy recommendations will form the final part of the study.

Economic Growth and Development through Financial Integration

Financial integration can be a powerful driver of economic growth and development in EEs.. Financial integration can help countries achieve higher economic growth rates, reduce poverty and improve living standards by facilitating the flow of capital, increasing production, promoting investment and enhancing financial stability. Efficient allocation of resources that ensures that capital is allocated to its most productive uses is the positive impacts of financial integration to the economic development of emerging economies (Selvarajan & Ab-Rahim, 2020).

Through financial integration capital allocation can also be optimized by allowing funds to flow from countries with excess savings to those with promising investment opportunities. Risk is better managed by allowing investors to diversify their portfolios across countries. This helps in the redirection of exposure to specific risks and leading to more stable financial markets and institutions with lower capital costs. The integration of financial markets and institution are expected to accelerate the transmission of innovative ideas and technologies which should boost production of goods and services (Aman, Mallick & Nemliogu, 2024).

Financial integration leads to increased FDI inflows as foreign investors are more likely to invest in countries with open and integrated financial systems (Abbasor, 2019). Increased FDI stimulates of economic growth and development by financing infrastructure projects, expanding production capacity and creation of new job opportunities both directly and indirectly. Trade openness and increased stock market turnover ratio

characterised an emerging economy with efficiently managed financial integration (Vo, 2021). The integration of financial institutions in emerging economics fosters capacity building, reforms and modernization as these economies seek to strengthen their institutions to meet international standards and attract foreign investments.

Empirical Review

Aman, Mallick and Nemliogu (2024) examined how financial integration affects external price competitiveness as reflected in real effective exchange rates and whether this relationship is influenced by trade openness and institutional quality. Using data covering 35 developing economies over 40 years and employing econometric techniques, the study found that simultaneous trade and finance openness along with higher development level can lead to real exchange rate depreciation and improved export competitiveness. According to their findings, greater financial integration, trade integration and institutional quality can reduce transaction costs.

Boamah (2020) investigated the driving forces of emerging markets integration, using the dynamic conditional correlation techniques to estimate cross sectional and time series data. The author finds out that certain financial indicators (investment, domestic credit and financial services import) are positively linked to emerging markets integration while claims on government, current account balances, and financial services exports are negatively linked to emerging market integration. The study recommended diversification across emerging markets.

Salvarajan and Ab-Ralium (2020) examined the dynamic relationship between integration and economic growth in Asian countries. Considering the Asian financial crisis (1997-1998) the study employed data for the period 1980 – 2015 and investigated the financial – growth nexus before the Asian financial crisis and after the crisis, the findings indicated that a significant relationship exists between financial integration and economic growth.

Ifureze, (2023) examined the effect of financial integration on economic development in Nigeria, using the autoregressive distribute lag approach the study revealed financial integration has a significant impact on economic development in the short and long run. The study also revealed that economic indicators like foreign direct investment, gross fixed capital formation, trade openness, and money supply and private sector credits are all drives of financial integration which have significant effects on economic development.

Vo (2021) study sheds light on the determinants of international financial integration by investigating the impact of various factors such as capital controls, economic development, growth, institutions, trade openness financial development and tax policy. The results from the study provide robust evidence for the significance of these drivers in promoting international financial integration.

Abbasor (2019) used the pool mean group technique on data collected for a period 2000-2015, the regression results from the study which was aimed at investigation the role of financial liberalization trade integration, economic growth and global financial crises on financial integration shows that a statistical significant long run co-integration relationship exists between financial integration and the variables earlier specified. This implies that although with varying effects they can be considered as the determinants of financial integration.

Mail, Handoyo, Ridzuan and Razak (2020) analyzed the determinants of international financial integration in ASEAN – 5 from the year 2008 to 2017. With the use of generalized method of movements, the findings from the research work indicates that market capitalization, trade openness and GDP per capital have positive relationships with financial integration while inflation rate exhibits a negative relationship with financial integration.

Methodology and Specification of the Model

The study will employ the auto regressive distributed lag technique to investigate the factors that determine financial integration in emerging economics (using Nigeria as the case study). This technique is applied because of its flexibility and its usefulness for analysing time series data especially when exploring short run and long

run relationship and their dynamics. This will be achieved using secondary data sourced from central bank of Nigeria statistical bulletin (various issues) and World Bank data base.

Based on the objectives of the study, the functional model is specified as follows

Financial integration = f (foreign direct investment, trade balance, institutional quality and exchange rate)

Explicitly specified as

$$FIT = b_0 + b_1 FDI + b_2 TOB + b_3 ISQ + b_4 EXR + e_i$$

The ARDL technique can be used as the adopted estimation technique notwithstanding if the underlying variables are wholly 1(0), 1(1) or jointly co-integrated. ARDL has better estimated little sample features. This study designed the ARDL technique for appraisal as stated thus:

$$\Delta \text{LogFIT}_t = \alpha_0 + \sum_{k=1}^n \alpha_1 \Delta \text{LogFDI}_t + \sum_{k=1}^n \alpha_2 \Delta \text{LogTOB}_t + \sum_{k=1}^n \alpha_3 \Delta \text{LogISQ}_t + \sum_{k=1}^n \alpha_4 \Delta \text{LogEXR}_t + p_1 \Delta \text{LogFDI}_{t-k} + p_2 \Delta \text{LogTOB}_{t-k} + p_3 \Delta \text{LogISQ}_{t-k} + p_4 \Delta \text{LogEXR}_{t-k} + e_t$$

Analysis of Data, Results and Discussions

Descriptive statistics analysis

This section began by comprehensively comparing the descriptive statistics of the dataset employed in this study. Table 1 shows the result of the descriptive or summary statistics for both dependent, independent and control variables.

TABLE 1

Result of descriptive statistics

	FIT	FDI	TOB	EXR	ISQ
Mean	8.358621	3.335793	2.555172	236.5221	-1.092414
Median	7.400000	2.310000	1.790000	150.3000	-1.070000
Maximum	34.80000	8.840000	24.37000	1478.970	-0.840000
Minimum	2.400000	0.299000	-32.24000	21.88000	-1.510000
Std. Dev.	6.326335	2.588063	15.30680	275.3865	0.183841
Skewness	2.780242	0.801857	-0.555816	3.394478	-0.750260
Kurtosis	11.92278	2.426976	2.909709	15.57599	2.880350
Jarque-Bera	133.5630	3.504474	1.503021	246.7966	2.737931
Probability	0.000000	0.173386	0.471654	0.000000	0.254370
Sum	242.4000	96.73800	74.10000	6859.140	-31.68000
Sum Sq. Dev.	1120.630	187.5460	6560.347	2123457.	0.946331
Observations	29	29	29	29	29

Source: Researcher's presentation from E-views 10.0 statistical software

The mean values were: 8.35 for financial integration (FIT); 3.33 for foreign direct investment (FDI); 2.55 for trade balance (TOB); 236.52 for exchange rate (EXCR); and -1.09 for institutional quality (ISQ). The median values of the variables were: 7.40 for financial integration (FIT); 2.31 for foreign direct investment (FDI); 1.79 for trade balance (TOB); 150.30 for exchange rate (EXCR); and -1.07 for institutional quality (ISQ).

The maximum values were: 34.80 for financial integration (FIT); 8.84 for foreign direct investment (FDI); 24.37 for trade balance (TOB); 1478.97 for exchange rate (EXCR); and -0.84 for institutional quality (ISQ).

The minimum values were: 2.40 for financial integration (FIT); 0.29 for foreign direct investment (FDI); -32.24 for trade balance (TOB); 21.88 for exchange rate (EXCR); and -1.51 for institutional quality (ISQ).

From the summary output, the standard deviation values were: 6.32 for financial integration (FIT); 2.58 for foreign direct investment (FDI); 15.30 for trade balance (TOB); 275.38 for exchange rate (EXCR); and 0.18 for institutional quality (ISQ). From the E-view result, the skewness values of 0.80 for foreign direct investment (FDI); -0.55 for trade balance (TOB); and -0.75 for institutional quality (ISQ) respectively mirrored a negatively skewed distribution, implying that the distribution had a long-left tail with lower values than the sampled mean.

On the other hand, the skewness values of 2.78 for financial integration (FIT); and 3.39 for exchange rate (EXCR) respectively mirrored a positively skewed distribution, indicating that the distribution for these variables have a long right tail with higher values than the sampled mean. The results obtained in table 1 for the dataset show that the kurtosis values of 2.42 for foreign direct investment (FDI); 2.90 for trade balance (TOB); and 2.88 for institutional quality (ISQ) were less than 3.0000 required for a normal distribution. Hence, the data for these variables had a flattened curve and produced lower values than the sample mean.

Conversely, the coefficients of kurtosis of 11.92 for financial integration (FIT) and 15.57 for exchange rate (EXCR) respectively were greater than the 3.0000 required for normality. This indicated that the dataset was leptokurtic, meaning it produced higher values than normal. Given the results above, the JB values of 3.50 for foreign direct investment (FDI); 1.50 for trade balance (TOB); and 2.73 for institutional quality (ISQ) with their respective p-values of 0.17, 0.47, and 0.25, which are all greater than 0.05, suggested that the null hypotheses for all the variables were not rejected. This therefore indicated that the dataset was normally distributed.

TABLE 2

Unit root tests and order of integration: Group unit root test (levels)

Group unit root test: Summary

Series: FIT, FDI, TOB, EXR, ISQ

Exogenous variables: Individual effects

Automatic selection of maximum lags

Automatic lag length selection based on SIC: 0 to 3

Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	1.72406	0.9577	5	135
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.95914	0.8313	5	135
ADF - Fisher Chi-square	8.72356	0.5585	5	135
PP - Fisher Chi-square	10.1082	0.4311	5	140

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Source: Researcher's computation from E-views 10.0 statistical software

TABLE 3**Unit root tests and order of integration: Group unit root test (1st difference)**

Group unit root test: Summary

Series: FIT, FDI, TOB, EXR, ISQ

Exogenous variables: Individual effects

Automatic selection of maximum lags

Automatic lag length selection based on SIC: 0 to 4

Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.61410	0.0000	5	128
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.82595	0.0000	5	128
ADF - Fisher Chi-square	65.8711	0.0000	5	128
PP - Fisher Chi-square	71.1878	0.0000	5	135

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Source: Researcher's computation from E-views 10.0 statistical software

Group unit root test: Summary

Levin, Lin and Chu (LLC) (2002) develop a common unit root process; however, the Im, Pesaran and Shin W-stat, ADF-Fisher Chi-square, and PP-Fisher Chi-square tests were the selected group unit root tests considered for this study. From Table 2, the measurement of the group unit root in the data revealed that the series were not stationary at levels in the 1%, 5%, and 10% significance levels. However, when the series were subjected to further tests at first difference, the variables (FIT, FDI, TOB, EXR and ISQ) were found to have no unit root at the 1%, 5%, and 1% levels of significance, as shown in Table 3. Hence, the null hypothesis was rejected. Since the study has confirmed the stationarity of the variables, it means that the variables chosen for this study are suitable for further analysis.

ARDL long-run, error correction and short-run estimates

Since the ARDL has estimated improved small sample qualities, it can be used regardless of whether the underlying variables are solely I(0), I(1), or mutually co-integrated. This study aims to verify the claim that there is a chance of a long-term cointegration between/among the variables of the same unique order of integrations, with reference to the unit root test order of integrations "I(1)". Given the result in equation 1, the overall effect of the determinants of financial integration in emerging economies will be negative and non-significant in the long-run. Specifically, the ARDL long run estimates revealed that, all things being equal, a percentage increase in foreign direct investment (FDI) will lead to a non-significant positive effect on financial integration in emerging economies in the long-run.

$$\text{FIT} = (-0.998 \cdot \text{FDI} + 0.064 \cdot \text{TOB} + 1.256 \cdot \text{ISQ} + 0.149 \cdot \text{EXR} - 4.255) \text{ Eq. 1}$$

On the other hand, the ARDL long run estimates revealed that, all things being equal, a percentage increase in trade balance (TOB) will lead to a non-significant negative effect on effect on financial integration in emerging

economies in the long-run. Similarly, the ARDL long run estimates revealed that, all things being equal, a percentage increase in institutional quality (ISQ) will lead to a non-significant negative effect on effect on financial integration in emerging economies in the long-run. Lastly, the ARDL long run estimates revealed that, all things being equal, a percentage increase in exchange rate (EXR) will lead to a non-significant negative effect on effect on financial integration in emerging economies in the long-run.

TABLE 4**ARDL error correction dynamics**

ARDL Error Correction Regression

Dependent Variable: D(LFIT)

Selected Model: ARDL(1, 3, 4, 4, 4)

ECM Regression

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LFDI)	-0.130583	0.117089	-1.115244	0.3272
D(LFDI(-1))	-0.176702	0.082395	-2.144563	0.0986
D(LFDI(-2))	-0.172096	0.083183	-2.068888	0.1074
D(TOB)	0.030729	0.003813	8.059697	0.0013
D(TOB(-1))	-0.030108	0.005226	-5.760663	0.0045
D(TOB(-2))	-0.009351	0.003893	-2.401708	0.0742
D(TOB(-3))	-0.020308	0.005542	-3.664155	0.0215
D(ISQ)	0.410135	0.320032	1.281541	0.2692
D(ISQ(-1))	-1.344174	0.367688	-3.655749	0.0217
D(ISQ(-2))	-4.069482	0.516083	-7.885320	0.0014
D(ISQ(-3))	-1.282421	0.504084	-2.544062	0.0637
D(LEXR)	-0.438905	0.172331	-2.546873	0.0635
D(LEXR(-1))	-1.545756	0.200212	-7.720593	0.0015
D(LEXR(-2))	-1.911268	0.227585	-8.398035	0.0011
D(LEXR(-3))	-1.517371	0.222030	-6.834077	0.0024
CointEq(-1)*	-0.936157	0.090298	-10.36741	0.0005

Source: Researcher's computation from E-views 10.0 statistical software

Additionally, the error term adjustment coefficient (COINTEQ-01) is negative and significant at the 5% significance level, as shown by the ARDL in Table 4. It may be concluded that there is a stable long-term cointegration relationship between the variables because a departure of 93.61 percent from the short-term imbalance is balanced in the long-term and was statistically significant.

TABLE 5**ARDL short-run estimates**

Dependent Variable: LFIT

Method: ARDL

Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (4 lags, automatic): LFDI TOB ISQ LEXR

Fixed regressors: C

Selected Model: ARDL(1, 3, 4, 4, 4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LFIT(-1)	0.063843	0.243316	0.262389	0.8060
LFDI	-0.130583	0.368158	-0.354694	0.7407
LFDI(-1)	-0.981013	0.294170	-3.334850	0.0290
LFDI(-2)	0.004606	0.216135	0.021310	0.9840
LFDI(-3)	0.172096	0.160620	1.071452	0.3443
TOB	0.030729	0.008093	3.796776	0.0192
TOB(-1)	-0.000422	0.009021	-0.046767	0.9649
TOB(-2)	0.020757	0.014644	1.417429	0.2293
TOB(-3)	-0.010958	0.015417	-0.710758	0.5165
TOB(-4)	0.020308	0.013802	1.471373	0.2152
ISQ	0.410135	0.975495	0.420438	0.6958
ISQ(-1)	-0.578457	1.001320	-0.577694	0.5944
ISQ(-2)	-2.725308	1.285100	-2.120697	0.1013
ISQ(-3)	2.787061	1.169953	2.382198	0.0758
ISQ(-4)	1.282421	1.431359	0.895947	0.4209
LEXR	-0.438905	0.486278	-0.902581	0.4178
LEXR(-1)	-0.966806	0.964816	-1.002062	0.3730
LEXR(-2)	-0.365512	0.432479	-0.845155	0.4456
LEXR(-3)	0.393897	0.432241	0.911290	0.4137
LEXR(-4)	1.517371	0.395374	3.837806	0.0185
C	3.984136	4.874596	0.817327	0.4596
R-squared	0.980898	Mean dependent var		2.030712
Adjusted R-squared	0.885388	S.D. dependent var		0.575720
S.E. of regression	0.194907	Akaike info criterion		-0.585172
Sum squared resid	0.151955	Schwarz criterion		0.438683
Log likelihood	28.31466	Hannan-Quinn criter.		-0.301198
F-statistic	10.27009	Durbin-Watson stat		2.331495
Prob(F-statistic)	0.017896			

*Note: p-values and any subsequent tests do not account for model Selection.

Source: Researcher's computation from E-views 10.0 statistical software

Further analysis of the ARDL result in Table 5 revealed that the value of the intercept which is 3.98 revealed that financial integration in emerging economies increased by 3.98 percent in the short run when all other variables (FDI, TOB, ISQ and EXR) are held constant and was statistically non-significant at five percent level of significance. Further examination of the ARDL short-run estimates revealed that changes in the current period value of foreign direct investment (FDI) had a non-significant negative effect on financial integration in emerging economies in the short-run; previous lagged period value of foreign direct investment (FDI) had a

significant negative effect on financial integration in emerging economies; the previous two lagged period and previous three lagged period values of foreign direct investment (FDI) had a non-significant positive effect on financial integration in emerging economies respectively.

Further examination of the ARDL short-run estimates revealed that changes in the current period value of trade balance (TOB) had a significant positive effect on financial integration in emerging economies in the short-run; previous lagged period and previous three lagged period values of trade balance (TOB) had a non-significant negative effect on financial integration in emerging economies respectively; the previous two lagged period and previous four lagged period values of trade balance (TOB) had a non-significant positive effect on financial integration in emerging economies respectively.

Further examination of the ARDL short-run estimates revealed that changes in the current period, previous three lagged period and previous four lagged period values of institutional quality (ISQ) had a non-significant positive effect on financial integration in emerging economies respectively in the short-run; while the previous lagged period and previous two lagged period values of institutional quality (ISQ) had a non-significant negative effect on financial integration in emerging economies respectively.

Lastly, further examination of the ARDL short-run estimates revealed that changes in the previous three lagged period value of exchange rate (EXR) had a non-significant positive effect on financial integration in emerging economies in the short-run; previous four lagged period value of exchange rate (EXR) had a significant positive effect on financial integration in emerging economies; the current period, previous lagged period and previous two lagged period values of exchange rate (EXR) had a non-significant negative effect on financial integration in emerging economies respectively.

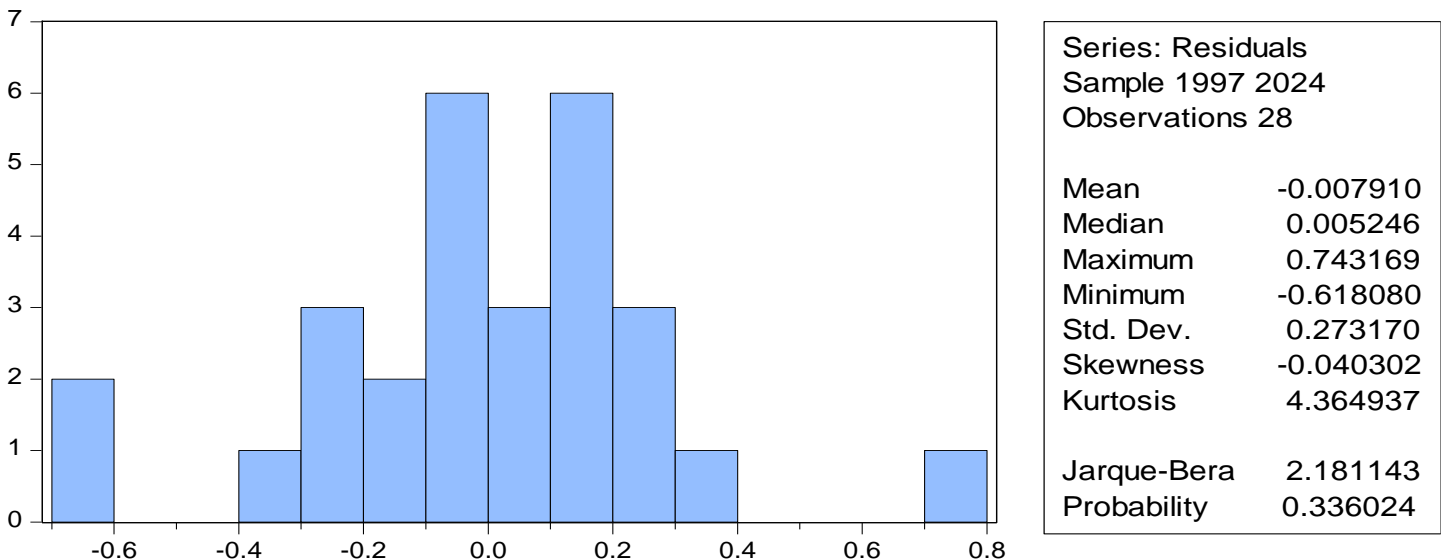


Fig. 1: Histogram normality test

Histogram normality test

The ARDL model's estimations are tested for normality using the histogram normality test. To ascertain whether or not the model's residuals were normally distributed, the Jarque-Bera statistics were used. In order for the model's residuals to be normally distributed, the Jarque-Bera statistics probability has to be greater than five percent (0.05). This is due to the null hypothesis, which asserts that the model's residuals follow a normal distribution. The Jarque Bera statistics of 2.181 with its corresponding probability of 0.3360 (33.60 per cent), more than 0.05 (5 per cent) as shown in figure 2, meant that the residuals of the model is normally distributed and this is desirable as this met the normality assumption of classical ordinary least square (OLS) framework.

Conclusion and Recommendation

This study aimed to identify economic, financial and institutional factors that significantly influence the level of financial integration in emerging economies. The ARDL longrun estimates revealed an increase in foreign direct investment will have a positive and non significant on financial integration in emerging economies. Other specified determining factors (trade balance, institutional quality and exchange rate) showed a non significant effect on financial integration contrary to economic apriori expectations. Conversely, the short run estimates revealed that foreign direct investment had a significant negative effect and trade balance a non significant negative effect. Institutional quality and exchange rate were found to have positive impact on financial integration revealing a strong impact as determinant of financial integration in emerging economies. This study consequently recommends the following policies for trade balance, institutional quality and exchange rate to be positive and significant factors for financial integration in emerging economies

- a. Promotion of trade agreements through favourable negotiations; this will help increase market access and promote economic cooperation. Efficient procedures in customs and tariffs reduction should also go a long way in facilitating trade investments
- b. A reinforced regulatory quality/framework that would ensure stability and transparency in financial markets and institutions; this is expected to strengthen institutional capacity for effective regulation and supervision of financial markets
- c. A balance between monetary policy independence and exchange rate stability should be managed through a float exchange rate system; this should curb exchange rate volatility and create strong financial integration

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