

RELATIONSHIP BETWEEN FINANCIAL INCLUSION, TRADE, AND ECONOMIC GROWTH

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ABSTRACT

This study inspects relation between financial inclusion, trade, and economic growth in twenty-four developing countries namely Algeria, Azerbaijan, Bangladesh, Botswana, Brazil, Colombia, Egypt, Kuwait, Madagascar, Mauritania, Mauritius, Namibia, Nigeria, Moldova, Pakistan, Paraguay, Peru, Rwanda, Tajikistan, Tanzania, Thailand, Uganda, Vanuatu, Zambia from period 2004-2020(both inclusive) by scrutinizing effect of financial inclusion and trade on economic growth with an emphasis on whether financial inclusion catalyzes 'the influence of trade on economic growth by employing Newey West standard approach, Feasible Generalized Least Square, Pooled Ordinary Least Square regression, Fixed Effect Model and Random Effect Model. Results found a strong, significant, and positive association linking financial inclusion and trade with economic growth. Policy implications are developing countries should frame and execute pro-growth policies to enhance financial inclusion which will boost the impact of trade on growth. Moreover, developing economies should establish more multilateral trade agreements, diversify their export baskets and ensure that trade happens through formal financial institutions

Keywords: Financial inclusion index, Trade, Economic growth, FGLS.

JEL Codes: E01, F1, G53

INTRODUCTION

Financial inclusion (FI) plays a critical part in fostering trade and economic growth. The financial sector allows the free movement of funds and also improves funds allocation. FI enables the availability of credit necessary for starting one's trading business which leads to a decline in poverty; hence, boosting economic growth (Sethi & Sethy, 2018). Moreover, trade integrates one with global value chains, thus, emerging as an avenue to accelerate economic growth. FI has received a boost with the growth of e-commerce and the emergence of organizations like the Global Partnership for Financial Inclusion (GPFI) and the partnership for Financial Inclusion Program in Africa. The inclusion of less developed countries on the trade landscape actively began post-1986 but before that, the scope of multilateral trade pacts was limited only to industrialized economies. It is since 1995 the World Trade Organization (WTO) has taken steps to benefit developing economies by expanding market access and lowering trade barriers.

Therefore, the connection between financial inclusion, trade, and economic growth is significant research, especially concerning developing economies as they lag behind developed nations because of low financial inclusiveness and less explored trade potential as more than 43 developing economies rely only on one agricultural produce for more than 20% of their total export revenue (FAO, 2015). The Covid-19 pandemic has also proved to be a significant challenge for developing economies with their trade volume declining by 16.9% in 2020 (UNCTAD, 2020). In this vein, the value of the financial inclusion index (FII) is calculated to be as

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low as 0.31 for Moldova in the year 2020 with South American economies having accelerated while their Asian counterparts steadily improved their financial inclusion index over the years as per this study.

High FI enlarges trade volume both by enabling access to money and through market penetration as affirmed by international trade theory. FI influences economic growth through resource mobilization (Sethi & Sethy, 2018) by reducing information asymmetry and investment risk through efficient risk allocation (Hajilee & Niroomand, 2019). Moreover, high FI reduces poverty and attracts investment, thus, spurring economic growth. World Bank identified FI as an important enabler in decreasing poverty even then 30% of the global populace remains financially excluded (GPFI, 2011). The demand-following theory contends that the financial sector follows economic growth (Gennaioli et al., 2013). However, instead of a one-direction flow, reciprocal theory notes bidirectional causality between FI and economic growth (Evans & Lawanson, 2017)

Furthermore, trade influences economic growth by facilitating countries to capitalize on their comparative advantage by producing goods in which they face lower opportunity costs through the diffusion of knowledge and technology (Keho, 2017) as described by endogenous growth theory. Despite a great emphasis on the significance of FI in enhancing trade and bolstering economic growth, developing countries still lag behind developed ones in benefitting from financial inclusiveness. Additionally, there is a dearth of literature on developing countries that explores the impact of FI and trade openness on economic growth (Maune, 2018). This is one of the main reasons for keeping developing countries as the purview of this study. Studies like those of (Chinodo, 2020) and (Zahonogo, 2017) have concluded that FI and trade benefit economic growth. In contrast, (Maune, 2018) noted that FI and trade openness decelerate economic growth in Zimbabwe from 1980 to 2016. Hence, results remain mixed and inconclusive regarding the capability of FI and trade to guide economic growth (Lawal et al., 2016)

Significance of the study

To the best of our knowledge, no study has been done so far to scrutinize the association between FI, trade, and economic growth by employing FGLS, Newey West standard approach, Fixed Effect Model (FEM) and Random Effect Model (REM), Pooled Ordinary Least Square (POLS) on a panel of these 24 selected developing countries: Algeria, Azerbaijan, Bangladesh, Botswana, Brazil, Colombia, Egypt, Kuwait, Madagascar, Mauritania, Mauritius, Namibia, Nigeria, Moldova, Pakistan, Paraguay, Peru, Rwanda, Tajikistan, Tanzania, Thailand, Uganda, Vanuatu, Zambia over the time period 2004-2020(both inclusive).

This study is an extension of the previous study in terms of increasing the number of regions and the period for which the Financial Inclusion Index (FII) was previously constructed. Existing studies have constructed FII for Asian and African countries only till the year 2015 whereas this paper covers developing countries located in Asia, Africa, the Middle East, Europe, South America, and Australia.

Another noteworthy contribution of this research is that FII constructed in this study according to the (Sarma, 2008) methodology overcomes problems of limited countries, gaps, and restricted periods that exist in the construction of the Global Financial Inclusion Index (GFII). FII constructed in this paper covers the time from 2004 to 2020 and overcomes the gap problem by using alternative years. Moreover, FII constructed differs from GFII in FII being comprehensive, robust, comparable across economies, and effective enough to monitor financial inclusion policy initiatives across time (Sarma, 2012). Indicators used to construct FII in this research are based on availability, penetration, and usage dimensions while GFII is built on dimensions of financial services, usage of financial services, and quality of the products and service delivery. Furthermore, FII constructed in this paper employs data on annual basis from World Bank Development Indicator (WDI) and Global Financial Development databases whereas GFII selects data on financial inclusion indicators on a triennial, annual and periodic basis from sources other than these. Years selected in this study are from 2004 to 2020 because data on six indicators of financial inclusion used to build FII were only available for the years 2004 and onwards. The fundamental purpose of selecting these developing countries is to cover a maximum number of regions, to present a holistic view of the link between FI, trade, and economic growth due to limited researches on developing economies in this area.

Objectives of paper

This study aims to achieve the following objectives

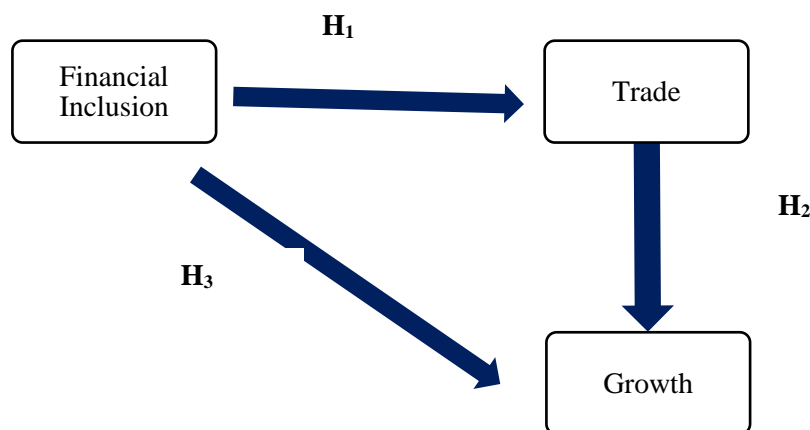
1. To explore the causal association between FI, trade, and economic growth
2. To inspect the influence of FI and trade on economic growth in 24 developing countries over the period 2004-2020 (17 years) for the first time by deploying FGLS, Newey West standard method, POLS regression, FEM, and REM on the abovementioned selected countries.

Research Hypothesis

The study tests the following three hypotheses

- H₁: Financial Inclusion (FI) causes trade
- H₂: Trade leads to economic growth
- H₃: Financial inclusion influences economic growth

Figure No. 1: Theoretical framework and possible causality



Data Source: Author's illustration

The question that remains unanswered is whether FI is the main channel for the effect of trade on economic growth to take place in selected developing countries. It is predicted that FI and trade will bolster economic growth for all selected countries.

Organization of paper

Section 1 is composed of an introduction, the significance of this research, and objectives. Section 2 contains a review of literature. Section 3 encompasses econometric methods and a description of variables. Section 4 covers results and discussion. This is followed by Section 5 which discusses the conclusion, policy recommendations, and areas for future research.

REVIEW OF LITERATURE

With the emergence of global value supply chains, financial inclusion (FI) has been playing a pivotal role in creating and maintaining regional connectivity. This literature review presents an overview of the connection between FI, trade, and economic growth.

Financial inclusion, Trade, and Economic growth nexus

Existing researches report ambiguous results concerning the influence of FI and trade on economic growth. (Chinodo, 2020) applied granger causality and co-integration techniques on a panel of 30 African countries and concluded the affirmative and significant impact of FI on the trade-growth nexus (Bojanic, 2012) also found a long-run relationship among these constructs in Bolivia from 1940-2010. Likewise, (Lawal et al., 2016) deployed Autoregressive Distributive Lag (ARDL), co-integration technique, and Error Correction Model (ECM) in Nigeria from 1981 to 2013 and discovered a significant long-term association among some measures of FI, trade, and economic growth. (Maune, 2018) noted the detrimental impact of FI and trade openness on economic prosperity in Zimbabwe from 1980-2016.

Financial inclusion and Economic growth nexus

(Sethi & Sethy, 2018) concluded the positive impact of FI on economic growth in India. (Sharma, 2016) performed Vector Auto-regression (VAR) model and VAR granger causality on India from 2004-2013. Results found a positive relationship between economic growth and some dimensions of FI. In stark contrast, (Nkwede, 2015) applied ordinary least square (OLS) regression on Nigeria taking annual data from 1981-2013, and found a negative influence of FI on economic progress. Thus, the result of FI on economic growth remains ambiguous.

Trade and Economic growth nexus

Trade creates economic incentives for economies. In the short run, trade allows efficient resource allocation and facilitates technology development via the import of high-tech products (Gries & Redlin, 2020) in long term. Trade forces countries to adopt pro-trade measures to combat competition, thus, enhancing economic growth

(Irwin, 2019). However, studies confirm that trade does not necessarily always result in accelerated economic growth. This is because of financial and technological constraints less developed countries encounter when adopting technologies from their more advanced counterparts (Zahonogo, 2017) such as difficulty in the implementation of technology in local scenarios (Gries & Redlin, 2020).

Existing studies establish that trade benefits as well as diminish economic growth. (Keho, 2017) noted the beneficial effect of trade openness on economic growth both in the long-run and short-run in Cote d'Ivoire from 1965 – 2014. However, (Kim et al., 2018) showed that the economy experiences escalated economic growth from trade only if it is present above a certain income threshold while (Guei & Roux, 2019) concluded that trade decreases economic growth. (Fenira, 2015) executed OLS regression on 82 developing countries from 1996- 2012 and demonstrated that trade significantly but weakly contributes to economic growth because of the 'presence of preference erosion phenomenon'

Financial inclusion and trade nexus

By becoming financially inclusive, firms get access to payments and credit allowing them to expand their business and offset risks. This is supported by (Hajilee & Niroomand, 2019) that applied ARDL and Nonlinear Autoregressive Distributive Lag (NARDL) on 18 emerging economies and reported a significant influence of FI on trade openness.

DATA AND METHODOLOGY

Growth Model: Influence of FI and Trade on Economic Growth

The growth model examines the influence of FI and trade on economic growth. Following is a function of the growth model

GROWTH= f (FI, TRADE, POP, INF, INTEREST)

After taking a log transformation of all variables in the growth model in order to achieve constant variance, the growth model becomes

$$\text{Growth}_{it} = \beta_0 + \beta_1 \text{Financial Inclusion}_{it} + \beta_2 \text{Trade}_{it} + \beta_3 \text{Population}_{it} + \beta_4 \text{Inflation}_{it} + \beta_5 \text{Interest rate}_{it} + U_{it} \quad (1)$$

Equation 1 is estimated by Newey West standard approach, FEM, REM, and POLS techniques from 2004 to 2020.

Summary of variables

Growth (ln GROWTH)

Growth denotes economic growth. It is measured as Gross Domestic Product (GDP Constant 2010 US\$). (Maune, 2018) has also taken economic growth as a dependent variable

Trade (ln TRADE)

Trade is taken as a summation of exports and imports of goods and services (Constant 2010 US\$). (Tahir & Khan, 2014) also took trade as an independent variable in the growth model and concluded that trade openness significantly influences economic growth in developing countries of Asia.

Financial Inclusion (ln FI)

The financial inclusion index (FII) is developed by taking six indicators of financial inclusion into account namely

1. Automated Teller Machines (ATMs) per 100,000 adults
2. Borrowers from commercial banks per 1000 adults
3. Depositors with commercial banks per 1000 adults
4. Commercial bank branches per 100,000 adults
5. Domestic credit to the private sector by banks (% of GDP)
6. Bank deposits (% of GDP)

These indicators were also used by (Sarma, 2008) for the construction of FII. (Chinodo, 2020) found that FI boosts economic prosperity in 30 African countries

Construction of Financial inclusion index

In this study FII is constructed using the methodology suggested by (Sarma, 2008). (Sarma, 2012) mentioned that an appropriate FII should be comparable across economies at a point in time and is capable to observe changes in financial inclusion policies, therefore, a single financial inclusion indicator fails to capture nuances

of financial inclusion. FII constructed in this research overcomes problems (gaps) that arise in the construction of GFII. GFII is constructed by covering data only from 2011-2017 and only a few countries are part of its scope whereas FII constructed in this study covers data from 2004 to 2020 and has no gaps. Six indicators are considered to develop this comprehensive and mathematically robust FII. Taking only bank accounts as a singular indicator of financial inclusion would give a flawed financial inclusion measure as some bank accounts remain dormant meaning unused for months or even years indicating a lack of useful financial activity (Mbutor, 2013)

The construction of FII is done below as per (Sarma, 2008) methodology

$$E_i = \frac{a_i - m_i}{M_i - m_i} \quad (2)$$

Equation 2 gives E_i , the Euclidean distance of each FI indicator. This study employs six FI indicators mentioned above.

In Equation 2, i represents indicators of FI taken in this study. Here six FI indicators are considered. Therefore, $i = 1, 2, 3, 4, 5, 6$. E_i denotes Euclidean distance from the worst point (meaning the point of zero financial inclusion). The a_i stands for the actual value of FI indicator; here a_i is the value of year 2004 for a particular financial inclusion indicator. The m_i means the minimum value of a particular financial inclusion indicator for a specific country among financial inclusion indicator values of that country from 2004 to 2020. M_i means the maximum value of a financial inclusion indicator for a specific country among financial inclusion indicator values of that country from 2004 to 2020. For Example, the E_i value for ATMs per 100,000 adults is denoted by d_1 in Equation 3 below

$$FII_i = 1 - \frac{\sqrt{(1 - d_1)^2 + (1 - d_2)^2 + \dots + (1 - d_n)^2}}{\sqrt{n}} \quad (3)$$

In Equation 3, FII represents financial inclusion index, the letter ' i ' means country ' i ', and ' n ' stands for the number of indicators. Six financial inclusion indicators are taken in this empirical research; therefore, $n = 1, 2, 3, 4, 5, 6$. Equation 3 is run for one country at a time after incorporating all six financial inclusion indicators of that particular country. Similarly, this equation will be run for 24 countries taking one country at a time to calculate FII of each selected country. The value of FII ranges from 0 to 1. Higher the value of FII, higher the financial inclusion.

Population (ln POP)

The population is denoted by the total labour force. (Dao, 2012) explored the influence of population growth on economic growth and reported that population growth impacts per capita GDP in 43 developing countries.

Inflation (ln INF)

Inflation is measured by consumer prices, annual %. (Kasidi & Mwanemela, 2013) used inflation as an independent construct and reported the adverse impact of inflation on economic growth in Tanzania.

Interest Rate (ln INTEREST)

Interest rate is signified by the lending interest rate (%). (Idris, 2019) found bi-directional causal link between interest rate and economic growth in Nigeria.

U stands for error term, ' i ' represents cross section unit consists of 24 selected countries and ' t ' symbolizes time period

Data and data sources

Data for variables are taken from World Bank Development Indicators (WDI) and Global Financial Development databases. Data for trade, growth, inflation, population, and interest rate are obtained from WDI, and for financial inclusion is gathered from WDI and Global Financial Development databases.

Econometric techniques

Panel estimation techniques

This study used panel data from 2004 to 2020 from 24 developing countries and deployed Newey West standard approach, FEM, REM and POLS on growth model from 2004-2020.

Model Breaks

The growth model is broken into two time periods 2004-2012 and 2013-2020 to incorporate changes that directly impacted banks and other financial institutions due to the advent of BASEL-Accord. BASEL Accord

refers to banking supervision introduced by Banking Committee on Banking Supervision (BCBS) that required banks to adhere to minimum capital requirements, internal risk ratings and disclose all material information for market discipline to prevail.

Another reason for breaking the model from 2013 to 2020 is to incorporate changes due to lowering of the lending rate. Since the lending interest rate affects FII; therefore, it is taken as part of this study.

Diagnostic tests

Breusch Pagan Lagrangian Multiplier test, Hausman test, Variance Inflation Factor (VIF), Modified Wald test, Wooldridge test, Pesaran test are applied on panel data in order to select appropriate panel estimation techniques.

Levin Chu unit root test is taken from years 2004-2012 and from years 2013-2020 to incorporate changes that occurred after the introduction of BASEL Accord.

RESULTS AND DISCUSSION

Growth Model: Influence of FI and Trade on Economic Growth

Four estimation techniques have been employed on the growth model (2004-2020) namely Newey West approach, FEM, REM and POLS regression.

Descriptive Statistics

Table 1 displays log values of variables in growth model (2004-2020)

	Mean	Std. Dev.	Median	Max	Min
Growth	24.426	1.82	24.177	28.516	20.066
Financial inclusion	-1.172	0.923	-0.92	-0.098	-6.025
Trade	23.998	1.62	23.722	27.068	19.998
Population	15.963	1.95	16.497	19.153	11.356
Inflation	1.725	0.681	1.807	3.385	-1.671
Interest rate	2.672	0.586	2.757	4.094	1.082

Correlations

Table 2 displays that all variables positively correlate individually with economic growth. Inflation and interest rate have significant positive links while trade, financial inclusion, and population have positive but insignificant associations with economic growth.

Variables	1	2	3	4	5	6
1 Growth	1.000					
2 Financial inclusion	0.138	1.000				
3 Trade	0.970	0.133	1.000			
4 Population	0.779	0.043	0.679	1.000		
5 Inflation	0.025	-0.135	-0.047	0.211	1.000	
6 Interest rate	0.030	-0.160	-0.090	0.219	0.419	1.000

Panel estimation and diagnostic test results of Growth Model from 2004-2020

The probability value of the Breusch Pagan Lagrangian multiplier test came less than 0.05 directing that FEM/REM is preferred over POLS. Following this, the probability value of the Hausman test came less than 0.05, resultantly, FEM is found to be an apt estimation technique. However, the Modified Wald test, Wooldridge test, and Pesaran test diagnostic tests showed a probability value of less than 0.05 revealing the existence of heteroscedasticity, autocorrelation, and cross-sectional dependence Value of Variance Inflation Factor (VIF) was reported to be less than 5 signalling an absence of multicollinearity in this model. Therefore, Newey West standard approach is employed on the growth model (2004-2020) in order to remove heteroscedasticity, autocorrelation, and cross-sectional dependence

Newey West standard approach on growth model (2004-2020)

Newey West standard approach applied to the growth model (2004-2020) portrays that financial inclusion, trade, population, and interest rate exert significant influence on economic growth as their significance lies between being highly significant to moderately significant (1% to 5%). Additionally, financial inclusion, trade,

population, and interest rate positively correlated with economic growth. Only inflation appears to have an insignificant and negative association with economic growth. Standard errors of all independent variables are low; indicating the reliability of results. Moreover, since variables are in natural logarithms form, therefore, results denote elasticities as 1% escalation in financial inclusion will boost economic growth by 5.6%. Similarly, a 1% rise in trade will boost economic growth by 95.8%. Likewise, a 1% rise in population and interest rate will augment economic growth by 17.9% and 21.2% respectively. A 1% surge in inflation causes economic growth to plummet by 0.1%. Lags have been taken when deploying the Newey West standard approach to account for the stationarity of variables. Heteroscedasticity, autocorrelation, and cross-sectional dependence in the growth model are removed by the application of the Newey West standard approach. The conclusion of the growth model is based on the results of the Newey West standard approach.

Fixed Effect Model (FEM) on growth model (2004-2020)

The FEM on the growth model exhibits that all explanatory variables are high to moderately significant as their significance level ranges from 1% to 5%. FI is found to boost economic growth. This is because FI acts as a precursor for economic growth because finance alleviates poverty and raises the standard of living (Maune, 2018). Trade's association with economic growth is concluded as positive and significant. By importing capital goods, developing countries are in a better position to increase manufacturing activities and industrial output; hence, increasing economic growth. A study by (Tahir & Azid, 2015) also supports these results in developing countries. The population was also found to bolster economic growth. This is because a huge population means a large market for goods causing increasing returns to human capital and knowledge (Mulok et al., 2011). Findings show that inflation has a significant but negative association with economic growth as explained by endogenous growth theory that the growth rate is dependent on the rate of return on capital. Inflation reduces the return on capital which diminishes capital accumulation and ultimately growth rate (Enejoh & Ahmad, 2017). Furthermore, the interest rate was found to depress economic growth. This is because a rise in interest rates is accompanied by a decline in the demand for financial assets. This leads to a decrease in economic activities (Idris, 2019)

Random Effect Model (REM) on growth model (2004-2020)

REM demonstrates that FI, trade, and population are positive influencers of economic growth. F statistics of 199.0 denotes that the overall significance of the model is very high. Moreover, Akaike Information Criteria (AIC) and Bayesian Information Criteria (BIC) figures signal that the model fits the data very well and the model has a strong tendency to predict economic growth. Overall R-square 0.899 points towards the fact that 89.9% of the data fits the model. Low standard errors of explanatory constructs indicate the reliability of results. Only inflation and interest rate were found to have an adverse influence on economic growth.

Pooled Ordinary Least Square (POLS) on growth model (2004-2020)

POLS employed on the growth model represents that FI, trade, population, and interest rate boost economic growth. All the explanatory variables have a significance level below 1%. Low standard errors and an R-square of 0.972 indicate that results are consistent and 97.2% of data fits the model. Probability of 0.000 signals that there is zero chance that the results are by mere coincidence. Only the inflation-economic growth link was noted as negative and insignificant.

Discussion of results

Results based on Newey West standard approach applied to the growth model (2004-2020) demonstrate that FI accelerates economic growth by speeding up the flow of funds, allowing better allocation of resources, and reduction of investment risk (Hajilee & Niroomand, 2019). Hence, generating lucrative opportunities that boost economic growth.

Trade was found to enhance economic growth as endorsed by endogenous growth theory and Heckscher Ohlin theory. Trade not only increases demand for a country's exports but also causes its exports to face international competition; which requires the adoption of new technology (Gries & Redlin, 2020). Population is reported to have a positive and significant link with economic growth as concluded by (Tartiyus et al., 2015). This positive association is consistent with the Solow growth model which states that doubling the population doubles the level of output. Moreover, inflation was found to exercise an inverse and statistically insignificant influence on economic growth also shown by (Kasidi & Mwanemela, 2013). Inflation depresses buying power of consumers, leading to fewer economic transactions. Results noted that interest rate accelerates economic growth as displayed by (Idris, 2019). Lower interest rate encourages consumption and borrowing due to the low cost of borrowing. Hence, escalating economic growth

Unit root test results (2004-2020)

Levin Chu unit root test applied on the growth model (2004-2020) displayed in Tables 3 and 4 reveal that growth, trade, financial inclusion, population, and interest rate are stationary at level. While growth and population are non-stationary at first difference.

Table No. 3: Levin Chu unit root test on Growth model 2004-2020 (At level)

Variables		Trade	Financial inclusion	Growth	Inflation	Interest Rate	Population
Levin Chu unit root test	p-value	0.00	0.00	0.00	0.00	0.0008	0.0006
	Statistics	-5.47	-14.1	-5.55	-4.22	-3.15	-3.24

Table No.4: Levin Chu unit root test on Growth model 2004-2020(At first difference)

Variables		Trade	Financial inclusion	Growth	Inflation	Interest Rate	Population
Levin Chu unit root test	p-value	0.0004	0.000	0.053	0.000	0.00	0.999
	Statistics	-3.32	-7.79	-1.6	-13.4	-7.98	3.69

Unit root tests (2004-2012) and (2013-2020)

Levin Chu unit root test was run on the growth model from years 2004 to 2012 and 2013 to 2020 and results illustrated in Tables 5 and 6 show that all constructs were found stationary at level.

Table No. 5: Levin Chu unit root test on Growth model 2004-2012(At level)

Variable		Trade	Financial inclusion	Growth	Inflation	Interest Rate	Population
Levin Chu unit root test	p-value	0.00	0.00	0.00	0.00	0.00	0.065
	Statistics	-7.34	-13.93	-6.42	-7.80	-4.78	0.38

Table No 6: Levin Chu unit root test on Growth model 2013-2020 (At level)

Variables		Trade	Financial inclusion	Growth	Inflation	Interest Rate	Population
Levin Chu unit root test	p-value	0.00	0.00	0.00	0.00	0.001	0.03
	Statistics	-6.73	-29.67	-4.35	-5.50	-2.98	-1.79

Summary Statistics

Table 7 presents that financial inclusion appears to be highly significant in all these four regression methods with a significance of less than 1%. Furthermore, it is also exhibited that FI has a significant positive association with economic growth in all these aforementioned four approaches. This was also concluded by (Chinodo, 2020)

Table No. 7: Summary Statistics of Growth Model (2004-2020)

Financial inclusion: Focus variable in Growth Model				
Variable	POLS	FEM	REM	Newey West standard approach
Coefficient	0.056	0.094	0.073	0.056
Standard error	0.019	0.009	0.008	0.023
Significance	0.003***	0.000***	0.000***	0.015**
Note: ***, ** and * are significant at `1%,5% and 10% respectively				

Table 8 illustrates that trade (focus variable) appears to be highly significant in all four regression methods with a significance level of less than 1%. Also, trade has a positive relationship with economic growth endorsing that trade strongly and positively boosts economic growth which is also affirmed by (Keho, 2017)

Table No.8: Summary Statistics of Growth Model (2004-2020)

Trade: Focus variable in Growth Model				
Variable	POLS	FEM	REM	Newey West standard approach
Coefficient	0.958	0.231	0.484	0.958
Standard error	0.015	0.041	0.038	0.032
Significance	0.000***	0.000***	0.000***	0.000***

Note: *, ** and * are significant at 1%,5% and 10% respectively**

Results of Growth Model break (2004-2012)

FGLS is employed on growth model break (2004-2012) to remove heteroscedasticity and autocorrelation from this model. FGLS results report that FI's impact on economic growth is significant and positive and the trade-economic growth association is noted as positive and significant. These results are similar to Newey West's results on the growth model (2004-2020)

Results of Growth Model break (2013-2020)

Newey West standard approach is employed on growth model break (2013-2020) which removed heteroscedasticity, autocorrelation, and cross-sectional dependence from this model. Results portray that the effect of FI on economic growth is significant and trade has a significant and beneficial effect on economic growth. These results are similar to Newey West standard results on the growth model (2004-2020)

CONCLUSION

This study showed that a strong, significant, and positive nexus exists between FI and trade on economic growth as FI stimulates economic growth by trade expansion through a swift flow of funds. Both FI and trade boost economic growth.

Population and interest rate are positively and significantly correlated with economic growth so population growth programmes should be enhanced. Moreover, inflation has an inverse and statistically insignificant influence on economic growth.

POLICY RECOMMENDATIONS

- Developing countries should deepen their financial inclusion and develop efficient financial institutions
- Developing economies must forge more multilateral trade agreements by incorporating financial institutions as transaction channels for trade to take place.
- Export baskets and export markets should be diversified.

Due to time and resource limitations, authors could not segment trade into sectors (like manufacturing, industry, and services sectors). Future research can be carried out in this area in other or the same countries.

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