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The effect of Remittances on Economic Growth; Evidence from Developing Countries

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Abstract
The study examines at the connection between remittances, financial access, and economic growth. The study's specific objective is to find out whether or not remittances encourage economic growth and how much of an impact they have on it when taking financial services accessibility into account. The present study employs panel data estimate approaches to examine the correlation among financial access, remittances, and economic growth in twenty developing nations from 2000 to 2023. According to the findings, financial access and remittances have a major positive impact on economic growth.

Keywords: Financial access, Remittance and Economic growth

INTRODUCTION

Remittances are the transfer of money or goods by foreign workers to individuals in their home countries. The majority of these are remittances being sent by migrants who work outside the country that uses legal tender in order to help out their family or community. Remittances are an important revenue source for remittance recipients who often use it for living essentials like food, education, and healthcare, they can also contribute significantly to poverty alleviation as well as economic development in developing countries (World Bank, 2023). The circulation of foreign remittances, i.e. the money sent by migrant workers for the purposes of their families in their countries of origin, is a different financial flow that should not be disregarded especially for developing countries such as themselves since globalization has carried out today to shape a more integrated world economically speaking. In contrast to most other external financial inflows such as Foreign Direct Investment (FDI) or Official Development Assistance (ODA), remittances sent by migrant workers have outpaced these private trans border transactions in terms of the pace of their rise and impact, becoming a main source of support for millions of families in most countries (Freund, 2008). Remittances continue to grow, but at a slower pace Remittance Flows Continue to Grow in 2023, Albeit at a Slower Pace According to the World

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Bank estimates, remittances flows to low and middle income countries have reached $669 billion in 2023. Sustained economic expansion in advanced economies and the Gulf Cooperation Council (GCC) continue to stand as the main drivers of this growth as they support migrants to establish a means of remittance back home. East Asia and the Pacific saw the strongest growth in remittance inflows of 3.0 per cent, followed by South Asia (7.2 per cent), Latin America and the Caribbean (8.0 per cent) and Sub-Saharan Africa (1.9 percent). On the other hand, remittance flows to the Middle East and North Africa declined for a second year in a row, by 5.3 percent, largely due to fewer transfers to Egypt. Europe and Central Asia also took a step back, decreasing 1.4% after a 18% rise in 2022. Expatriates in the neck of the world still by far top up the most to their loved ones elsewhere in the motherland. Documents published Friday by IBR (International Business Reports) disclosed that remittances from U.S. official to migrants such as those split family members across Mexico continue... The global remittance market size was expected to be $1 trillion in 2023 with the top five remittance recipient countries being India ($125 bn), Mexico ($67 bn), China ($50 bn), Philippines ($40 bn) and Egypt($24 bn). In these countries, remittances are especially important as they make up a large share of their economies' gross domestic product (GDP) — 48% for Tajikistan, 41% for Tonga, 32% for Samoa, 28% for Lebanon and 27 per cent for Nicaragua. These inflows of finance impacts different sectors for the development in economy like consumer, human resources, infrastructure etc. In South Asia, remittance inflows were projected to grow by 7.2 per cent in 2021 to reach $189 billion but the increase was a deceleration compared to more than 12 per cent growth recorded in 2020. The largest recipient nation, India was forecast to drive a lot of the growth with remittances to it projected at $125 billion in 2023 up by $14 billion compared with vitreous forecasts.

This included the US historically harsh labor market and a recovery in work o rientation in Europe, supported by programs to preserve workplaces and tran sfers to countries with high incomes. If an individual sends payments via Sola na, this will be sent to the region for $200 billion, with an average mobile infl ow growth of 4.3% in 2023. It is expected to fall to 5% in 2024. Relocation is a legal source of income in developing countries with high unemployment, lo w industrialization and lack of development capital. They primarily include re location from immigrants who intend to work in relatively developed countri es, which have been able to reduce levels of poverty and improve measures of living standards and economic stability. Therefore, the supply and terms of th at transfer are reflected in the concept of remittances exceeds his assessment of the financial aspects. Relocation can also improve economic growth by incr easing household consumption, supporting entrepreneurial risks, and providi ng funding for the education and health costs of recipient countries. Various s tudies in developing countries determine the role of relocation in economic gr owth. In this regard, various related research studies have assumed that even the worst-case scenario of a country's economy collapse could act as a buffer.

Problem Statement

Mallick (2000) states that although migrants contribute to the economies of the host countries, promoting both personal welfare and the overall conditions

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of the local economy, their effect on the economies of the countries of origin is not as conducive to further development as expected. Instead, the process of remittances often triggers multiple issues that slow down the pace of further development. The factors affecting economic growth require a detailed analysis of the current approach to receiving remittances and their consequences for the recipient countries. As a result, several problems or obstacles to their influence need to be reconsidered. The analysis of the concept of remittances in the article "Achieving Development Goals" shows that the process of money transfers between migrants and their relatives is not as beneficial for the rise of developing countries' economies as it could be. Eshan (2011) explains the most striking problem of remittances is the fact that families generally consume them as quickly as possible because they are used for urgent needs, these being clothes, food and housing. Though it is a common end up of the process, the poverty cycle remains exist without being broken and that help to keep this country be slave of those countries where they need workers in their economy. And, a new class system is being established where the people receiving remittances lead to those not receiving any in avoiding poverty and so on. The Factor Affecting Economic Growth also states that must take into consideration the circumstances in which remittances are sent in. For example, the lack of financial awareness among the population of the recipient country and the scarcity of financial institutions where the funds can be transferred are also problems. Further, the lack of funding for starting a company or obtaining credit are obstacles faced by the community in the country of origin. This problem is increasing in many developing countries, including Pakistan. Therefore, this study may be helpful for those investigating the "Impact of Remittances on Economic Growth in Developing Countries There is no clear evidence regarding the study of the "Impact of Remittances on Economic Growth in Developing Countries," so there is a need to conduct such a study on a national level to investigate this impact from 2000 to 2023. This study provides a brief discussion of international migration, an age-old phenomenon, as an emerging economic development issue, and the growth of remittances.

Objective of Study

1. To Examine the correlation among financial access, remittances, and economic growth in twenty developing nations from 2000 to 2023.
2. To Investigate the potential effect of financial access on economic growth in developing countries.
3. To Examine whether remittances help to increase economic growth in the developing countries.

LITERATU REREVIEW

Amjad & Ahmed (2001), Amjad and Panel Data Analysis Aspen Institute Iran-US were used between 1990 and 2010 to test financial transfers related to Iran's investment and economic growth. In this paper, the generalization moment me thod (GMM) was used to address
edogeneity issues and maintain consistency of estimates. Evidence from these s tudies shows that transfer flows play an important role in the investment and gr owth of the recipient countries. The report states that transfers for investments are being used in the country. Because they made it easier for development and

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improved financial stability. This led to higher economic growth. In particular, f or many dynamic relationships, this approach has enabled excellent flexibility a nd security in relation to the validity/reliability of the results. Rafiei and Shahb az
(2003) emphasize the fact that transfers are a key determinant of economic de velopment as they have a significant impact on Iran's investment outlook. Rath a (2003) focused on papers on the aspects of transfers and development financi ng. It underscores the fact that for developing countries, which are strongly bas ed on external funding sources, the transfer of foreign employees is relatively m ore reliable than other sources, such as foreign direct investment from his resea rch. Transfers have a positive impact on economic growth by increasing consu mption and investing in production factors such as infrastructure and human c apital. Lhasa also notes that relationships exist as other factors such as the degr ee of financial development and the degree of direct investment in productivity are important throughout the transfer. Adams & Richard (2004) examined how this relocation affects the impact of poverty in developing countries. He also fin ds that the scope of transfer streams has a positive effect on the income of hous eholds that play a role in accepting poverty. Adams believes this stream will inc rease consumption and increase the stability and growth of the stream through investment in human capital. Referring to his article, he explains that while relo cation growth increases living standards, the impact on economic growth may r emain problematic depending on the way it is published and the country's gene ral economic environment. Kapur & Devesh (2005) investigated the impact of t ransfers in developing countries. The study argues that economic growth can be improved through investment in areas such as education for young people and small businesses, as it has a positive impact on domestic savings and investmen ts. He also believes that transfers can act as a means of stimulating business dev elopment and promoting their financial capabilities. Other notes note that econ omic open vulnerabilities and reliance on relocation to dependencies lead to gro wth prospects that are not adequately compensated by effective guidelines and i nvestments. causal relationships between transfer inflows and economic growt h were estimated by Hanifi (2006) based on Afghanistan annual period data fro m 1985 to 2014
Using error-
correction model (ECM). The ECM approach is related to the investigation of sh ort
term equilibrium relationships between transfer flows and other economic vari ables. The results of this study show that transfers have a significant positive im pact on development, increasing investment and consumption. ECM results sho w that economic relocation is stable and growing,
patern development indicators. The study also highlights that it is an important tool for further development of economic development and increased commun ity investment in infrastructure, health and education, as well as not only imme diate action to promote financial pressures. Hussein and Khan's results highlig ht the importance of relocation for Afghanistan's economic development and th e important need to coordinate appropriate support guidelines to maximize the role of development. Young (2007) proposed an approach to co-
integration of the panel to assess the long-
term impact of transfers on growth in different regions of Libya. Your study em

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ployed data from 1997 to 2019 to examine regional differences in the impact of t ransfers. Long
term impact on economic growth, but there are differences between regions. Th e authors conclude that regions with better banking services and infrastructure will receive more transfers. They said guidelines to improve financial inclusion and regional development are needed to maximize
thepositive effects of relocation on Libya's long-term economic growth. However, even such intensive trials require more resear ch, especially in certain areas of the impact of relocation on growth in developin g countries. It is common to conduct research on specific components of transfe r currents without ignoring the specific effects of
configurations. There were not many works agreeing to the different pathways t hrough which transfers lead to economic growth, particularly the different path s that could lead to growth aspects in terms of productivity, HR resources, or fi nance. Furthermore, the differences in recipient countries are determined by go vernance, financial systems, macroeconomics, and so on, and are often conside red determinants of what is often taken for granted.

THEORATICAL FRAMEWORK

Despite the neoclassical growth theory implying that the capital accumulation, labor force growth, and technological progress are the main drivers of economic growth, this perspective may be applied to the remittances' role in the development of the developing countries. According to the neoclassical growth theory, population growth is another important element in the economic growth equation, but to consider the role of population in the context of increased remittances and their impact on the capital formation and labor productivity may be quite complex. In general, according to the neoclassical growth theory, the economic growth is determined by these two factors: the capital stock growth and the growth in the labor productivity. Importantly, remittances as the external capital play a significant role in this context by enhancing the domestic capital stock growth (Mwangi & Mwenda, 2015). In developing countries, remittances flow may often be instrumental in the process of capital accumulation. When sending remittances to international workers, these resources can be used to improve living conditions, for example by investing in housing or by providing small businesses, as well as investing in human capital: education and healthcare. Higher capital per capita allows a country to obtain a higher level of GDP, and thus, the increase in remittances becomes the source growth of the economy, which is consistent with the neoclassical theory of economic growth (Oshota, 2015). In addition, such operations can facilitate the mobility of labor resources and the acquisition of new skills. Thus, remittances are a significant factor contributing to the growth of the national economy. Products and services produced in such immigrant's country bring benefits to the migrants and their home countries where their households consume different types of products and services. If remittances are primarily used for consumption rather than investment, their impact on long term growth may be limited. Therefore, while neoclassical growth theory suggests that remittances have the potential to drive economic growth by increasing capital accumulation and labor productivity, the actual outcomes depend on the broader economic context and how these funds are employed.

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The model begins with a production function that describes how output (Y) is generated from inputs capital (K) and labor (L). A commonly used form of the production function in the neoclassical model is the Cobb-Douglas production function.

$$Y(t) = A(t)\, K(t)\, L^{\alpha}\, (t)^{1-\alpha} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(1)}$$

Y(t) is the output at time, K(t) is the capital stock at time t, L(t) is the labor force at time t, A(t) represents total factor productivity (TFP), capturing the effect of technology, α where **0 < α< 1** is the output elasticity of capital, representing the proportion of output attributable to capital. Capital accumulation is determined by the savings rate and the depreciation of existing capital. The change in the capital stock over time is given by the following differential equation

$$sY(t) - \delta K(t) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(2)}$$

"S" is the savings rate, which is the fraction of output that is saved and invested, **"δ"** is the depreciation rate of capital. This equation states that the change in the capital stock over time is equal to the amount of new capital created by savings minus the capital lost due to depreciation. In the long run, the economy reaches a steady state where the capital stock per worker k= (k=K/L) and output per worker (y=Y/L) are constant. In the steady state, capital accumulation (dK/dt) equals zero, meaning that

$$\boldsymbol{s^{Y} = \delta^{K}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(3)}$$

Substituting the per worker production function y= AK^{α} into this equation

$$\textbf{sAk}^{\alpha} \textbf{ = δk} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(4)}$$

Dividing both sides by k and solving for $k*$ (the steady-state level of capital per worker) models assumes diminishing returns to capital (α < 1). This implies that as capital per worker increases, the marginal product of capital decreases. In the steady state, output per worker and capital per worker are constant, implying that long-term growth in output per worker is driven by technological progress A(t), not capital accumulation. he only source of sustained growth in the model is technological progress, which shifts the production function upwards over time. By funding startups and small enterprises, remittances can foster innovation and the adoption of new technologies, which are essential for sustained economic growth. This aligns with the theory's assertion that economic growth can be accelerated through innovation-driven activities within the economy (Islam, 2022). Assume that technological progress is a function of human capital H(t)

$$\gamma H(t) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(6)}$$

η is a constant representing the productivity of labor in generating human capital. δH is the depreciation rate of human cap. Human capital itself

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accumulates according to:

$$\eta H(t) - \delta H \mathrm{H(t)} \ldots\ldots\ldots\ldots\ldots\ldots\ldots (7)$$

η is a constant representing the productivity of labor in generating human capital. δH is the depreciation rate of human capital. On the balanced growth path, all variables grow at a constant rate. Suppose that the economy reaches a balanced growth path **where** $y' = g\ k' = g\ A' = gA$, **and** $H' = gH$. Given the technology growth equation, we have gA=γgH and from the production function, assuming constant returns to scale gA+αgK+(1−α) gL If population growth gL is zero and gH = gK = g then,

$$g = \frac{\gamma\eta}{1-\alpha}$$

This shows that growth is driven by factors internal to the economy, such as the accumulation of human capital and knowledge.

DATA & METHODOLOGY

Numerous reports have highlighted the determinants for economic growth, financial inclusion and remittances. Our dependent variable in our analysis is the economic growth, which we will measure through LGDP growth. The independent variables are remittances (personal remittances received/GDP), and financial access (commercial bank branches/100,000 adults). Our control variables are open-ness, school, inflation, population, and investment.

List of selected developing countries in our sample

Afghanistan	Syrian Arab Republic
Albania	Lebanon
Algeria	Jordan
Egypt, Arab Rep	Libya
Bangladesh	Ukraine
Bahrain	Gabon
Brazil	Dominican Republic Congo
India	Zimbabwe
Iran Islamic Rep	Nepal
Pakistan	Yemen, Rep.
	Viet Nam

Population and Sample Selection

The study's sample comprised developing nations worldwide, and since data collecting heavily depends on data accessibility, I have omitted those nations for whom data was not accessible. In order to regulate the link between financial access, remittances, and economic growth, I employed panel data estimation

approaches in this work. Convenience sampling was used in the study. Twenty developing nations' worth of data were included in the study, which covered the years 2000–2023. Additionally, in order to look at how financial access affects economic growth, I collected information from the IMF (International Monetary Fund) and the World Bank (2017) Data base. We employed financial access and remittances as independent variables in this study, and openness, inflation, investment, population, and education as control variables. Economic growth was the dependent variable. The following are the variables' definitions.

Fixed Effect Redundancy Test

The study used fixed effect redundancy test to determine between two models which are common coefficient model and fixed effect model, the test showed significant result and suggested fixed effect model. The Fixed Effect Redundancy Test is used in econometrics to determine whether fixed effects in a panel data model are necessary. In other words, it tests whether the fixed effects (which capture unobserved heterogeneity across entities) are redundant, or if a simpler model without these effects would suffice (Van et al., 1990).

$$y_{it} = \alpha_i + \beta_{it} + \varepsilon_{it} \quad \text{...} \quad (8)$$

Y_{it} is the dependent variable. X_{it} is a vector of independent variables. α_i represents the fixed effects, which vary across entities but not over time. Estimate a pooled OLS model without the fixed effects.

$$Y_{it} = \beta X_{it} + \varepsilon_{it} \quad \text{...} \quad (9)$$

Conduct an F-test or a likelihood-ratio test to compare the fixed effects model with the pooled OLS model. The null hypothesis of the test is that the fixed effects are redundant. F-test is comparing the residual sum of squares (RSS) from the fixed effects model and the pooled OLS model. Likelihood-ratio test: This compares the likelihoods of the two models. If the test statistic is significant (p-value < α, where α is usually 0.05), reject the null hypothesis, implying that the fixed effects are not redundant and should be included in the model. If the test statistic is not significant, fail to reject the null hypothesis, implying that the fixed effects may be redundant, and a simpler pooled OLS model could be used.

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Hausman Test

Hausman et al, (2005), The Hausemen test was utilized by Hausman et al. (2005) to distinguish between a fixed effect and a random effect model. Following the test, the results indicated a statistically significant outcome and proposed a random effect hypothesis. The Hausman Test is a statistical test used in econometrics to evaluate the consistency of an estimator. Specifically, in the context of panel data models, it is used to determine whether a fixed effects model or a random effects model is more appropriate for the data. In panel data analysis, you often have to choose between a fixed effects (FE) model and a random effects (RE) model assumes that entity specific effects (e.g., individual, firm, or country effects) are correlated with the independent variables. This model controls for time-invariant characteristics by allowing different intercepts for each entity. Random Effects Model assumes that entity-specific effects are uncorrelated with the independent variables. It treats the individual effects as random variables and incorporates them into the error term (Mutl & Pfaffermayr, 2011). (H0): The preferred model is the random effects model (i.e., no correlation between the entity-specific effects and the regressors). (H1): The preferred model is the fixed effects model (i.e., the entity-specific effects are correlated with the regressors).

Estimate the panel data model using the fixed effects approach:

$$y_{it} = \alpha_i + \beta_{it} + \varepsilon_{it} \quad \text{..... (10)}$$

where αi
represents the fixed effects. Estimate the same model using the random effects approach:

$$y_{it} = \alpha_i + \beta_{it} + u_{it} \quad \text{..... (11)}$$

Calculate the difference between the coefficients obtained from the fixed effects model and the random effects model. Difference = βFE – βRE.

$$H = (\beta_{FE} - \beta_{RE})'[Var(\beta_{FE}) - Var(\beta_{RE})]^{-1}(\beta_{FE} - \beta_{RE}) \quad \text{.....(12)}$$

If the test statistic H is significant (p-value < α, where α is usually 0.05), reject the null hypothesis, indicating that the fixed effects model is preferred. If the test statistic is not significant, fail to reject the null hypothesis, suggesting that the random effects model is appropriate. If the individual specific effects are correlated with the regress, the random effects estimator will be inconsistent, and the fixed effects model should be used. If there is no correlation, the random effects estimator is more efficient (has a smaller variance), making it the preferred model.

Ordinary Least Square (OLS)

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Hayes et al, (2018), ordinary least squares (OLS) are a very popular method used to estimate parameters of linear regression models. The core concept that underlies OLS is to obtain the ideal line or hyperplane in the case of multiple variables which minimizes the sum of squared differences (termed residuals) between the observed values and those produced by the model. In simple terms, however, OLS is an unbiased method that provides efficient and consistent estimates when some assumptions are met.

The general form of a linear regression model is:

$$Y_I = \beta_0 + \beta_{1Xi1} + \beta_{2Xi2} + \dots \dots \dots \beta_{KXiK} + i \quad \textbf{(13)}$$

yi is the dependent variable. X_{i1}, xi_2..., xikx are the independent variables. β_0, β_1..., β_k are the coefficients to be estimated. ϵi is the error term. The goal of OLS is to estimate the coefficients β0, β1..., βk by minimizing the sum of squared residuals The relationship between the dependent and independent variables must be linear. The observations must be independent of each other. The variance of the error terms ϵi must be constant across all levels of the independent variable. The error terms ϵi should be normally distributed (especially important for hypothesis testing) The independent variables should not be perfectly collinear (i.e., no perfect linear relationship among the independent variables). The OLS estimates of the coefficients β0, β1..., βk are obtained by solving the normal equations.

$$X'X\beta = X'Y \quad \textbf{(14)}$$

X is the matrix of independent variables. Y is the vector of observed values of the dependent variable. β is the vector of estimated coefficients. The solution to these equations gives:

$$\beta = (X'X)^{-1} X'y \quad \textbf{(15)}$$

OLS estimators have the smallest variance among all linear unbiased estimators (BLUE) Best Linear Unbiased Estimator). As the sample size increases, the OLS estimator converges to the true parameter value. **t-test** used to test the significance of individual regression coefficients. **Ftest** used to test the overall significance of the model or to compare models. Regression analysis must include Ordinary Least Squares (OLS) which is conventional and it provides for the simplest yet highly effective approach towards estimating relations involving variables. It is important to be aware of the assumptions, estimation procedure and shortcomings of OLS in order to appropriately apply it in econometric analysis. Despite its limitations, OLS is widely used by researchers and practitioners in various disciplines as a valuable instrument.

Model Specification

I examined which model will be used in my investigation, thus I used a static model for empirical analysis that must choose between two models: the fixed effect model and the common coefficient model. I used the fixed effect redundancy test, and the findings indicated a fixed model. The study also used the Hausemen test to distinguish between a fixed effect and a random effect model, and the Hausemen test results indicated a random effect model. The research employed Catrinescu's fixed effect model (2009). I incorporate a variable for financial access that interacts with economic growth in the first equation.

$$LNPGDP_{i,t} = \beta_0 + \beta_1 FA_{i,t} + Z_{i,t} + \mu_{i,t} \quad (16)$$

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$LNPGDP_{it}$ =Log of per capita GDP

FA_{it} = Financial access

Z_{it} = Is the group of control variables, including

$open_{it}$: = Trade (import and export)/GDP

$school_{it}$ = Secondary school enrollment rate (percentage)

$inflation_{it}$ = Measured as annual change in percentage in price of the goods and services of the consumer.

p_{it} = Annual population growth percentage

$invest_{it}$ = Gross capital formation percentage

Where u_it is the error term t and i indicates year and country respectively.

In second equation we include remittance variable interacting economic growth.

$LNPGDPi,t = \beta 0 + \beta 1REMi,t + Zi,t + \mu i,t$ ..... **(17)** $REM_{i,t}$ = personal remittances received percentage of GDP

DATA ANALYSIS AND DISCUSSION

All independent and dependent variable patterns have been examined using descriptive statistics. The mean, median, high, low, and standard deviation are a few examples of descriptive statistics. Table No. 4.1 shows the pattern of independent variables, such as financial access and remittance, and dependent ones, such as GDP per capita. The mean and median values of LNPGDP are 25.42 and 25.39, respectively. LNPGDP has a standard deviation of 1.57, a minimum value of 22.69, and a high value of 28.78. The commercial bank branch count per 100,000 adults is measured by FA, which has a mean value of 9.88 and a median value of 8.93. FA ranges from a minimum of 0.39 to a maximum of 28.72. The standard deviation of FA is 6.34. The mean and median values of Personal Remittances Received (REM) as a percentage of GDP are 7.88 and 6.43, respectively. REM's values range from a minimum of 0.026 to a maximum of 27.62, with a standard deviation of 6.18. INVEST, a stand-in for investment, has a mean value of 23.25 and a median value of 23.86. It gauges gross capital creation as a proportion of GDP. INVEST ranges from a minimum of 5.50 to a maximum of 38.77. The value of INVEST's standard deviation is 7.02.

Descriptive Statistics

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	Mean	Median	Maximum	Minimum	Std. Dev.
LNGDP	25.4271	25.39653	28.78389	22.69522	1.577793
INFLATION	7.127915	5.691075	51.46086	-0.23895	6.318406
OPEN	63.25675	53.84413	186.6758	24.31973	32.97092
P	1.328406	1.243571	11.79402	-0.92692	1.466186
SCHOOL	73.09161	75.8195	106.6519	21.90852	20.77295
INVEST	23.25616	23.86263	38.77385	5.500512	7.029116
REM	7.887409	6.436114	27.62609	0.026625	6.183016
FA	9.880674	8.93	28.72	0.39	6.348811

The mean and median values of OPEN are 63.25 and 53.84, respectively. The open variable's values range from a minimum of 24.31 to a high of 186.67, with a standard deviation of 32.97. P is the annual population growth percentage; its mean and median values are 1.31 and 1.24, respectively. With a maximum value of 11.79 and a minimum value of -0.92, P has a standard deviation of 1.46. The column labeled SCHOOL in this table represents the proportion of students enrolled in secondary schools. Its mean value is 73.091, while its median value is 75.81. SCHOOL has a range of values that includes 106.65 at maximum, 21.90 at minimum, and 20.77 at standard deviation. The annual percentage change in the cost of goods and services is shown by the Consumer Price Index (INFLATION). INFLATION has a mean value of 7.12 and a median value of 5.69. At its peak point, the value of INFLATION is -0.023; at its lowest, it is 51.46; and at its standard deviation, it is 6.31. The analysis's col-linearity was made evident by the study's pairwise-correlation of the independent variables. The result shows the direction of the link in the form of positive and negative between two variables, starting with the maximum correlation (1 and lowest correlation 1) between independent variables. There is no connection between variables when the correlation coefficient is zero, and perfect correlation exists when the correlation coefficient is one. Financial access and GDP per capita are positively connected. Investment and remittances have a negative relationship with GDP per capita. GDP is inversely connected with population and inflation, whereas it is positively correlated with openness and secondary school enrollment. Openness has a favorable correlation not only with financial access but also with GDP per capita growth. Enrollment in secondary schools is positively connected with both financial access and GDP per capita growth. Inflation has a negative relationship not only with GDP per capita growth but also with investment, remittances, and financial access. Rem displays the percentage of GDP that is received in personal remittances. Invest displays the GDP percentage of gross capital formation. Open displays the trade to GDP ratio. P displays the yearly percentage of population growth. The percentage of secondary school enrollment and inflation are displayed by the school.

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Diagnostic Test

It is necessary to confirm which model will be applied in our study in order to analyze panel data. The Hausemen test and the Redundant Fixed effect test are two distinct tests. We used the fixed effect redundancy test to compare the two models the common coefficient model and the fixed effect model—and the findings indicate that the fixed model and We used the Hausemen test to distinguish between the fixed effect and random effect models; the test's results likewise pointed

Financial Access and Economic Growth

	LNGDP	INFLATION	OPEN	P	SCHOOL	INVEST	REM	FA_
LNGDP	1							
INFLATION	-0.04719	1						
OPEN	0.32745	-0.04265	1					
P	-0.03581	-0.014445	0.068402	1				
SCHOOL	0.043793	-0.18497	0.416315	-0.33174	1			
INVEST	-0.01293	-0.27587	0.193668	-0.1556	0.27167	1		
REM	-0.66186	-0.00939	0.102245	0.001938	-0.09821	0.138623	1	
FA_	0.05206	-0.32482	-0.11273	-0.04365	0.30803	0.284553	0.191005	1

	OLS		Fixed effect	
Variables	**Coefficient**	**Prob.**	**Coefficient**	**Prob.**
C	24.5190	0.0000	102.49	0.0000
FA_	0.02592	0.0923	0.0053	0.0621
INFLATION	0.02260	0.1077	0.003664	0.2543
OPEN	-0.02466	0.0000	-0.01893	0.0000
P	0.14443	0.0632	0.0051	0.0811
SCHOOL	0.02592	0.0001	0.03973	0.0000
INVEST	0.02188	0.1708	0.0024	0.096
R-square			0.9752	
Redundant Test				0.0000
Hauseman test				0.0000

FA_ is commercial bank branches per 100,000 adults. The determination coe-fficient Rsquare of 0.9752 indicates that the modelwe use in our analysis isexcellent. The intercept value in this model, which stands at 0.0000, suggests that there might be some missing variables that affect economic growth. FA and economic growth have a positive and significant link, with a correlation coefficient of 0.0053 and a p-value of 0.0621.

This suggests that economic growth will increase in proportion to the number of commercial bank branches per 100,000 adults. The invest coefficient value is 0.0024, and the p-value is 0.096. Our model does not

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contain the invest proxy. The coefficient of P is 0.0051 and the pvalue is 0.081. It implies that economic growth is facilitated by the country's population. The inflation coefficient is 0.0036 and the p-value is 0.254. The co-efficient value is 0.018 and the open p value is 0.0000. Trade openness cannot affect economic growth if a country has a poor financial system, as determined by its financial institutions. School has a coefficient of 0.3973 and a p-value of 0.0000. This suggests that the amount spent on education will increase in direct proportion to a country's economic growth. One percent more education will translate into 3.97 percent higher growth.

OLS AND FIXED EFFECT

Variable	OLS		Fixed effect	
	Coefficient	Prob.	Coefficient	Prob.
C	25.2817	0	23.3527	0
REM	-0.12331	0	0.032515	0.049
INFLATION	0.0411	0.0013	0.00860	0.0992
OPEN	-0.02009	0	-0.01321	0.0000
P	0.0082	0.8787	0.0219	0.0411
SCHOOL	0.01643	0.0003	0.03605	0
INVEST	0.02626	0.0261	0.002631	0.7249
R-square			0.9413	
Redundant Test				0.0000
Hauseman test				0.0000

The p-value is 0.0411 and the coefficient of P is 0.0219. It suggests that the nation's population promotes economic growth. The p-value is 0.099 and the inflation coefficient is 0.0086. The open p-value is 0.0000 and the coefficient value is 0.0132. If a nation's financial institutions indicate that its financial system is weak, then trade openness will not have a positive impact on economic growth. School's p-value is 0.0000 and its coefficient is 0.36. This implies that education spending will rise in direct proportion to the growth of a nation's economy. 3.60 percent higher growth may be achieved with one percent more education. The population's significant and positive influence on economic growth is demonstrated by the p-value of 0.0411 and the coefficient of P of 0.0219. It implies that economic growth is facilitated by the country's population. This model indicates that there is no relationship between inflation and economic growth, with an inflation coefficient of 0.0086 and a p-value of 0.0992.

CONCLUSION AND RECOMENDATON

The study's goal is to ascertain whether remittances and financial access affect

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economic growth. It also aims to ascertain the degree to which these factors contribute to the acceleration of GDP development in developing nations. The purpose of the study is to determine whether remittances encourage economic growth and to look into the possible impact of financial accessibility on economic growth in emerging nations. Lastly, it takes into consideration how remittances affect economic growth while taking into account the accessibility of financial services in less developed nations. In this work, we examined the relationship between growth, remittances, and financial access using panel data estimate approaches. The number of commercial bank branches per adult are the study's independent variables; they serve as proxy variables for financial access and remittances. The dependent variable is the GDP per capita log. We substitute the percentage of GDP that is outstanding for both deposits and loans from commercial banks in order to represent financial progress. Openness, inflation, investment, population, and education are among the 59 control elements listed below. Using the number of commercial bank branches km per square as a proxy for financial access, we examined the effect of financial availability on economic growth in our research. The results showed a positive and significant association between financial access and economic growth, and the number of commercial bank branches per 100,000 adults was utilized as a proxy for financial access. The findings indicated a noteworthy and favorable influence, suggesting an increase in the transfers of remittances to developing nations. Furthermore, the combined impact of remittances and financial access on economic growth is substantial and favorable. According to this study, investment and the import and export of goods and services have a negative impact on economic growth. This could be due to a number of factors, including inadequate financial institutions, few opportunities for investment, inefficient resource allocation in developing nations, international laws, and import and export taxes. The report suggests that nations should strengthen their financial systems, allocate resources sensibly, and look for investment possibilities. Furthermore, it implies that nations have to enhance their exports to other nations. As control variables, the study looked at openness, education, population, inflation, and investment. Future research can look at a wide range of other control variables. To compare various income levels, the outcomes can be assessed based on income levels. Furthermore, the concept introduced in this study could serve as a guide for future research or experimentation with similar discoveries. They will also receive background information or an overview on economic growth, remittances, and financial access from the study.

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