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Examining foreign capital inflows and growth in The Gambia: A dual-gap approach

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Background: Foreign capital is vital for small, low-income countries like The Gambia, where domestic resources are often insufficient to meet development needs. Despite reforms since the 1980s, the country has experienced volatile growth, even amid efforts to attract capital inflows.

Aim: This research investigates how foreign capital inflows influence economic growth in The Gambia, emphasising the roles of savings and the foreign exchange gaps.

Setting: The study uses the dual-gap framework and annual data from 1980 to 2023.

Method: The study applies robust econometric techniques of Dynamic Ordinary Least Squares (DOLS) and Fully Modified Ordinary Least Squares (FMOLS) to analyse the long-term relationship between capital inflows and growth.

Results: Findings indicate that capital accumulation, foreign direct investment (FDI), and remittances significantly drive economic growth. FDI shows a stronger impact of 12% compared to remittances' 7%. Human capital is also positively significant. Conversely, foreign exchange constraints exhibit substantial negative effects, while the negative labour input coefficient suggests inefficiencies in the labour market, likely linked to high informal employment. The savings gap was found to be insignificant. These results support classical growth theory and the capital-augmenting hypothesis.

Conclusion: Policy recommendations include attracting more FDI, streamlining remittance channels, addressing labour market inefficiencies, and implementing import substitution and export promotion strategies to ease foreign exchange constraints and foster sustainable economic growth.

Contribution: This study offers the first empirical assessment for The Gambia examining foreign capital inflows, growth, and the dual-gap dynamics, particularly relevant and timely in light of the growing reliance on external capital.

Keywords: foreign capital inflows; economic growth; dual-gap model; The Gambia; DOLS; FMOLS; foreign exchange gap; savings gap; FDI.

Introduction

Developing economies face a deepening divide between their domestic savings and the capital required for investment. This so-called savings-investment gap hinders their ability to invest in infrastructure, technology and other growth-crucial sectors. Therefore, attracting foreign capital inflows has become a primary development objective for many nations, including those in Africa (Oteng-Abayie & Frimpong 2006). Such an influx offers a lifeline for African countries and other emerging economies to address shortfalls in national savings and external financial liquidity. Foreign capital can supplement domestic savings, help manage trade deficits by providing foreign currency for essential imports and fuel capital accumulation for long-term growth. Chenery and Strout's (1966) dual-gap model highlights the indispensable contribution of foreign capital in propelling developing economies forward by addressing constraints in both domestic savings and foreign exchange.

Against this backdrop, scholars and policymakers have been examining the dynamics of foreign capital inflows and their growth implications, especially for developing nations like The Gambia. Empirical studies show positive relationships between trade liberalisation and foreign capital inflows in South Asia (Uz Zaman et al. 2018), while human capital (HC) complements foreign investment in driving economic development in North Africa (Sghaier 2021). Evidence from Jordan,

for the period 2005–2017, demonstrates how various foreign capital streams, encompassing portfolio investments, foreign direct investment (FDI), remittances and grants, support economic advancement (Lozi & Shakatreh 2019). Orji et al. (2014) observed heterogeneous effects of capital inflows across West African economies, with FDI fostering growth in Nigeria and The Gambia, while official development assistance (ODA) demonstrated more substantial effects in Sierra Leone and Ghana. The analysis in the current research builds on their work by focusing specifically on FDI and remittances while examining how progress in human capital (HC) reinforces the growth-inducing impacts of these financial flows.

The Gambia presents a compelling case study of a small, open economy that has undergone significant reforms since the 1980s but still experiences volatile growth despite efforts to enhance capital inflows. Since adopting a progressive exchange rate liberalisation strategy in 1986, The Gambia might have been expected to attract significant foreign investment. However, growth has remained volatile. Apart from having a small market size and perceptions of investment risk, The Gambia has a historically underdeveloped capital market system. Until the launch of the Capital Market in 2023, the country had no stock exchange or effective regulations to attract portfolio investment or facilitate financial resource flow, potentially limiting the expected influx of capital. Despite abundant human and natural resources, The Gambia falls into the least developed category globally. Recent institutional reforms, including the establishment of the Gambia Investment and Export Promotion Agency (GiEPA) in 2010, aim to facilitate private sector-led investment and export diversification.

Nevertheless, recent trends show promise. Despite global economic challenges triggered by the coronavirus disease 2019 (COVID-19) pandemic, The Gambia managed to attract increasing foreign direct investment, with the United Nations Conference on Trade and Development (UNCTAD) (2024) reporting that FDI inflows rose from $71 million in 2019 to $208 million by 2023. Remittances, according to central bank data, reached an all-time high of $774.6 million by 2021, a significant increase from $329.79 million in 2019. Tourism, accounting for approximately 20% of gross domestic product (GDP), attracts investors primarily driven by sun-seekers and bird watchers. Regardless of these positive developments, there is a question of whether The Gambia is fully harnessing these inflows for sustainable economic advancement.

Therefore, this research aims to assess how foreign capital inflows, particularly FDI and remittances, affect economic growth in The Gambia, explicitly incorporating the savings and foreign exchange constraints central to the dual-gap framework. In doing so, the research seeks to answer the questions: *Which types of foreign investments have had the most significant effect on growth? What strategies can The Gambia employ to maximise growth potential from various forms of foreign capital? How can The Gambia encourage and harness productive foreign capital inflows for sustainable growth?*

The study employs cointegration analysis, specifically Dynamic Ordinary Least Squares (DOLS) and Fully Modified Ordinary Least Squares (FMOLS) regressions. These approaches outperform traditional approaches like Autoregressive Distributed Lag (ARDL) and simple Ordinary Least Squares (OLS), particularly for smaller datasets typical of developing economies. To our knowledge, no previous research has utilised advanced time-series analysis to explore how foreign capital inflows influence The Gambia's economic growth.

The article continues with the following structure: the second section reviews relevant literature, the third section outlines the data and methodology, the fourth section presents the empirical results and the final section offers the conclusions and policy recommendations.

Literature review

The first part of this literature review discusses the relevant theory and framework that inform the study to lay a solid foundation for it. The second part carefully reviews works on the subject through critical analysis to identify a research gap and explains how this study aims to address it.

Theoretical background

A fundamental reason why countries often seek foreign funds is to tackle not just the shortfalls in domestic savings relative to the required financial commitments for economic transformation, but also to address the trade imbalances. Within the context of economic development, the expansion of productive capacity necessitates the acquisition of investment goods, which may be sourced domestically or internationally. Procuring these goods through domestic channels is contingent upon sufficient national savings, while their importation requires adequate foreign exchange reserves. Under the premise that certain critical investment goods are exclusively obtainable from external markets, because of technological disparities or resource constraints, a minimum amount of foreign exchange becomes necessary to sustain economic growth.

The theoretical foundation for understanding this phenomenon rests on the dual-gap framework, which extends the Harrod-Domar growth model. While Harrod-Domar focused solely on the savings-investment gap, the dual-gap theory recognises an additional constraint: the import-export gap (Chenery & Strout 1966). The theory proposes that developing economies face two critical hurdles to economic growth: the Savings-Investment Gap ($I - S$) and Import-Export Gap ($M - X$). The gaps arise when a given nation's domestic savings are inadequate to fund necessary investments, and it imports more than it exports. The dual-gap theory suggests that both gaps must be addressed for developing economies to achieve sustainable growth. Foreign capital inflows can significantly contribute to bridging these gaps through the provision of necessary capital for investment and financing imports (Chenery 1967).

The following equation demonstrates how foreign capital inflows can theoretically close both gaps, fostering economic development (Equation 1):

$$E = Y = I - S = M - X = F \quad \text{[Eqn 1]}$$

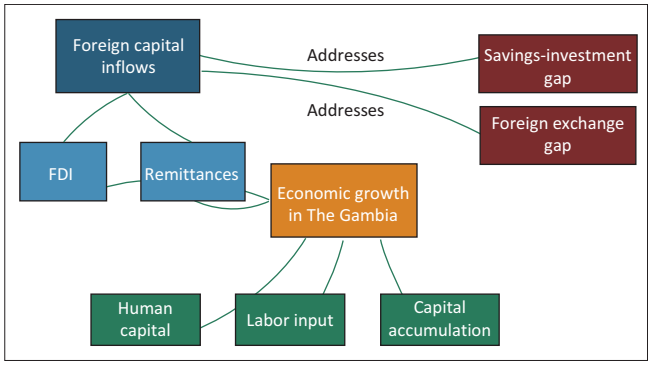
Where E denotes domestic expenditure, Y represents output, investment is illustrated by I and savings are represented by S. The variable M stands for imports, X stands for exports, and F represents foreign capital inflows. The equation depicts the foreign exchange gap as: M – X = F, where F represents capital inflows, M and X denote imports and exports, respectively. Accordingly, the equation $M - X = F$ signifies that the savings and foreign exchange gaps are equivalent. Similarly, $I - S = F$ represents the gap in savings that needs external capital to be closed. This equation demonstrates a crucial point: the savings gap($I - S$) is equivalent to the foreign exchange gap ($M - X$). In simpler terms, the shortfall in domestic savings to finance investment is the same as the need for foreign capital to cover the trade deficit.

Drawing from dual-gap theory and considering The Gambia's specific conqtext, Figure 1 illustrates the conceptual model that frames our research approach. The framework presents how foreign capital inflows, particularly FDI and remittances, interact with the savings-investment and foreign exchange gaps to influence economic growth from 1980 to 2023. This conceptual model reinforces our empirical investigation and helps visualise the theoretical relationships being tested.

As shown in Figure 1, we hypothesise that the inflow of foreign capital, specifically FDI and remittances, helps bridge both the savings-investment shortfall and the foreign exchange constraints in The Gambia's economic system. These dual-gap constraints potentially limit economic growth, while control variables, including HC, labour input and capital accumulation, also influence growth outcomes.

Empirical review

Despite a prevailing positive trend in empirical studies, the exact relationship between external capital inflows and economic expansion remains a subject of ongoing scholarly discussion. To shed light on this complexity, the following section delves into the connections between various forms of foreign capital and economic growth, exploring the influence of FDI, remittances and the dual-gap framework, with particular focus on sub-Saharan Africa, highlighting patterns, contradictions and research gaps relevant to The Gambia.



FDI, foreign direct investment.

FIGURE 1: Conceptual framework of Foreign capital inflows, dual-gap constraints, and economic growth in the Gambia.

Foreign direct investment and growth

Grossman and Helpman (1991) and Romer (1990) established the theoretical framework linking FDI to growth through endogenous growth theory. According to the theory, net inflows of foreign capital can serve as a catalyst for economic development. The theory suggests that limited production capacity can deter growth in developing economies, and the influx of FDI can help ease access to funds. A liberalised capital account and fewer restrictions on foreign investment can attract more significant foreign capital inflows. This influx, funded by external savings, can lead to a 'virtuous cycle' of economic growth. Interest rates might initially rise as investments increase, encouraging further investment and ultimately accelerating economic growth (Prasad, Rajan & Subramanian 2007).

However, recent sub-Saharan African studies have provided insights into the FDI-growth relationship. Adegboye et al. (2020) and Yeboua (2021) have both identified institutional quality as a key mediating factor, with Yeboua establishing specific institutional thresholds below which FDI's impact becomes negligible or even negative. This conditionality suggests that The Gambia's recent institutional reforms may be as important as the volume of FDI itself, a consideration often overlooked in policy discussions on attracting investment.

The literature also reveals contradictory temporal impacts. Touray's (2020) Gambia-specific study identified a concerning pattern: while FDI shows promising long-term benefits, it may impede growth in the short term. This temporal contradiction, hardly addressed in policy frameworks, raises important questions about how The Gambia should sequence economic reforms to maximise FDI benefits while minimising short-term disruptions. Orji et al. (2014) also observed that all forms of external capital inflows contribute to regional productivity growth in four West African countries: The Gambia, Ghana, Nigeria and Sierra Leone. A significant gap in the literature concerns FDI volatility. While Lensink and Morrissey (2006) found that FDI volatility consistently undermines growth, Sarkar (2007) identified negative effects from long-term investment. Few studies examine how developing economies like The Gambia can mitigate these volatility effects, representing a critical research gap, particularly given The Gambia's vulnerability to external economic shocks.

Remittances and growth

Remittances, or the money migrants send back home, represent a major provider of capital for developing countries.

The literature on remittances shows perhaps the most obvious contradictions in the foreign capital-growth nexus. Imai et al. (2012) identify three key channels through which remittances impact growth. These are capital accumulation, total factor productivity and labour force participation. Subsequent research, however, shows these effects vary dramatically across contexts.

A striking pattern of asymmetric and heterogeneous impacts emerges from recent studies. Olayungbo, Olaniyi and Ojeyinka (2020) found that both positive and negative remittance shocks impeded long-run growth in Nigeria, while negative shocks paradoxically enhanced short-term growth. This asymmetry, largely unexplored in the Gambian context despite Jallow's (2023) positive findings, represents a significant gap in understanding how remittance volatility affects The Gambia's growth trajectory.

Cazachevici, Havranek and Horvath's (2020) meta-analysis further complicates the picture, revealing substantial publication bias toward positive findings. Their bias-corrected estimates suggest the economic impact of remittances may be positive but negligible, with significant regional variation as remittances drive growth more effectively in Asia than in Africa. This regional disparity, inadequately explained in the literature, raises questions about whether structural or institutional factors in African economies limit the growth potential of remittances.

The contradictory findings between Jallow's (2023) Gambia-specific study showing strong positive effects and the more tempered continental patterns identified by Cazachevici et al. (2020) highlight a research gap regarding The Gambia's potentially unique remittance dynamics. Additionally, while studies by Chowdhury, Dhar and Gazi (2023) and Sutradhar (2020) detect potential negative effects like reduced labour participation and inflation, few studies examine how these adverse effects might be mitigated through complementary policies.

Dual-gap and growth

The dual-gap literature reveals a consistent pattern. While foreign capital theoretically addresses both savings-investment and foreign exchange gaps, empirical evidence suggests more complex outcomes. Recent sub-Saharan African studies highlight a crucial contradiction, showing that, despite increasing foreign capital flows, structural gaps persist.

Bosede Adegboye et al.'s (2020) finding that FDI has yet to significantly close both the savings and foreign exchange gaps across 39 African nations challenges fundamental assumptions about the effectiveness of foreign capital. Their emphasis on quality over quantity of investment represents an important shift in thinking, suggesting that The Gambia's focus should extend beyond attracting investment to strategically channelling it into sectors that stimulate domestic investment without crowding out local capital.

A concerning pattern emerges from studies by Aremu, Abubakar and Oladipo (2014) and Anis et al. (2014), who found that while FDI helps bridge savings gaps, it may widen foreign exchange gaps by promoting imports. This contradictory effect, also noted by Globerman (1979) and Blomstrom (1986), suggests that foreign capital might simultaneously solve one constraint while exacerbating another, a complexity rarely addressed in policy frameworks.

A significant research gap exists regarding how countries like The Gambia can optimise the dual-gap benefits of foreign capital while minimising these contradictory effects. Few studies examine specific sectoral allocations or complementary policies that might enhance foreign capital's effectiveness in addressing both gaps simultaneously. The literature reveals that the relationship between foreign capital inflows and growth is neither straightforward nor universal. Instead, it is mediated by institutional quality, exhibits temporal variations and produces asymmetric effects across different types of capital and economic contexts. This complexity underscores the need for The Gambia to develop robust, context-specific policies rather than relying on generalised assumptions about the benefit of foreign capital.

Additionally, by examining both savings and foreign exchange gaps simultaneously within The Gambia's specific context, this study addresses critical gaps in understanding how foreign capital can most effectively contribute to sustainable economic development in small, resource-constrained economies.

Data and methodology

Data

This research examines the dynamics between foreign capital inflows and economic growth in The Gambia through the dual-gap perspective. The analysis utilises secondary data sourced from the World Bank world development indicators (WDI) database and Penn World Table (PWT 10.01). It examines FDI and remittance components of foreign capital inflows, facilitating a comprehensive analysis of their growth impacts, given data constraints and consistency considerations. Using a balanced time-series dataset from 1980 to 2023 mitigates potential estimation biases from missing observations, contributing to a more comprehensive perspective on the existing body of literature on the link between foreign capital inflows and economic growth.

Methodology

This study employs DOLS and FMOLS techniques to explore the long-run relationship between the dependent and independent variables. This approach goes beyond traditional methods like ARDL and simple OLS models through the use of a dual-gap framework. These methods are particularly suited for smaller datasets, familiar in developing economies like The Gambia, and further help mitigate issues like sample size bias and autocorrelation that can distort

results. The study builds upon previous work conducted in other countries and regions by Fambon (2013) and Adusah-Poku and Bekoe (2018), by incorporating a more robust framework and advanced techniques, starting from the traditional augmented Cobb-Douglas production function framework that includes HC. The production function in general is as follows (Equation 2):

$$GDP = Ak^{\alpha}H^{\beta}L^{1-\alpha-\beta} \quad \text{[Eqn 2]}$$

Where GDP represents actual gross domestic product, K refers to capital stock, H is used to represent HC, and the total labour force is denoted by L. The term A captures foreign capital inflows, including FDI and remittances. The effect of foreign capital on growth is presumed to occur via A (Equation 3):

$$A = f(FDI, REM) \quad \text{[Eqn 3]}$$

Incorporating this expression into the production function results in the following formulation (Equation 4):

$$LNGDP = f(LNCAPITAL, LNLABOR, FDI, REM, HC) \quad \text{[Eqn 4]}$$

To account for the dual-gap hypothesis, the econometric model is augmented as follows (Equation 5):

$$LNRGDP = \beta_0 + \beta_1 LNCAPITAL + \beta_2 LNLABOR + \beta_3 FDI + \beta_4 REM + \beta_5 HC + \beta_6 LNSAVIN + \beta_7 LNIMEXP + \varepsilon \quad \text{[Eqn 5]}$$

Where real GDP (LNRGDP) functions as the dependent variable, while the independent variables are capital stock (LNCAPITAL), labour (LNLABOR), FDI, remittances (REM) and HC. While the savings gap is captured by (LNSAVIN), the foreign exchange gap is represented by (LNIMEXP), both of which satisfy the dual-gap component. While ε stands for the error term, β_0 represents the constant term. All variables, apart from FDI, REM and HC, are converted into natural logarithms to mitigate skewness in the data. Foreign direct investment and remittances are measured as a share of GDP, while a human capital (HC) index represents HC, hence their exclusion from the logarithmic transformation. This transformation helps normalise the distribution, making the data more suitable for analysis and improving the reliability and accuracy of the regression results. Table 1 presents the variables' descriptions, measurements and expected indications. Most variables are expected to positively impact economic growth, while both the savings gap and the foreign exchange gap are anticipated to adversely affect growth.

TABLE 1: Description and measurements of variables.

Variables	Description	Measurement	Expected sign
LNRGDP	Real GDP	Constant 2017 US$	-
LNCAPITAL	Capital Stock†	% GDP	Positive
LNLABOR	Number of People Engaged	Share of population	Positive
FDI	Foreign Direct Investment, net Inflows	% GDP	Positive
REM	Remittances Inflows	% of GDP	Positive
HC	Human Capital	Human capital index	Positive
LNINSAV	Savings – Investment	% of GDP	Negative
LNIMEXP	Imports – Exports	% of GDP	Negative

LNRGDP, real GDP; LNCAPITAL, capital stock; LNLABOR, labour; FDI, foreign direct investment; REM, remittance; HC, human capital; LNSAVIN, savings gap; LNIMEXP, foreign exchange gap; GDP, gross domestic product.

†, As official data on the Gambia's capital stock is unavailable, the estimation was made using investment values with an assumed depreciation rate of 5%.

Econometric model

This section outlines the econometric techniques employed to assess the long-term interactions among the variables under examination. To ensure robust and reliable results, the analysis combines two complementary approaches: DOLS and FMOLS. The methodology also includes preliminary unit root testing and cointegration analysis to investigate the stationarity of the variables and verify the presence of long-run relationships, ensuring that sound econometric practices are followed for the estimations.

The Dynamic OLS estimator

Stock and Watson (1993) introduced the DOLS model as a parametric technique that estimates long-run relationships between integrated variables, even when they exhibit different integration orders. It addresses potential biases from simultaneity and small samples by incorporating lags of the variables (Kurozumi & Hayakawa, 2009). Dynamic ordinary least squares provide unbiased and asymptotically efficient estimates, and its constraints help correct for serial correlation and residual abnormalities (Herzer & Nowak-Lehnmann 2006; Stock & Watson 1993). The Dynamic OLS estimator can be derived through Equation 6:

$$y_t = \alpha + bX_t + \sum_{i=-k}^{i=k} \theta_i \Delta X_{t+i} + \varepsilon_t \quad \text{[Eqn 6]}$$

The coefficient α represents the constant term, b captures the elasticity in long-term connections between the dependent and independent variables. θ denotes the lag and lead terms for the I(1) regressors. By incorporating lags and leads, DOLS can account for autocorrelation problems and provide more reliable estimates of the relationship in the long run.

The fully modified OLS estimator

To corroborate the results of the DOLS model and address potential shortcomings, the FMOLS technique was additionally applied to assess the interaction among the variables in the long run. Initially introduced by Phillips and Hansen (1990), the FMOLS method excels at estimating cointegrating relationships, even when the variables are I(1), indicating first-order integration. Like DOLS, FMOLS is advantageous for providing consistent results even with relatively small datasets. It effectively addresses potential errors in measurement, serial correlation issues and endogeneity, ensuring reliable estimation of the long-term relationship between the variables (Agbola 2013).

The FMOLS estimator is represented as (Equation 7):

$$\hat{O}_{FMOLS} = \left(\sum_{t=1}^{T} Z_t Z_t'\right)^{-1} \left(\sum_{t=1}^{T} Z_t Y_t^{+} - T\begin{bmatrix} \lambda_{12'}^{+} \\ O \end{bmatrix}\right) \quad \text{[Eqn 7]}$$

Where Z_t denotes the cointegrating vector, capturing the equilibrium relationship among variables. The term $\sum_{t=1}^{T} Z_t Z_t'$ forms the covariance matrix of the independent variables, with its inverse scaling the estimates properly. The bias adjustments $\sum_{t=1}^{T} Z_t Y_t^+ - T\begin{bmatrix}\lambda_{12'}^+ \\ O\end{bmatrix}$ address endogeneity and serial correlation by modifying the dependent variable Y_t^+ and the covariance term λ_{12}^+.

The estimator is derived by minimising a weighted sum of squared residuals, where the weights are based on the long-run covariance matrix Ô.

After evaluating the variables' stationarity using unit root tests, we will proceed with cointegration tests to establish whether any long-term equilibrium relationships exist. The long-run parameters will then be assessed using DOLS and FMOLS techniques.

Results and discussions

Unit root test

When conducting empirical research based on time series, determining the stationarity of the variables is essential. This can be done by determining whether the variables have a stable mean, variance and trend over time. Failure to test for stationarity risks a possibility of obtaining results that are not reliable. Augmented Dickey-Fuller (ADF) and Phillips-Perron tests are employed for this purpose.

Table 2 and Table 3 present the results of our unit root test using both ADF and Phillips-Perron tests at levels and first differences, respectively. Constants and trends were included in these tests as they were significant to this study. As shown in the results of Table 2, only the log of the savings gap (LNSAVING) rejects the assumption of the null hypothesis that the series contains a unit root, both with and without a trend component. All other variables exhibit non-stationarity. Table 3 shows that when we applied unit root tests to the first-order differences of all variables, we could reject the null hypothesis of non-stationarity at the 5% significance level, indicating that all series are integrated of order one, I(1).

TABLE 2: Unit root test at level.

Variable	Augmented Dickey-Fuller		Phillips-Perron	
	Constant	Constant and trend	Constant	Constant and trend
LNRGDP	1.303	-2.285	-2.105	-3.087
LNCAPITAL	-1.735	0.468	-1.517	2.202
LNLABOR	-2.157	-1.594	-2.825*	-1.143
FDI	-1.475	-2.832	-1.846	-3.218*
REM	0.363	-1.545	-0.358	-2.183
HC	-0.950	-2.401	-1.423	-1.523
LNSAVIN	-5.898***	-6.397***	-5.898***	-6.397***
LNIMEXP	-1.542	-2.246	-1.613	-2.101

Note: (***), (**), and (*) represent statistical significance at 1%, 5%, and 10% levels, respectively, indicating rejection of the null hypothesis of non-stationarity.

LNRGDP, real GDP; LNCAPITAL, capital stock; LNLABOR, labour; FDI, foreign direct investment; REM, remittance; HC, human capital; LNSAVIN, savings gap; LNIMEXP, foreign exchange gap; DOLS, dynamic ordinary least squares; FMOLS, fully modified ordinary least squares; GDP, gross domestic product.

TABLE 3: Unit root test at first difference.

Variable	Augmented Dickey-Fuller		Phillips-Perron	
	Constant	Constant and trend	Constant	Constant and trend
LNRGDP	-6.809***	-6.852***	-4.343***	-4.160***
LNCAPITAL	-0.707**	-3.814**	-0.824**	-2.104**
LNLABOR	-2.703**	-3.451**	-0.734**	-1.562**
FDI	-4.951**	-4.882***	-7.638***	-7.569***
REM	-3.613***	-3.934**	-8.853***	-9.259***
HC	-3.161**	-3.538**	-3.161**	-4.143***
LNSAVIN	-11.519***	-11.375***	-11.519***	-11.375***
LNIMEXP	-5.947***	-6.565***	-7.127***	-7.570***

Note: (***), (**), and (*) represent statistical significance at 1%, 5%, and 10% levels, respectively, indicating rejection of the null hypothesis of non-stationarity.

LNRGDP, real GDP; LNCAPITAL, capital stock; LNLABOR, labour; FDI, foreign direct investment; REM, remittance; HC, human capital; LNSAVIN, savings gap; LNIMEXP, foreign exchange gap; GDP, gross domestic product.

Cointegration test

The unit root tests (ADF and Phillips-Perron) reveal non-stationarity in levels for all variables except the savings gap (LNSAVING). First-differencing induces stationarity, indicating that the variables are predominantly I(1), with LNSAVING being I(0). As the varied integration orders, we applied the ARDL bounds testing method to observe the long-term relationships. Cointegration analysis identifies stable equilibrium relations in the long run for non-stationary time series despite short-term fluctuations (Studenmund 2006). This technique reveals whether variables exhibit convergent behaviour over extended periods, notwithstanding transitory deviations. Considering the variables with varying orders of integration, we utilised the ARDL bounds test framework to test for potential cointegrating relationships. This approach is especially appropriate for examining relationships among variables with different levels of stationarity.

As shown in Table 4, the calculated F-statistic of the ARDL bounds test is higher than the critical bounds at all significance levels (10%, 5%, and 1%). Given that the F-statistic of 10.63039 surpasses the upper limit critical values (I(1)) at 1% of significance (4.26), we reject the null hypothesis of no level relationship. Therefore, a long-run association between economic growth and the independent variables is well-established. Accordingly, the model of the study will be estimated to solidify this understanding.

Empirical results

Following the cointegration test confirming a long-term link between the variables for The Gambia, a regression analysis was performed to identify the form of this relationship.

TABLE 4: Autoregressive Distributed Lag F-bounds cointegration test.

Variable	Test statistic	Value	Significance%	I(0)	I(1)
F-bounds test	*F*-statistic	10.63039	-	-	-
	K	7	-	-	-
Null hypothesis: No levels relationship	-	-	10	2.03	3.13
	-	-	5	2.32	3.50
	-	-	1	2.96	4.26

The DOLS and FMOLS techniques were utilised owing to their suitability for small sample sizes and their ability to provide reliable long-run parameter estimates, regardless of integration levels or cointegration presence. These methods are widely used in various economic fields, further justifying their selection. Furthermore, a good number of studies have employed these methods effectively to analyse similar or different relationships (Khatir & Güvenek, 2021; Ramirez, 2023). As a result, DOLS and FMOLS were adopted in this analysis to investigate the dynamic relationship between inflows of foreign capital and economic growth using the dual-gap concept for the period 1980–2023. Table 5 provides the long-run estimates derived from the two models.

The results of the DOLS and FMOLS estimations are shown in Table 6. The coefficient of LNCAPITAL for both DOLS (1.3862) and FMOLS (1.4722) is positive and statistically significant at the 5% level, indicating that a rise in capital stock contributes positively to economic growth in The Gambia. The finding is also consistent with classical growth theories, suggesting that higher investments in capital accumulation stimulate productive activities. The results of this study also align with these empirical studies (Hejuan, Yue & Yue 2018; Maksimova 2024).

Conversely, LNLABOR exhibits a statistically significant detrimental impact on LNRGDP at the 1% and 5% levels across the models. The results counter the conventional notion that a larger labour force should drive economic growth. This unexpected result suggests potential inefficiencies within the labour market and underscores the predominance of informal employment, constituting 63% of The Gambia's labour force, thereby constraining productivity. The limited transfer of employment to higher-productivity sectors and firms has adversely affected economic growth and restricted job creation (World Bank 2024). Informal jobs often lack stability, social protection and opportunities for skill development, which can limit overall productivity and economic development. Indeed, economic growth and job creation are facilitated when labour shifts to sectors representing higher-productivity levels. The findings thus emphasise the necessity for labour market reforms or enhancements in labour quality to ensure economic expansion in The Gambia. In the case of The Gambia, the negative labour coefficient underscores that increasing the size of the labour force is not sufficient for economic growth. The quality, allocation and productivity of labour are key for achieving sustainable development.

TABLE 5: Regression results.

Variables	DOLS		FMOLS	
	Coefficient	Standard error	Coefficient	Standard error
LNCAPITAL	1.3862**	0.6233	1.4722**	0.5640
LNLABOR	-2.1791***	0.7584	-1.6304**	0.7019
FDI	0.1264***	0.0257	0.1186***	0. 0231
REM	0.0776***	0.0190	0.0709***	0. 0171
HC	4.4635***	1.2023	3.8936***	1. 0837
LNSAVIN	-0.0359	0.0837	-0.0304	0.0761
LNIMEXP	-0.3643**	0.1389	-0.3276**	0.1257

Notes: (***), (**), and (*) represent statistical significance at 1%, 5%, and 10% levels, respectively.

LNCAPITAL, capital stock; LNLABOR, labour; FDI, foreign direct investment; REM, remittance; HC, human capital; LNSAVIN, savings gap; LNIMEXP, foreign exchange gap; ARDL, Autoregressive distributed lag; DOLS, dynamic ordinary least squares; FMOLS, fully modified ordinary least squares.

TABLE 6: Robustness check regression results.

Variables	ARDL	
	Coefficient	Standard error
LNCAPITAL	1.9566***	0.5890
LNLABOR	-11.2062**	4.7559
FDI	0.1112***	0.0229
REM	0.0783***	0.0195
HC	9.4350***	1.6927
LNSAVIN	-0.0932	0.0804
LNIMEXP	-0.2503*	0.1472

Notes: (***), (**), and (*) represent statistical significance at 1%, 5%, and 10% levels, respectively.

LNCAPITAL, capital stock; LNLABOR, labour; FDI, foreign direct investment; REM, remittance; HC, human capital; LNSAVIN, savings gap; LNIMEXP, foreign exchange gap; ARDL, Autoregressive distributed lag.

Foreign Direct Investment (FDI) and REM reveal positive and highly substantial influences on growth, exhibiting coefficients ranging from 0.1186 to 0.1264 for FDI and 0.0709 to 0.0776 for remittances, all statistically significant at the 1% level. This stresses the relevance of international capital flows and the contributions of the diaspora to the Gambian economy. The arrival of overseas firms can create new jobs and boost production directly through the initiation of operations and expansion of activities. Additionally, by fostering a business environment that attracts foreign investment, The Gambia can benefit from the opportunities that FDI offers to contribute to broader economic growth. This study supports the capital-augmenting hypothesis, which posits that external finance supplements domestic savings and relaxes capital constraints in developing economies. It also corroborates previous research (Hussain & Haque, 2016; Sunde, 2023).

Furthermore, the results also emphasise the vital impact of remittances in bolstering growth in The Gambia, potentially through increased household consumption, investment and financial inclusivity. Studies by Ceesay (2020) and Jallow (2023) also report similar results.

Human capital (HC) also emerges as a critical factor with coefficients of 4.4635 for DOLS and 3.8936 for FMOLS, significant at the 1% level. This reinforces the significant contribution of education and skills training to The Gambia's economic advancement.

The negative coefficients for LNSAVIN and LNIMEXP suggest that higher savings and foreign exchange gaps are detrimental to GDP growth, reflecting potential issues in domestic investment and trade imbalances. Although the coefficients for LNSAVIN are negative, their effects are not statistically significant at the 5% level. This aligns with the idea that a larger gap signifies insufficient domestic savings to finance investments, potentially hindering economic expansion. In contrast, the foreign exchange gap (LNIMEXP)

shows a strong detrimental effect on economic growth, showing coefficients of –0.3643 for DOLS and –0.3276 for FMOLS, both significant at the 5% level. This implies that wider trade imbalance or foreign exchange gaps hinder economic growth. A wider gap occurs when imports exceed exports, leading to a shortage of foreign currency in the country. This lack of foreign currency can restrict imports of essential goods, equipment and raw materials for businesses to operate and grow. When foreign exchange shortages constrain growth, free trade may fail to achieve both internal and external balance, and the underutilisation of local resources could overshadow the potential benefits of trade liberalisation. By addressing the foreign exchange gap, The Gambia can create a more conducive environment for business activity and thus boost economic expansion.

Robustness check

To ensure the robustness of our DOLS and FMOLS regression results, we employed the ARDL model as a complementary approach. Using ARDL as a robustness check provides further validation of the stability and consistency of the long-term associations identified through FMOLS and DOLS.

The ARDL regression outcomes are highly consistent with those obtained from the DOLS and FMOLS analyses, thereby enhancing the reliability and validity of the earlier analysis. While the coefficients in the ARDL model are relatively higher, the direction of the relationships remains consistent across all models. Specifically, Capital Stock, Foreign Direct Investment, Remittance and Human Capital demonstrate a statistically significant positive relationship with growth. In contrast, Labour demonstrates a significant but negative association. The Savings Gap, although negative, is statistically insignificant, whereas the foreign exchange gap is negative and significant at the 10% level. These findings underscore the critical role of foreign capital inflows in driving The Gambia's economic growth, particularly through the lens of dual-gap theory. This consistency across models reinforces the robustness of the results and highlights the importance of addressing structural gaps to foster sustainable economic development.

Conclusion and policy recommendations

This study explores how foreign capital inflows affect The Gambia's economic growth through the application of the dual-gap approach. The dual-gap model, developed by Chenery and Strout (1966), provides a crucial theoretical framework on how developing economies face two fundamental constraints: the savings-investment gap and the foreign exchange gap. This model suggests that foreign capital inflows can close these gaps, promoting economic growth. This study's significance comes from The Gambia's distinctive position as a small, open economy facing both these gaps. Understanding the connection between capital inflows and growth is crucial for policymakers in the country. In June 1985, Gambian authorities launched the Economic Recovery Programme (ERP), a comprehensive adjustment initiative designed to restore financial stability and establish the foundations for sustainable economic growth. Despite these efforts, the country's growth performance has remained volatile**.** As the first study to empirically investigate these dynamics in The Gambia, the research seeks to offer empirical insights to inform policy decisions and enhance the effectiveness of capital inflows in fostering long-term economic development.

While previous studies by Sunde (2023) and Odhiambo (2022) have explored similar relationships in other countries, none specifically apply the dual-gap framework to The Gambia, making this research particularly significant for theoretical understanding and policy formulation.

The varied findings in previous studies highlight how complex the connection between capital inflows and economic growth can be. While studies such as Cazachevici et al. (2020) and Ehigiamusoe and Lean (2019) report positive effects of capital inflows on economic growth, others, including Tang and Bundhoo (2017) and Shahbaz and Rahman (2010), identify adverse or insignificant effects. These divergent results underscore the need for a more robust analysis that accounts for The Gambia's unique economic conditions and employs more advanced analytical methods.

This study employs advanced time-series methods, including DOLS and FMOLS, covering 1980–2023. These methods are specifically chosen because of their effectiveness with limited sample sizes and their capacity to tackle common econometric problems like autocorrelation and endogeneity.

Capital stock's vibrant and notable influence on economic growth aligns with the classical growth theories, underscoring the significance of capital accumulation in stimulating productive activities. On the contrary, the adverse relationship between labour and growth highlights critical inefficiencies in the Gambian labour market, particularly the dominance of informal employment. This calls for targeted policy interventions to enhance labour productivity and facilitate the movement to higher-productivity sectors. Moreover, the Gambian economy has experienced limited structural transformation, with insufficient movement of workers from low-productivity sectors (such as subsistence agriculture or informal services) to higher-productivity industries. This lack of labour reallocation means that increases in the labour force do not necessarily translate into higher output or growth. Instead, the growth of labour in mainly low-productivity or informal sectors may even dilute average productivity, thereby exerting a negative effect on GDP growth. Therefore, this finding highlights the importance of labour market reforms aimed at improving the quality of jobs, promoting formal employment, and facilitating the transition of workers into more productive sectors. Additionally, improving the quality of education, vocational training, and labour regulations could help unlock the growth potential of The Gambia's workforce.

The study demonstrates the importance of foreign capital in The Gambia's journey toward economic development. FDI and remittances both exhibit a strong, favourable effect on economic growth, suggesting that strategies to attract foreign investment through a favourable business environment and leverage diaspora contributions could be a vital driver of growth in the country.

Human capital also emerges as a critical driver of growth in The Gambia. Its positive significant influence on growth suggests that policies focused on enhancing the quality and accessibility of education, promoting vocational training and fostering skill acquisition are crucial for boosting productivity and facilitating long-term economic expansion. By prioritising HC development, The Gambia can create a more skilled and adaptable workforce better equipped to drive innovation and play a critical part in enhancing the overall competitiveness of the economy. The negative impact of trade imbalances, reflected in the foreign exchange gap, further highlights the challenges of insufficient foreign currency reserves. This trade deficit could be addressed by developing a diversified and export-oriented economy to mitigate the constraints imposed by foreign exchange shortages and support business operations. Although the savings gap reveals an adverse influence on growth, but appears to be insignificant. It still reflects the need for more robust domestic savings mechanisms to finance investments and foster a healthy business environment for The Gambia's economic development.

Based on these findings, advancing economic development in The Gambia requires targeted, actionable strategies that address the study's critical growth determinants. Policymakers should prioritise attracting more FDI to high-potential sectors such as agro-processing, tourism and renewable energy by offering sector-specific tax incentives, streamlining business registration and ensuring regulatory transparency. To leverage the developmental effect of remittances, the government should endeavour to promote financial sector innovations such as mobile money platforms and low-cost remittance services and establish diaspora bonds or investment funds that channel remittance flows into infrastructure, education and small business development.

Enhancing physical and HC should involve expanding vocational and technical training programmes, particularly in sectors with high growth and employment potential, and increasing investment in science, technology, engineering and mathematics (STEM) education to build a skilled workforce.

Addressing labour market inefficiencies calls for formalisation initiatives, such as simplifying business licensing for small enterprises, strengthening labour rights and supporting job-matching services to help workers transition from informal to higher-productivity sectors. To manage the foreign exchange gap, The Gambia should implement export promotion strategies targeting value-added agricultural products and services, while also encouraging import substitution in areas like food processing and light manufacturing. Establishing export credit facilities and supporting trade facilitation infrastructure can further boost foreign exchange earnings. Implementing these targeted measures will enable The Gambia to create a more resilient and dynamic economy, better positioned for sustained and inclusive growth.

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Competing interests

The authors declare that they have no financial or personal relationships that may have unduly influenced them in writing this article.

Authors' contributions

S.S. drafted the manuscript, conducted the literature review, collected data, methodology, performed analysis and interpreted the results. H.V. contributed to the research design, economic modelling and assisted in final review and editing.

Ethical considerations

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Data availability

The data used in the study are available on the World Bank Database and Penn World Table (PWT 10.01). The data that support the findings of this study are available on request from the corresponding author, S.S.

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References

Adegboye, F.B., Osabohien, R., Olokoyo, F.O., Matthew, O. & Adediran, O., 2020, 'Institutional quality, foreign direct investment, and economic development in sub-Saharan Africa', *Humanities and Social Sciences Communications* 7(1), 1–9. https://doi.org/10.1057/s41599-020-0529-x

Adusah-Poku, F. & Bekoe, W., 2018, *Does the form matter? Foreign capital inflows and economic growth in Ghana*, Economics and Econometrics Research Institute (EERI), Brussels.

Agbola, F.W., 2013, 'Does human capital constrain the impact of foreign direct investment and remittances on economic growth in Ghana?', *Applied Economics* 45(19), 2853–2862. https://doi.org/10.1080/00036846.2012.676735

Anis, M., Siddiqi, M.W. & Muhammad, T., 2014, 'Foreign capital inflow and economic growth: A dual gap model for Pakistan economy', *GCU Economic Journal* XLVII(1–2), 17–34.

Aremu, B., Abubakar, T. & Oladipo, T.B., 2014, 'The two gap model and the Nigerian economy; bridging the gaps with Foreign direct investment', *International Journal of Humanities and Social Science Invention* 3(3), 2319–7722, viewed 17 October 2024, from www.ijhssi.org.

Blomstrom, M., 1986, 'Foreign investment and productive efficiency: The case of Mexico', *The Journal of Industrial Economics* 35(1), 97–110. https://doi.org/10.2307/2098609

Bosede Adegboye, F., Femi Adesina, T., Aanu Ojeka, S., Abosede Akinjare, V. & Omowunmi Olokoyo, F., 2020, 'Foreign direct investment, dual gap model and economic development in sub-Saharan Africa', *Cogent Social Sciences* 6(1). https://doi.org/10.1080/23311886.2020.1743138

Cazachevici, A., Havranek, T. & Horvath, R., 2020, 'Remittances and economic growth: A meta-analysis', *World Development* 134, 105021. https://doi.org/10.1016/j.worlddev.2020.105021

Ceesay, E., 2020, 'Employment in agriculture, migration, bilateral aids, economic growth and remittance: Evidence from the Gambia', *Economics, Management and Sustainability* 5(1), 48–67. https://doi.org/10.14254/jems.2020.5-1.5

Chenery, H.B., 1967, 'Foreign assistance and economic development. International economic association series', in J.H. Adler (ed.), *Capital movements and economic development*, pp. 268–292, Palgrave Macmillan, London.

Chenery, H.B. & Strout, A.M., 1966, 'Foreign assistance and economic development', *The American Economic Review* 56(4), 679–733, viewed 09 June 2024, from http://www.jstor.org/stable/1813524.

Chowdhury, E.K., Dhar, B.K. & Gazi, M.A.I., 2023, 'Impact of remittance on economic progress: Evidence from low-income Asian frontier countries', *Journal of the Knowledge Economy* 14(1), 382–407. https://doi.org/10.1007/s13132-022-00898-y

Ehigiamusoe, K.U. & Lean, H.H., 2019, 'Foreign capital inflows and economic growth in Nigeria: Any nexus?', *Journal of African Business* 20(4), 455–471. https://doi.org/10.1080/15228916.2019.1581010

Fambon, S., 2013, *Foreign capital inflow and economic growth in Cameroon*, WIDER Working Paper 2013/124, UNU-WIDER, Helsinki.

Globerman, S., 1979, 'Foreign direct investment and "Spillover" efficiency benefits in Canadian manufacturing industries', *Canadian Journal of Economics, Canadian Economics Association* 12(1), 42–56. https://doi.org/10.2307/134570

Grossman, G.M. & Helpman, E., 1991, 'Trade, knowledge spillovers, and growth', *European Economic Review* 35(1–2), 517–526. https://doi.org/10.1016/0014-2921(91)90153-A

Hejuan, Z., Yue, W. & Yue, W., 2018, 'Banking development, capital accumulation and economic growth-empirical study on Gansu Province', in J. Xu, F. Cooke, M. Gen & S. Ahmed (eds.), *Proceedings of the Twelfth International Conference on Management Science and Engineering Management. ICMSEM 2018. Lecture Notes on Multidisciplinary Industrial Engineering*, pp. 1045–1057, Springer, Cham. https://doi.org/10.1007/978-3-319-93351-1_82

Herzer, D. & Nowak-Lehnmann, D.F., 2006, 'What does export diversification do for growth? An econometric analysis', *Applied Economics* 38(15), 1825–1838. https://doi.org/10.1080/00036840500426983

Hussain, M. & Haque, M., 2016, 'Foreign direct investment, trade, and economic growth: An empirical analysis of Bangladesh', *Economies* 4(2), 7. https://doi.org/10.3390/economies4020007

Imai, K.S., Gaiha, R., Thapa, G. & Annim, S.K., 2012, 'Microfinance and poverty—A macro perspective', *World Development* 40(8), 1675–1689. https://doi.org/10.1016/j.worlddev.2012.04.013

Jallow, C., 2023, 'Linkage between remittances and economic growth: Empirical evidence from the Gambia', *Journal of Development Innovations* 7(2), 42–55.

Khatir, A., & Güvenek, B., 2021, 'The effects of FDI and remittances on the economic growth of selected SAARC countrıes', *Journal of Economic and Administrative Approaches* 3(2), 66–76.

Kurozumi, E. & Hayakawa, K., 2009, 'Asymptotic properties of the efficient estimators for cointegrating regression models with serially dependent errors', *Journal of Econometrics* 149(2), 118–135. https://doi.org/10.1016/j.jeconom.2008.11.003

Lensink, R. & Morrissey, O., 2006, 'Foreign direct investment: Flows, volatility, and the impact on growth*', *Review of International Economics* 14(3), 478–493. https://doi.org/10.1111/j.1467-9396.2006.00632.x

Lozi, B.M. & Shakatreh, M., 2019, 'The impact of international capital flows on Jordan's economic growth', *International Journal of Economics and Financial Research* 59, 214–220. https://doi.org/10.32861/ijefr.59.214.220

Maksimova, I., 2024, 'Relationship between capital accumulation and production growth in the interpretation of the R. Solow's model of economic growth', *Research Result Economic Research* 10(2), 68–79. https://doi.org/10.18413/2409-1634-2024-10-2-0-8

Odhiambo, N.M., 2022, 'Foreign direct investment and economic growth in Kenya: An empirical investigation', *International Journal of Public Administration* 45(8), 620–631. https://doi.org/10.1080/01900692.2021.1872622

Olayungbo, D.O., Olaniyi, C.O. & Ojeyinka, T.A., 2020, *Asymmetric effects of remittances on conomic growth in Nigeria: Evidence from non-linear ARDL analysis*, Research Square. https://doi.org/10.21203/rs.3.rs-126145/v1

Orji, A., Uche, A.S. & Ilori, E.A., 2014, 'Foreign capital inflows and growth: An empirical analysis of WAMZ experience', *International Journal of Economics and Financial Issues* 4(4), 971–983.

Oteng-Abayie, E.F. & Frimpong, J.M., 2006, 'Bounds testing approach to cointegration: An examination of foreign direct investment trade and growth relationships', *American Journal of Applied Sciences* 3(11), 2079–2085. https://doi.org/10.3844/ajassp.2006.2079.2085

Phillips, P.C.B. & Hansen, B.E., 1990, 'Statistical inference in instrumental variables regression with I(1) processes', *The Review of Economic Studies* 57(1), 99. https://doi.org/10.2307/2297545

Prasad, E.S., Rajan, R.G. & Subramanian, A., 2007, 'Foreign capital and economic growth', *Brookings Papers on Economic Activity* 2007(10), 153–209. The Johns Hopkins University Press, viewed n.d., from http://www.jstor.org/stable/27561577.

Ramirez, M.D., 2023, 'Do remittances promote labor productivity in Mexico? A DOLS and FMOLS analysis, 1970–2017', *Bulletin of Applied Economics* 10(1), 115–131. https://doi.org/10.47260/bae/1016

Romer, P.M., 1990, 'Endogenous technological change', *Journal of Political Economy* 98(5), S71–S102. https://doi.org/10.1086/261725

Sarkar, P., 2007, *Does Foreign direct investment promote growth? Panel data and time series evidence from less developed countries, 1970–2002*, MPRA Paper, 5176, Munich Personal RePEc Archive (MPRA), viewed n.d., from https://mpra.ub.uni-muenchen.de/id/eprint/5176.

Sghaier, I.M., 2021, 'Foreign financial flows, human capital and economic growth in North African countries', *Economic Alternatives* 27(3), 355–371. https://doi.org/10.37075/EA.2021.3.02

Shahbaz, M. & Rahman, M.M., 2010, 'Foreign capital inflows-growth nexus and role of domestic financial sector: An ARDL cointegration approach for Pakistan', *Journal of Economic Research (JER)* 15(3), 207–231.

Stock, J.H. & Watson, M.W., 1993, 'A simple estimator of cointegrating vectors in higher order integrated systems', *Econometrica* 61(4), 783. https://doi.org/10.2307/2951763

Studenmund, 2006, *Using econometrics: A practical guide*, 5th edn., Pearson International Edition, Boston.

Sunde, T., 2023, 'The impact of foreign direct investment on Namibia's economic growth: A time series investigation', *Cogent Economics & Finance* 11(1), 2210857. https://doi.org/10.1080/23322039.2023.2210857

Sutradhar, S.R., 2020, 'The impact of remittances on economic growth in Bangladesh, India, Pakistan and Sri Lanka', *International Journal of Economic Policy Studies* 14(1), 275–295. https://doi.org/10.1007/s42495-020-00034-1

Tang, K.-B. & Bundhoo, D., 2017, 'Foreign aid and economic growth in developing countries: Evidence from sub-Saharan Africa', *Theoretical Economics Letters* 07(05), 1473–1491. https://doi.org/10.4236/tel.2017.75099

Touray, A., 2020, 'The nexus between income and Foreign direct investment: Evidence from the Gambia', *Journal of World Economic Research* 9(1), 1. https://doi.org/10.11648/j.jwer.20200901.11

United Nations Conference on Trade and Development (UNCTAD), 2024, *World Investment Report 2024*, United Nations, viewed 26 November 2024, from https://unctad.org/wir.

Uz Zaman, Q., Donghui, Z., Yasin, G., Zaman, S. & Imran, M., 2018, 'Trade openness and FDI inflows: A comparative study of Asian countries', *European Online Journal of Natural and Social Sciences* 7(2), 386–396.

World Bank, 2024, *Gambia, the—economic update: Jumpstarting inclusive and sustained growth – Spring 2024*, World Bank Group, Washington, DC, viewed 17 October 2024, from http://documents.worldbank.org/curated/en/099052124221540465/P5004821f1d6a90b81b7231d812cc67b395.

Yeboua, K., 2021, 'Foreign direct investment and economic growth in Africa: New empirical approach on the role of institutional development', *Journal of African Business* 22(3), 361–378. https://doi.org/10.1080/15228916.2020.1770040