

## MODERATING FINANCIAL DEVELOPMENT EFFECT AND ECONOMIC GROWTH IN WEST AFRICA SUB-REGION

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*Abstract: This study empirically investigated financial development moderating task on the connection allying various types of financial inflows (foreign direct investment, foreign portfolio investment, foreign debt flows, and remittances) and economic growth in the West Africa sub-region, while accounting for cross-sectional dependence existence. The analysis is motivated by the need to understand how financial development level influences financial inflow effectiveness in economic growth promotion, given the interconnectedness and potential spillover effects among countries in the region. Drawing from a panel dataset spanning 1990-2022 for five West African countries, a range of econometric techniques was employed to address cross-sectional dependence and slope heterogeneity, among which includes: slope homogeneity tests, cross-sectional dependence tests, second-generation panel unit root tests, and estimation methods robust to cross-sectional dependence, such as Common Correlated Effects Mean Group (CCEMG) and Augmented Mean Group (AMG) estimators. Using the CCEMG estimator, financial development exerted a positive and significant influence on economic growth, and its interaction with foreign portfolio investment was also positive and significant. The AMG estimator provided additional insights, showing remittances had a positive impact on growth, while foreign portfolio investment negatively affected growth. Notably, the interaction between financial development and remittances was negative and significant under the AMG model. These mixed results suggest that while financial development generally promotes growth, its interactions with different types of capital flows can have varying and even opposing effects depending on the specific combination and empirical approach used. The study concludes that financial development engages in a crucial moderating task in the connection allying financial inflows and economic growth in the West Africa sub-region, with varying effects across different types of financial inflows. The findings underscore the relevance of accounting for cross-sectional dependence and heterogeneity in panel data analysis and have policy implications for harnessing the potential gains of financial inflows while promoting sustainable growth in the West Africa sub-region.*

*Keywords: Financial inflows, financial development, economic growth, AMG, CCEMG*

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## **Introduction**

The association between financial inflows, financial development, and economic growth has been extensively studied in various contexts. Still, the task of financial development in moderating this relationship, particularly in the cross-sectional dependence companionship, remains an important area of research. This is especially relevant for the West Africa sub-region, where countries share economic ties, regional institutions, and potential spillover effects.

Financial inflows, such as foreign direct investment (FDI), portfolio investments, and remittances, can significantly impact economic growth by providing resources for investment, technology transfer, and access to international markets (Agbloyor et al. 2014; Anyanwu, 2012). However, the effectiveness of these inflows in promoting growth may be influenced by the level of financial development, which refers to the depth and efficiency of a country's financial markets, institutions, and instruments (Ehigiamusoe & Lean, 2018; Svirydzenka, 2016). Also, cross-sectional dependence, which arises due to common shocks, spillover effects, or other unobserved factors affecting multiple countries simultaneously, is particularly relevant in the West Africa sub-region due to the close economic ties and shared regional institutions among member countries (Asongu et al., 2019; Eberhardt & Teal, 2011). Ignoring cross-sectional dependence can lead to biased and inconsistent estimates, as well as invalid statistical inferences (Pesaran, 2007).

Consensus from literature on financial development moderating tasks in the connection allying financial inflows and economic growth in cross-sectional dependence existence in the West Africa sub-region is important and numerous empirical studies have found evidence that financial development positively moderates financial inflows consequence on economic growth. Ehigiamusoe and Lean (2018) investigated financial development tasks in moderating the connection allying FDI inflows as well as economic growth in West African countries. Their findings show that financial development, measured by local credit to the private sector, enhances positive impact of FDI inflows on economic growth. Similarly, Svirydzenka (2016) concluded that countries with more advanced financial systems tend to gain more from FDI inflows regarding economic growth. Other studies have focused on the importance of accounting for cross-sectional dependence in analyzing this association. Asongu et al. (2019) examined the convergence in financial development across African countries, considering cross-sectional dependence. They found evidence of convergence clustering, highlighting the interconnectedness among countries in the region. Eberhardt and Teal (2011) emphasized the reason to account for cross-sectional dependence in growth empirics, as ignoring it can lead to biased and inconsistent estimates. Several researchers have combined both aspects, investigating the moderating task of financial development while accounting for cross-sectional dependence. Effiong and Ozili (2022) explored remittance inflows' effect on economic growth in West African countries, considering the moderating task of financial development and cross-sectional dependence. Their findings suggest that financial development enhances the positive impact of remittances on economic growth, and accounting for cross-sectional dependence is crucial for reliable inferences. Also, studies have underscored the importance of country-specific factors and institutional features in shaping the connection allying financial inflows, financial development, and economic growth. Adeniyi and Sotubo (2020) examined financial development tasks and institutional grade in moderating the consequence of capital inflows on economic growth in West African countries. They found financial

development and institutional quality significantly moderate the association, highlighting the need for policy interventions to strengthen these factors. In addition, Shahbar et al. (2020) found financial development had varying effects on economic growth across different countries and regimes, while trade openness positively impacted growth in at least 8 countries, and gross capital formation increased growth long-term. For an emerging markets, Nguyen et. al., (2022) identified a positive, linear connection allying financial development and growth, as well as bidirectional Granger causality. Agbloyor et al. (2014) reported foreign investment and debt flows negatively impacted development in areas with robust financial markets, while poor financial markets made countries vulnerable to capital outflows suppressing growth. Amna and Riadh (2019) found FDI and remittances had short-term negative but long-term neutral effects on growth, while ODA had a negligible impact. Amna and Faouzi (2020) showed FDI and remittances were positive for low-income countries, while ODA was adverse. Ho et al. (2021) found trade openness promoted growth in ASEAN nations, and financial development had an indirect positive effect via trade. Adegboyega et al. (2021) suggested Bhagwati's hypothesis exists partially in Nigeria, necessitating trade policy reforms for capital inflows to boost growth. Adeniyi et al. (2015) showed FDI increased growth while inflation decreased it, and financial development positively impacted growth.

A cursory in the literature has narrowly relied on two measures of financial development indicators (local credit given by the financial sector to the private sector that measures depth of finances and wide money supply to GDP ratio that captures the size) (see Adeniyi et al., 2015). However, studies are yet to explore the united impact of all these identified financial inflows on economic growth by pulling together all financial development indexes in the West African sub-region. The current research considers a comprehensive financial development estimates that encapsulates access, efficiency, stability, and depth as against local credit given by the financial sector to the private sector and wide money supply to GDP ratio. Given the importance of financial inflows in enhancing economic growth and the potential moderating financial development tasks, there is a need to investigate the association

## **Material and Methods**

### *Data Sources and Measurement*

This study utilizes data from 5 West African countries spanning 1990-2022, data available for the key variables: economic growth (GDP), international portfolio investment (FPI), international portfolio debt flows (FDF), international direct investment (FDI), remittances (REM), and financial development (FD) (see Giuliano & Ruiz-Arranz, 2009; Barajas et al. 2009; George et al. 2021). Data was sourced from the WDI, IMF, Global Development Finance, and OECD databases. Unlike previous studies using GDP growth rates, this study examines the transformation of savings into long-term investments fostering capital accumulation. Financial development is measured using Sahay et al.'s (2015) comprehensive metric encompassing the depth, access, and efficiency of financial institutions and markets. Table 1 summarizes variable measurements and sources.

**Table 1. Data Description, Measurement, and Sources**

Variables	Description	Sources
Economic Growth (GDP)	Gross domestic product per capita	World Bank, WDI

Foreign portfolio investment (FPI)	This includes net inflows that cover transactions in equity securities and debt securities as a share of GDP.	IMF and World Bank Index
Foreign Portfolio Debt flows (FDF)	This is the sum of portfolio debt and other investment stock and shares as a ratio of GDP.	IMF, World Bank, and Global Development Finance
Foreign Direct Investment (FDI)	FDI is computed as a proportion of GDP	IMF, World Bank, WDI
Remittances (REM)	Remittances to GDP proportion	IMF World Bank, WDI
Gross Capital Formation (GFC)	Gross capital formation to GDP proportion	OECD, World Bank, WDI
Trade Openness (TO)	Share of exports to GDP ratio	World Bank, WDI
Financial Development (FD)	i. Domestic credit to private sector ii. Liquid liabilities to GDP iii. Private credit as a percent of GDP iv. Bank lending deposit spread	World Bank, WDI

Source: Made by Authors (2024)

### Model Specification and Empirical Strategy

The study relied on the AK model that got its root from the Cobb-Douglas Production function, which is expressed as a total capital stock linear function. Thus, represented as

$$Y_t = A_t K_t \quad (1)$$

Equation 1 establishes the theoretical foundation upon which the empirical model is constructed to analyse the interactive financial development task in association between financial inflows and economic growth in West Africa. Therefore, the estimated equation becomes

$$\begin{aligned} GDP_{i,t} = & \varphi_1 + \varphi_2 \ln REM_{i,t} + \varphi_3 \ln GFC_{i,t} + \varphi_4 \ln FDF_{i,t} + \varphi_5 \ln FDI_{i,t} + \varphi_6 \ln FPI_{i,t} \\ & + \varphi_7 FD_{i,t} + \varphi_8 (\ln REM_{i,t} * FD_{i,t}) + \varphi_9 (\ln FDI_{i,t} * FD_{i,t}) \\ & + \varphi_{10} (\ln FPI_{i,t} * FD_{i,t}) + \varphi_{11} (\ln FDF_{i,t} * FD_{i,t}) + \varphi_{12} \ln TO_{i,t} + \mu_i \\ & + \varepsilon_{i,t} \end{aligned} \quad (2)$$

From equation 2, Remittances may also affect economic growth level, depending on their utilization ( $2 \lesseqgtr 0$ ). Vargas-Silva, Jha & Sugiyarto (2009) supported a positive relationship, while A. Barajas et al. (2009) reported a negative nexus existence. Furthermore, the coefficients of  $\beta_7$  and  $\beta_8$  are predicted positive as growth-enhancing (Barro, 2000; Haider et al. 2016). However, if outpacing GDP (i.e., falling income per capita), it may harm economic growth. Also, the interactive coefficient between financial inflows and financial development is expected to be rising.

### Results

This section reports the empirical findings, commencing with descriptive statistics that summarize crucial indicators about financial inflows, financial development, and economic growth across the West African region.

#### Pre-Estimation Results: Descriptive Statistics, Correlation and Unit Roots

The descriptive analysis outcomes for the West African sub-region are presented in Table 2 and encapsulate the mean, median, maximum (Max.), and minimum (Min.) values,

skewness, and kurtosis statistics along with the associated probability values. For all variables employed, the average values (mean) of gross domestic product (GDP) 3.021, foreign direct investment (FDI) 2.542; remittances (REM) 1.642; gross fixed capital formation (GFC) 20.991; and financial development (FD), 0.132 were all greater than the value of the median whereas, the reverse is the case for foreign portfolio investment (FPI) and foreign debt (FDF). Also, the average values for all variables fall between maximum and minimum values. This however indicates a high tendency of a normal distribution. In addition, the skewness outcomes show portfolio equity investment (FPI) and gross domestic product (GDP) are negatively skewed while foreign direct investment (FDI), foreign debt (FDF), remittances (REM), gross fixed capital formation (GFC), and financial development (FD) were positively skewed. This portrays that all variables are imbued with elements of asymmetric distribution in either part. Furthermore, the kurtosis outcome from the table for all variables reveals that the coefficients are approximately greater than 3 and less than 3, but not exactly 3. This further suggests that the distribution is in-between platykurtic and leptokurtic in shape. Sequel to the above, the outcomes still indicate that all the variables were normally distributed.

**Table 2. Descriptive Statistics**

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Probability
GDP	3.021	3.063	3.429	2.599	0.259	-0.214	1.625	0.001
FDI	2.542	1.451	18.828	-1.118	2.983	2.294	9.789	0.000
FD	0.132	0.120	0.273	0.048	0.051	0.430	2.328	0.024
GFC	20.991	19.366	53.122	7.396	8.667	1.282	5.180	0.000
FDF	22.666	22.674	24.817	20.449	1.097	0.035	1.736	0.006
FPI	8.675	8.794	9.979	6.695	0.624	-0.667	3.567	0.001
REM	1.642	0.943	10.489	0.014	1.923	1.994	6.725	0.000
TO	22.195	22.194	24.991	19.752	1.525	0.049	1.601	0.002

Source: Made by Authors

Another crucial pre-test is the correlation analysis to address multicollinearity, with the correlation matrices presented in Table 3. The correlation coefficients indicate both negative and positive correlations among the variables of interest. However, with coefficients less than 0.95, the results suggest no serious multicollinearity issues (Baltagi, 2005). This implies that estimating the model does not pose a multicollinearity threat for the sub-regions, as the connections among economic growth, financial inflows, and financial development are dependent-independent.

**Table 3. Correlation Matrix**

Variable	GDP	FDI	FDF	FPI	REM	FD	GFC	TO
GDP	1.000							
FDI	-0.065	1.000						
FDF	0.716	-0.120	1.000					
FPI	0.103	-0.156	0.130	1.000				
REM	0.456	0.175	0.440	0.304	1.000			
FD	0.765	-0.193	0.732	0.355	0.452	1.000		
GFC	0.080	0.370	0.237	-0.212	0.037	-0.005	1.000	
TO	0.651	0.014	0.817	0.189	0.565	0.796	0.204	1.000

Source: Made by Authors

Furthermore, in panel data analysis, cross-sectional dependence arising from common shocks across countries is crucial, as unobserved shocks can lead to arbitrary correlations across economies in a globalized context (Eberhardt & Teal, 2010). Additionally, heterogeneity among countries must be considered when analyzing the impact of exogenous variables on endogenous variables. Assuming homogeneity can overlook country-specific characteristics (Breitung, 2005). Therefore, Table 4 presents the slope homogeneity test results using Pesaran & Yamagata's (2008), the  $\Delta^{\wedge}$  (delta) and  $\Delta^{\wedge}$  (delta) adj. tests. Based on the outcomes of the tests, the tests reject slope homogeneity at the 5% significance level.

**Table 4. Slope Homogeneity Test**

Tests	Statistics Value	p-value
Pesaran & Yamagata (2008):		
$\hat{\Delta}$ (delta) test	2.534	0.000 **
$\hat{\Delta}$ (delta) adj. test	3.310	0.000 **
Blomquist & Westerlund (2013):		
$\Delta_{HAC}$	-2.418	0.001 **
$(\Delta_{HAC})$ adj.	-3.303	0.001 **

Source: Made by Authors

Note: \* P <0.01, \*\* P <0.05 respectively.  $\Delta^{\wedge}$  (delta) test: test for homogeneity of simple slopes;  $\Delta^{\wedge}$  (delta) adj. test: mean-variance bias-adjusted test for homogeneity of slopes;  $\Delta_{HAC}$ : heteroscedasticity and autocorrelation-consistent version of the test for homogeneity of simple slopes;  $(\Delta_{HAC})$  adj.: heteroscedasticity and autocorrelation consistent version of mean-variance bias-adjusted test for homogeneity of slopes..

Having established the existence of long-run co-movement among variables through slope homogeneity tests, cross-sectional dependence tests are imperative to determine whether first or second-generation unit root tests are required. Various tests, including Breusch and Pagan's (1980) LM test, Pesaran's (2004) scaled LM and CD tests, and Baltagi et al.'s (2012) bias-corrected scaled LM test, were employed and presented in Table 5. The null hypothesis of no cross-sectional dependence is rejected at the 1% significance level, suggesting sufficient cross-sectional dependency among variables across countries.

**Table 5. Cross-Sectional Dependence Tests**

Methods	Breusch-Pagan LM		Pesaran scaled LM		Bias-corrected scaled LM		Pesaran CD	
Variable	Statistic	Prob.	Statistic	Prob.	Statistic	Prob.	Statistic	Prob.
GDP	139.059	0.000	28.858	0.000	28.772	0.000	11.085	0.000
FDI	33.451	0.000	5.243	0.000	5.157	0.000	1.352	0.176
FDF	70.204	0.000	13.462	0.000	13.375	0.000	2.713	0.006
FPI	27.531	0.000	3.920	0.000	3.833	0.000	1.414	0.157
TO	206.758	0.000	43.996	0.000	43.910	0.000	14.209	0.000
REM	46.794	0.000	8.227	0.000	8.141	0.000	4.510	0.000
GFC	75.277	0.000	14.596	0.000	14.510	0.000	-0.759	0.447
FD	50.479	0.000	9.051	0.000	8.965	0.000	3.639	0.000

Source: Made by Authors

Note: \*\* P <0.05, \* P <0.10 respectively

Given cross-sectional dependence existence and slope heterogeneity, Table 6 presents second-generation unit root tests, as recommended by Swamy & Dharni (2020) and

Hussain et al. (2021) for cases with cross-sectional dependence. Based on the critical values of -2.210, -2.330, and -2.570 at the 10%, 5%, and 1% significance levels, respectively, for both intercept and time trend cases and compared with the outcomes in Table 6. The results implies that all variables are integrated into order one, I(1).

**Table 6. Outcomes of Second-Generation Panel Unit Root Tests**

Methods	CIPS			CADF		
Variable	I(0)	I(1)	Integration order	I(0)	I(1)	Integration order
GDP	-0.273	-3.745**	I1	-1.182	-3.372**	I1
REM	-2.587**	-5.281**	I1	-2.400**	-4.036**	I1
FDI	-2.885**	-4.966**	I1	-3.340**	-3.764**	I1
FPI	-2.314**	-4.067**	I1	-2.087	-3.146**	I1
FDF	-1.450	-4.844**	I1	-1.264	-2.742**	I1
FD	-2.285*	-5.361**	I1	-2.464**	-4.555**	I1
TO	-2.910**	-5.944**	I1	-2.216	-4.496**	I1
GFC	-1.891	-4.307**	I1	-1.894	-2.824**	I1

Source: Made by Authors

Note: \*\*\* P < 0.01, \*\* P < 0.05 and P < 0.1 respectively

## Discussion

To analyze the mediating task of financial development on the connection between financial inflows and economic growth in the West African sub-region, we ran CCEMG as suggested by Pesaran (2006) which permits both the strong and weak effects of unobserved common factors robustness in the model and AMG as proposed by Eberhardt & Teal (2010) both of which would produce consistent and unbiased results. The results are presented in Table 7. The CCEMG estimates reveal that gross capital formation (GFC) exerts a significant and negative influence on economic growth (GDP) at a 5% level of significance resulting in about 0.003 percent drop in economic growth ( $P < 0.05, t = 1.93$ ). This fails to support endogenous growth model, which underscores capital as a crucial determinant input for growth in the region as it impeded economic expansion. The trade openness (TO) coefficient positively influences economic growth and was found to be statistically significant at a 5 percent significance level, with a one percent rise in trade openness resulting in a 0.067 increase in economic growth ( $P < 0.05, t = 2.50$ ). This implies that trade openness assisted in the growth process of the West African sub-region significantly

**Table 7. Financial Inflows and Economic growth: Financial Development task**

Independent Variable	CCEMG		AMG	
	Coefficient	t-Stat	Coefficient	t-Stat
FDI	-0.006	-0.12	0.0001	0.04
REM	-0.003	-0.09	0.016*	1.66
FDF	0.158	0.95	--0.155	-1.05
FPI	-0.004	-0.10	-0.142**	-1.95
GFC	-0.003**	1.93	-0.0001**	-20.51
TO	0.067**	2.50	0.029**	2.20
FD	0.125**	8.10	-30.59*	-1.65
FD*FDI	0.095	0.24	0.021	0.44
FD*REM	-0.030	-0.06	-0.031**	-2.09
FD*FPI	1.858**	2.00	0.759**	2.00

FD*FDF	-1.415	-0.85	1.080	1.24
Wald Chi2 (Prob.)	17.53		446.40**	

Source: Made by Authors

Note: \*\*\* P <0.01, \*\* P <0.05 and P <0.1 respectively.

Also, the financial development index (FD) shows a positive and significant connection with economic growth, having a 0.125 percent increase in financial development attributable to economic growth. This aligns with the work Adeniyi et al (2015) and Nguyen et al (2022) affirming positive financial development impact on growth. This suggests that financial development has a better gain on economic growth in the region as well as an imperative impetus for growth, importantly by providing entrepreneurial activities with financial support. While the various components of financial inflows in Table 7 exhibit varied signs and magnitudes, they were found to be statistically insignificant. This suggests that although these financial inflows were directed toward the sub-region, they were not adequately channeled into the more productive sectors of the economy and these findings were in line with the submission by Adeniyi et al (2015) that ascribed the insignificance in financial inflows to the nature and destination of flows to sub-region.

Also, modulating financial development tasks with foreign portfolio investment (FD\*FPI) on economic growth is positive as well as statistically significant (1.858) at a 5% level of significance ( $P < 0.05, t = 2.00$ ). This suggests that financial development facilitates foreign portfolio investment, thereby positively impacting economic growth of the sub-region. The positive sign associated with the moderating role indicates that financial development and foreign portfolio investment act as complementary factors in promoting growth in the West African sub-region. However, the coefficients of the moderating roles of financial development alongside foreign direct investment (FD\*FDI), foreign debt (FD\*FDF), and remittances (FD\*REM) on economic growth were found to be statistically insignificant. This implies that the level of financial development has not effectively enhanced the inflow of these financial resources to the West African sub-region.

For the robustness check, Table 7 equally presents the outcome of the financial development moderating task on financial inflows-economic growth connection in the West African sub-region using augmented mean group (AMG) estimates. At a glance, the outcome shows that the coefficient of portfolio equity investment (FPI) has a negative and significant association with economic growth, with a 0.142 percent decrease in foreign portfolio equity investment attributable to growth ( $P < 0.05, t = 1.95$ ). This thereby contravenes the aprior expectation from the theoretical proposition. The finding aligned with the submission by Chee-Keong et al (2010). Also, the remittances coefficient is found to be positive and statistically significant in terms of its relationship with economic growth, with a 1 percent increase in remittances (REM) translating into about 0.016 percent increase in economic growth and significant at 10% level ( $P < 0.01, t = 1.66$ ). This could be because the remittances flow to the West Africa sub-region had been used for developmental projects that have assisted in the growth of the economy as against to family use. The finding is in support of the study conducted by Adeniyi et al (2015); Amna & Faouzi (2020). However, as it was observed from common correlated effects estimates (CCEMG), the influence of both foreign direct investment (FDI) and foreign debts (FDF) is found insignificant. Thus, point to the fact that not all forms of financial inflows



contribute positively to economic growth, as the West African sub-region has undertaken various forms of reforms to attract foreign financial inflows.

Furthermore, the gross capital formation (GFC) coefficient exerts a significant and negative influence on economic growth (GDP) at a 5% level of significance ( $P < 0.05, t = 1.93$ ). This implies that a 1 percentage rise in gross capital formation leads to a 0.0001 reduction in economic growth. Trade openness (TO) coefficient positively influences economic growth and was found to be statistically significant at a 5 percent significance level, with a 1 percent rise in trade balance resulting in a 0.027 increase in economic growth ( $P < 0.05, t = 2.20$ ). This is in line with the study examined by Ho et al (2021), showing how trade openness promotes economic growth. However, the financial development (FD) coefficient yields a negative and significant relationship with economic growth at a 10% significant level. This suggests that a 1 percent rise in financial development attributable to 30.59 percent drop in economic growth.

Also, the effect of financial development moderating task with foreign portfolio investment (FD\*FPI) on economic growth is statistically significant and positive (0.759) at a 5 percent level of significance ( $P < 0.05, t = 2.00$ ). This indicates that financial development does enhance foreign portfolio investment to improve positive growth in the West African sub-region. With a positive sign, the moderating task shows that the two factors (Financial development and foreign portfolio investment) serve as complements in improving the growth of the region. Moreover, the financial development moderating task effect with remittances (FD\*REM) on economic growth is statistically significant and negative (-0.031) at a 5 percent level of significance ( $P < 0.05, t = -2.09$ ). This indicates that financial development inhibits remittances negatively on economic growth in the West Africa sub-region. The moderating task shows that the two factors (Financial development and remittances) do not complement growth in the West African sub-region. Furthermore, financial development moderating task along with foreign direct investment (FD\*FDI) and foreign debt (FD\*FDF) on economic growth were found not to be statistically significant. This implies that the level of financial development has not enhanced the flow of finances to the West African sub-region.

## **Conclusions**

The study investigates financial development moderating task on allaying financial inflows and economic growth in the presence of cross-sectional dependence in the West Africa sub-region. The empirical analysis, conducted using data from five West African countries (Niger, Nigeria, Cote d'Ivoire, Ghana, and Guinea) spanning 1990-2022, employs robust panel data techniques to affirm for cross-sectional dependence and slope heterogeneity. The findings from the Common Correlated Effects Mean Group (CCEMG) estimator reveal that financial development positively and significantly influences economic growth in the West Africa sub-region. This result is consistent with the notion that well-developed financial systems facilitate resource allocation, mobilize savings, and promote productive investments, thereby fostering economic growth.

Furthermore, the study finds that financial development enhances the positive effect of foreign portfolio investment (FPI) on economic growth in the sub-region. The interaction term between financial development and FPI is positive and statistically significant, suggesting that the two factors complement each other in driving economic growth. This

highlights the importance of financial development in channeling portfolio investment inflows into productive sectors and ensuring their effective utilization. However, the moderating task of financial development on the impacts of foreign direct investment (FDI), foreign debt flows (FDF), and remittances are found to be insignificant. This implies that the financial development magnitude in the West African sub-region has not been effective in enhancing the potential gains of these financial inflows for economic growth. Although the Augmented Mean Group (AMG) estimator provides additional insights, revealing that remittances have a positive and significant effect on economic growth in the sub-region. This finding suggests that remittance inflows have been utilized for developmental purposes and productive investments, contributing to economic growth. Conversely, FPI exerts a negative and significant effect on economic growth, which may be attributable to potential destabilizing effects or misallocation of portfolio investment flows. Notably, the interaction term between financial development and remittances is negative and significant, implying that financial development inhibits the positive contribution of remittances to economic growth in the sub-region. This counterintuitive result may be attributed to factors such as inefficiencies in the financial system, inadequate financial infrastructure, or regulatory barriers that hinder the effective channeling of remittances into productive investments. The study's findings underscore the importance of accounting for cross-sectional dependence and heterogeneity in panel data analysis, as ignoring these factors can lead to biased and inconsistent estimates. The cross-sectional dependence existence and slope heterogeneity among the West African countries necessitate the use of robust panel data techniques to ensure reliable inferences.

Overall, the study concludes that financial development plays a crucial moderating task in the association allying financial inflows and economic growth for the West Africa sub-region, with varying effects across different types of financial inflows. While financial development enhances the positive effect of FPI on economic growth, its moderating effects on the connection allying economic growth and FDI, foreign debt flows, and remittances are insignificant or, in the case of remittances, counterintuitive.

The outcomes have important policy implications for policymakers in the West Africa sub-region. Efforts should be directed toward strengthening financial systems, institutions, and markets to harness the potential gains of financial inflows, particularly FPI and remittances. This may involve implementing reforms to improve financial infrastructure, regulatory frameworks, and access to financial services. Furthermore, measures should be taken to attract and effectively utilize FDI and foreign debt inflows, as their impacts on economic growth were found to be insignificant in the current study. This could involve creating a conducive business environment, improving institutional quality, and ensuring transparency in the utilization of these inflows.

It is also crucial to monitor and regulate foreign portfolio investment flows to mitigate potential negative effects on economic growth, such as speculative bubbles or destabilizing capital movements. Additionally, country-specific factors and institutional characteristics should be considered when designing policies to harness the gains of financial inflows and promote sustainable economic growth in the West Africa sub-region. This may involve tailoring policies to address unique challenges and opportunities within each country while leveraging regional cooperation and coordination mechanisms.

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