External Financing and Financial Development in Developing Countries: Aggregate and Disaggregate Empirical Evidence from West Africa

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Abstract

External financing as one of the drivers of financial development remains a subject of ongoing debate. While some studies assert a positive influence, others dispute this claim. This study contributes to the existing studies on the subject matter, with the primary objective of examining the overall or aggregate effects of external financing on financial development. Specifically, the study examines the individual effects of external financing factors (FDI, ODA, and remittances) on financial development, both in the short and long run, by employing annual panel data spanning from 1980 to 2021 for the selected West African countries. To achieve this, the study employs the panel autoregressive distributed lag (PARDL) variants (mean group - MG, dynamic fixed effect - DFE, and pooled mean group - PMG) techniques. The results from the PMG and DFE estimations reveal that external financing as a whole has an impact on financial development in West African countries both in the long and short run. Remittance, economic growth, and inflation rate also have a significant influence on financial development both in the long and short run. While ODA is detrimental to financial development in the long run, FDI does not influence financial development. It is therefore imperative for stakeholders within the sub-region to encourage and facilitate the use of remittances, economic growth, and inflation rate as means of promoting financial development in West Africa, while simultaneously ensuring that FDI and ODA are used to promote self-sufficiency and financial stability and align with the region's developmental goals.

Keywords: External Financing, Financial Development, Remittances, FDI, ODA, #SDG8.

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1.0   Introduction

Financial system development is thought to promote the efficient allocation of resources and hence enhances a country's absorptive capacity in terms of foreign financial inflows (Nadeem, Liu, Ali, Younis, Bilal & Xu, 2020). A highly developed financial system, in particular, may contribute to the technical diffusion process linked with any international financial flows. It is stated that a strong and functional financial sector is essential for economic growth because it enables effective savings allocation and use, enhances investment, and improves trading, diversification, and risk management (Puatwoe & Piabuo, 2017; Jagadish, 2018).

As vital as the financial system is to any economy, it is a worthwhile exercise for the policymakers of each nation to ensure that its services are well developed to meet the required demand for them and to ensure that the factors that affect its development are being monitored. Nations must ensure that elements that might impede the growth of the financial sector are restrained, while elements that support it are fully employed. The inflow of international capital and transfers is one of the elements that are thought to aid the growth of the financial sector of developing nations, notably those of the Economic Community of West African States (ECOWAS). Both academic and official policy discussions support the need for international financial flows from developed to developing countries to support economic development and the elimination of poverty in low-income countries (Kregel, 2004; Appiah-Otoo, Chen & Ampah, 2023). Apart from items associated with debt and debt relief, the main categories of international financial flows consist of official development assistance (ODA), foreign direct investment (FDI), and remittances, particularly personal remittances (Huq & Tribe, 2018).

External financing flows to ECOWAS countries have expanded dramatically in the last two decades owing to their adoption of external financing sources as key strategies for economic development, as well as their major descaling of financial repression and governmental control of the financial sector (Iheonu, Asongu, Odo & Ojiem, 2020). Specifically, FDI is a source of additional financial resources for investment, and if it can be well absorbed, it can produce a positive and growing impact on the receiving economy. FDI has been a substantial source of external finance in ECOWAS countries and as such, many governments in the ECOWAS sub-region have implemented aggressive inward pro-FDI policies to obtain new technologies, create employment opportunities, attract capital, and increase exports (The ECOWAS Commission, 2018; Aderemi, Omitogun & Osisanwo, 2022). In addition, remittances have become a significant source of household income and foreign currency for developing countries, particularly ECOWAS countries (Kumar, *et, al.* 2018; World Bank, 2021).

Despite the perceived benefits that the financial sector could gain from the inflows of ODA, FDI, and remittances, the level of financial development in the ECOWAS sub-region is still low compared to the other regions of the world in terms of the depth, efficiency, accessibility and stability of their financial services (Gniniguè & Ali, 2022). This might be connected to the nature of these inflows, the entry point, and the activities that are taking place. Also, many ECOWAS countries lack the required absorptive capacity to transform these benefits into development (Ogundipe, Oye, Ogundipe & Osabohien, 2020).

Given the above-highlighted issues relating to financial development (ODA, FDI, and remittances), attempts have been made to empirically investigate if the persistent increase in the inflows of these sources of external financing has actually contributed to financial sector development, most especially among ECOWAS countries. The studies that examine the effects of each of the ODA, FDI, and remittances on either economic growth or financial development are numerous (Tsaurai, 2018; Olayungbo, & Quadri, 2019; Majeed, Jiang, Ahmad, Khan & Olah, 2021; Gniniguè, & Ali, 2022). However, studies on either the aggregate effects of all these major external financing factors or combination of two sources at a time on financial development are scanty, most especially in ECOWAS countries. The majority of the studies on external financing factors on financial development have focused on individual effects on financial development (Maruta. 2018; Keho, 2020).

The very few studies conducted on the combined/aggregate effect of ODA, FDI, and remittances on financial development were either country-specific or regional studies. To the best of our knowledge, the study on the combined role of external financing factors on financial sector development at sub-regional levels such as ECOWAS is sparse except the one conducted by Zardoub and Shoubi (2023) that examined the impact of FDI, remittances, and ODA on economic growth in developing countries. Such investigation can thus be helpful for collective policy on how to tackle the inflows of external financing factors to drive the much-needed development in the ECOWAS countries' financial sector. Furthermore, most of these few studies were based on static or micro-dynamic analysis, despite being a well-established argument that static and micro-dynamic treatment of relationships among variables yields biased estimates if a dynamic relationship actually exists.

More specifically, one of the controversies surrounding the previous studies is the measurement of financial development where studies have used different indicators to measure financial development. The different indicators used by these studies to proxy financial development may be one of the factors responsible for the different effects of individual external financing factors on financial development. To address this issue, this study made use of a composite financial development index

with multiple financial development components - financial depth, efficiency, accessibility, and stability.

In addition, there is still an ongoing discussion on the exact impact of external financing factors on financial development. While some studies support the claim that this is positive, others have reported that the effect is either negative or zero. This study therefore fills these gaps by addressing the issues highlighted so far and contributing to the existing body of knowledge on the subject matter. The main objective of this paper is to examine the overall effects of external financing on financial development among ECOWAS countries. The specific objectives include examining the long- and short-run individual effects of external financing factors on financial development.

2.0   Review of Literature

2.1   *Conceptual Review*

By converting and directing deposits from the surplus economic units to the deficit units, the financial sector plays a critical role in attaining both short- and long-term economic performance. Financial development denotes advancements in the way the financial sector operates. It includes improved risk management procedures, wider diversification of chances and options, higher information quality, and stronger incentives for responsible lending and monitoring (Abdulraheem, Ogbeide, Adeboje & Musa, 2019). Financial accessibility, depth, efficiency, and stability are just a few of the measurements that the World Bank Global Financial Database (GFDD) developed to measure financial sector development globally (Yusifzada & Mammadova, 2015).

External financing entails diverse international funding sources that facilitate, or at least possess the capacity to facilitate, progress within recipient nations when effectively deployed. This encompasses official bilateral and multilateral sources, along with private commercial and non-commercial inflows, including those from non-governmental organizations (Odedokun, 2004). For the past two decades, foreign direct investment (FDI), remittances, and official development assistance (ODA) have increased significantly as external sources of funding for development, making up the three main sources of funding that have contributed to growth and development (International Monetary Fund, 2023).

Developing economies, especially those within the ECOWAS sub-region, find themselves notably exposed to the dynamics of macroeconomic instability, economic expansion, weak institutions, and the consequential effects that impede the positive effects of external financing factors. In the face of governments grappling with resource

constraints, the role of external funding sources for financial development gains increasing prominence. These external financial factors play a growing role in supplementing government resources and aiding the sustainability of developmental efforts (Gravito, Haddon, Alli & Usanase, 2017; Noah, 2021).

2.2   *Theoretical Review*

Bagehot (1873) asserted that the presence of extensive and well-organized capital markets in England played a crucial role in efficiently directing resources towards more productive investments. This idea, which links financial development to economic growth, has historical roots. Additionally, Schumpeter (1911) emphasized the significant role of a nation's banking system in encouraging savings and facilitating profitable investments. The works of Hicks (1969), Goldsmith (1969), McKinnon (1973), and Shaw (1973) further contributed to this discourse. Notably, the McKinnon-Shaw (1973) model introduced the concept of financial repression, highlighting its negative impact on both the quantity and quality of overall investment in an economy. This is because households are less inclined to hold deposits that could be used for productive investment when interest rates on deposits are low. Several scholars, including Kapur (1976) and Mathieson (1980), have conducted investigations that have added to this growing body of knowledge and provided valuable insights in this area.

In 1952, Robinson introduced the concept of "demand following." According to this theory, financial development is a consequence of economic growth. It posits that as the real economy expands, there is an increasing need for financial services. Consequently, the demand for financial services rises, leading to the creation of new financial institutions and markets to meet this growing demand (Demetriades & Hussein, 1996). In 2003, Rajan and Zingales proposed the interest group theory of financial development, often referred to as the simultaneous openness hypothesis. This theory suggests that interest groups, global trade, and capital inflows all play a role in shaping the development of the financial system. It implies that both trade and financial openness are pivotal in fostering the growth of the financial sector. However, the theory contends that if an economy is only open to trade or capital, the growth of the financial sector will be constrained. In essence, for a country's financial industry to thrive, both trade and capital boundaries must be opened simultaneously.

2.3   *Empirical Review*

In recent decades, there has been a notable resurgence of interest and a significant increase in the examination of financial systems' role in economic development. This has marked a fundamental shift in the field of development economics. While the

link between financial development and economic growth is unmistakably positive, the specific factors that influence financial development and the strategies for building robust financial markets remain areas of ongoing exploration.

In the realm of research, there has been a growing emphasis on understanding the various factors that affect financial development. Scholars such as Cherif and Dreger (2016), Ibrahim and Sare (2018), and Asratie (2021) have delved into this domain. Simultaneously, researchers have examined the isolated effects of external financing factors, including ODA, FDI, and remittances, on financial development. Notable among these studies are the works conducted by Abdalmajeed and Oudat (2019), Majeed *et al.* (2021), and Tran and Huynh (2022). These researchers have employed a range of quantitative techniques, including feasible generalized least squares and augmented mean group techniques. Their collective findings have revealed critical insights. It was observed that FDI, trade openness, government consumption, and inflation hold statistically significant relationships with financial development. Notably, FDI, trade openness, and government consumption have exhibited positive impacts on financial development in regions such as Asia, Europe, and Latin America, whereas in Africa, these factors showed a negative influence. Additionally, inflation emerged as a consistent deterrent to financial development across all continents.

Further analysis, through causality testing, has unveiled intricate relationships. In Asia and Europe, a two-way causality relationship has been established among FDI, trade openness, and financial development. Conversely, in Latin America, a unidirectional relationship exists between FDI and financial development. Income-wise distinctions have also surfaced in the research findings. Notably, low- and middle-income countries tend to attract more FDI than their high-income counterparts, primarily due to favorable factor cost dynamics. This underscores the nuanced interplay between income levels and FDI attraction.

Keho (2020) and Azizi (2020), along with other researchers, conducted comprehensive studies to investigate the impact of remittances on financial development in selected developing countries. Their studies covered the period from 1980 to 2017 and employed a range of statistical methods, including common correlated effects mean group (CCEMG), fixed effect models, and instrumental variables estimators. The collective findings from these investigations yielded significant insights. It was observed that remittance inflows had a negative effect on domestic credit to the private sector, while concurrently contributing to the expansion of the money supply over the long run. However, it is essential to note that alternative research conducted by Kumar, Stauvermann, Patel, and Prasad (2017), Fromentin (2017), and Sobiech (2019) reported contrasting effects of remittances on financial

development. These divergent results highlight the complexity of the relationship between remittances and financial development, which necessitates further exploration and nuanced analysis.

Murata (2018) conducted a study to assess the effectiveness of aid directed toward the financial sector in nearly 70 developing countries over the period of 1980 to 2016. The research adopted a cross-country regression framework, and the results indicated a significantly positive impact of aid targeted at the financial sector on financial development. While various studies have explored the individual effects of external financing sources on financial development, limited attention has been given to the collective influence of three major external factors (ODA, FDI, and remittances) on financial development, especially in the context of West African countries. To the best of our knowledge, there have been only two studies in this particular area, one conducted by Kregel (2004) and the other by Huq and Tribe (2018).

Kregel (2004) delved into external financing for development and international financial instability in developing countries, drawing on the financial fragility theory associated with the works of Minsky and Domar. This study concluded that external capital flows are a double-edged sword in the context of development policy. Effective management is required to harness their positive benefits, resulting in higher per capita income growth rates and a more efficient allocation of global financial resources to support overall global growth.

In addition, Huq and Tribe (2018) examined external financing flows and debt relief in Ghana spanning the years 1960 to 2015 through descriptive analysis. The analysis revealed a consistent upward trend in the three external financing factors (ODA, FDI, and remittances) over the period. Notably, FDI as a percentage of GDP experienced a substantial increase since the mid-1980s, reaching 8.43% in 2015, a stark contrast to the minimal 0.12% recorded in 1985. The study also noted that Ghana had received favorable treatment in terms of debt relief, benefiting from the highly indebted poor country (HIPC) initiative. However, concerns arose as it appeared that Ghana was accumulating debt once again, prompting questions about the commitment of policymakers to achieve macroeconomic stability. Regarding remittances, the study was unable to draw definitive conclusions due to data limitations, although the available figures indicated relatively low remittance levels as a percentage of GDP.

Based on the literature reviewed so far, the majority of the studies concentrated on assessing the individual impacts of ODA, FDI, and remittances on either economic growth or financial development. However, there are limited studies that explore the

collective effects of the major external financing factors or the combined effects of two sources simultaneously on financial development, especially in the ECOWAS sub-region. This suggests a limited body of studies on the joint contributions of external financing factors to the development of the financial sector in a sub-region like ECOWAS, with the exception of a study by Zardoub and Shoubi (2023), which focused on the influence of FDI, remittances, and ODA on economic growth in developing nations. Moreover, many of these existing studies relied on static or micro-dynamic analyses despite their limitations. Consequently, this study addresses these gaps and contributes to the current body of knowledge by rigorously examining the precise impact of external financing on financial development within the context of ECOWAS countries.

3.0   Methodology

This study was built on the 'demand-following' hypothesis, a concept suggesting that real-sector economic growth is the primary driver of financial development. This perspective contends that improvements in the financial system are essentially a reactive response to a burgeoning economy. Advocates of this viewpoint, such as Robinson (1952), argue that as the economy grows, there is an increasing demand for financial services, thus leading to the advancement of financial institutions. As a result, a robust connection between financial expansion and economic growth becomes evident. Additionally, alongside the economic activities aimed at catalyzing financial development, external financing can also play a pivotal role in stimulating financial sector activity, a concept underscored by the Two Gap model as articulated by Harrod and Domar (1997).

In pursuit of our research objectives, we employed a panel regression model to examine the impacts of external financing factors on financial development. The theoretical foundations of the 'demand-following' hypothesis and the Two Gap model, as previously elucidated, provide a framework that underscores the inherent interconnection between economic growth, external financing, and financial development. Accordingly, in this study, we adapted Equation (1) from David (2022) to formulate an econometric model for analyzing the influence of external financing factors on the financial development of West African nations.

$$FDV_{it} = \alpha_0 + \alpha_1 EXF_{it} + \alpha_2 X_{it} + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..(1)$$

where FDV represents financial development, EXF represents external financing, X represents the control variables (such as economic growth and inflation rate), α_0 is the constant parameter, α_1- α_n are the slope parameters, and the coefficients of each explanatory variable, ε is the disturbance term, i is for the countries and t is the period.

It is anticipated that the coefficients of all explanatory variables will have a positive sign, reflecting a positive relationship with financial development.

Financial development is frequently assessed using indicators like financial depth – the stock of private credit and market capitalization relative to GDP. This predominantly captures the quantitative dimension of financial development. However, this study took a more comprehensive approach by employing a composite index of financial development comprising multiple financial development components and indicators. External financing was represented by a composite index of external financing factors (ODA, FDI, and remittances) derived through principal component analysis (PCA). Economic growth was proxied by GDP per capita, while the inflation rate was measured by the consumer price index.

For our analysis, we selected the panel autoregressive distributed lag (Panel ARDL) model as the statistical technique. This choice is underpinned by several merits, including its ability to handle time series data of varying orders, its applicability to both small and large sample sizes, and its capacity to address endogeneity issues by selecting appropriate lags for both regressors and the dependent variable. This model has previously been employed in related studies, as seen in the works of Pesaran, Shin, and Smith (2001) and Kutu and Ngalawa (2016). The general equation for the Panel ARDL model is outlined as follows:

$$\Delta y_{it} = \theta_i [y_{i,t-1} - \lambda_i^{'} X_{i,t}] + \sum_{j=1}^{p=1} \xi_{ij} \Delta_{i,} y_{i,t-j} + \sum_{j=0}^{q-1} \beta_{ij}^1 \Delta X_{i,t-j} + \varphi_i + e_{it} \ \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(2)$$

where $\theta_i = -(1-\delta_i)$, group-specific speed of adjustment coefficient (expected that $\theta_i < 0$), $\lambda_i^{'}$ = vector of long-run relationship, $ECT = [y_{i,t-1} - \lambda_i^{'} X_{i,t}]$, the error correction term, ξ_{ij}, β_{ij}^1 are the short-run dynamic coefficients. In this study, the PARDL is based on the following error-correction model:

$$\Delta FDV_{it} = \theta_0 + \lambda_1 X_{it-1} + \sum_{j=0}^{p} \beta_{1ij} \Delta FVD_{it-1} + \sum_{j=0}^{p} \beta_{2ij} \Delta EXF_{it-1} + \sum_{j=0}^{p} \beta_{3ij} \Delta ECG_{it-1} + \sum_{j=0}^{p} \beta_{4ij} \Delta INF_{it-1} +$$

$$\varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3)$$

where $X_{it-1} = (FDV_{it-1} - \lambda_1 EXF_{it} - \lambda_2 ECG_{it} - \lambda_3 INF_{it})$.

We employed a combination of variants of panel autoregressive distributed lag (PARDL) methodologies, namely the pooled mean group (PMG), mean group (MG), and dynamic fixed effect (DFE). While it is anticipated that short-term country-specific variations exist due to local regulations, long-term homogeneity is assumed. Consequently, the PMG estimator is deemed more effective in comparison to the MG and DFE estimators, as suggested by Blackburne and Frank (2007). To determine the

most appropriate method, we employed the Hausman test to assess the significance of distinctions between the PMG and MG, or PMG and DFE estimations. The null hypothesis of the Hausman test is that 'the PMG is preferable to its MG and DFE counterparts,' and the decision is that if the null hypothesis is accepted (at most 10 percent significant value of probability), signifying no substantial differences, the PMG estimator is selected due to its efficiency. Conversely, if the null hypothesis is rejected, an alternative estimator is chosen. All other definitions and terms used in Equations 1 and 2 remain consistent.

This study relied on a dataset sourced from sixteen member countries of the Economic Community of West African States (ECOWAS). These countries include Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo. The analysis was conducted using a panel regression approach based on the outcomes of unit root and cointegration tests. The unit root test was employed to assess stationarity, while the cointegration test was used to explore the presence of long-term relationships among the variables under investigation. The study's timeframe spans from 1980 to 2021, a period selected due to the significant financial transformations experienced by African nations during this time. Furthermore, this period encompasses post-conflict or crisis recovery phases following events like civil wars or political crises. It is notable that West African countries often receive substantial external financing inflows from the international community aimed at supporting post-conflict recovery, peace-building, and reconstruction efforts. This study extends the temporal scope compared to previous research on this topic. The data sources utilized in this analysis comprise information from the International Monetary Fund's Financial Access Survey (FAS) and the World Bank's World Development Indicator (WDI).

4.0   Presentation and Discussion of Empirical Results

Table 1 offers a succinct overview of the panel series variables. The top segment of the table presents essential statistics such as the mean, maximum, minimum, and standard deviation. The first column outlines these statistical indicators, while the subsequent columns, from the second to the seventh, correspond to the following variables: financial development (FDV), economic growth (ECG), inflation rate (INF), and external financing factors, encompassing Foreign Direct Investment (FDI), Official Development Assistance (ODA), and remittances (REM).

Table 1: *The Descriptive and Correlation Analyses*

Variables	FDV	ECG	INF	FDI	ODA	REM
Mean	0.108	967.432	5.697	4.155	14.526	4.162
Median	0.100	708.675	4.907	1.569	10.908	2.362
Maximum	0.270	3318.933	122.875	103.337	192.026	31.503

Minimum	0.007	310.473	-494.733	-82.892	0.056	0.002
Std. Dev.	0.046	598.337	48.249	11.399	15.976	4.942
Correlation matrix						
FDV	1.000 -----					
ECG	0.663 (0.000)	1.000 -----				
INF	-0.193 (0.000)	-0.076 (0.050)	1.000 -----			
FDI	0.112 (0.004)	0.003 (0.945)	-0.046 (0.232)	1.000 -----		
ODA	-0.164 (0.000)	-0.247 (0.000)	0.084 (0.029)	0.243 (0.000)	1.000 -----	
REM	0.294 (0.000)	0.037 (0.332)	-0.208 (0.000)	0.291 (0.000)	0.234 (0.000)	1.000 -----

Source: Authors' Computation (2023).

The upper part of Table 1 presents key statistical findings for the variables under consideration. Financial development (**FDV**) exhibits a mean value of 0.108, median of 0.100, maximum of 0.270, minimum of 0.007, and standard deviation of 0.045. These statistics suggest relatively insignificant variation in financial development across ECOWAS countries. On the other hand, economic growth (**ECG**) displays a mean value of \$967.4, median of \$708.7, maximum of \$3,318.9, minimum of \$598.3, and a standard deviation of \$598.3, signifying notable variation in GDP per capita across these countries.

Likewise, the mean, median, maximum, minimum, and standard deviation for inflation rate (**INF**) are as follows: 5.7, 4.9, 122.9, -4.494.7, and 48.2 respectively. It is worth noting that external financing factors, namely FDI and ODA (excluding remittances), also exhibit substantial standard deviations of 11.4 and 15.9 percent, accompanied by mean values of 4.2 and 14.5 percent, as well as maximum values of 103.3 and 192.0 percent, respectively, indicating a wide range of values for these variables. Remittances, in contrast, demonstrate mean, maximum, and standard deviation values of 4.2 percent, 31.5 percent, and 4.9, respectively.

The lower section of Table 1 presents correlation results among the variables. FDV and ECG display positive correlations with all the variables (except for INF and ODA, which exhibit negative correlations). INF, on the other hand, demonstrates negative relationships with FDI and REM but is positively correlated with ODA. Notably, a positive correlation is observed among external financing factors, specifically FDI, ODA, and REM. Importantly, none of the correlation coefficients among the explanatory variables exceeds 0.8. This suggests the absence of substantial multicollinearity concerns within the model, reaffirming its reliability, in line with Asteriou and Hall (2016).

4.1   *Unit Root and Cointegration Tests*

The unit root test, as presented in Table 2, follows a panel unit root testing approach. This test was conducted to assess the stationarity of each variable employed in the model. The aim was to prevent potential issues of spurious regression results that may arise from using the panel ordinary least squares (POLS) method with non-stationary series. The outcomes of the unit root tests indicate that the variables inflation rate - INF, foreign direct investment - FDI, and official development assistance - ODA exhibit stationarity in their level form, while financial development - FDV, economic growth - ECG, and remittances - REM are stationary only when considered in their first difference form.

Table 3: *Panel Unit Roots Test Results*

Series	Stationary	PP- Fisher	ADF- Fisher	LLC	Breitung	IPS
FDV	Level	44.342*	35.973	-0.682	0.786	-0.042
		(0.072)	(0.288)	(0.248)	(0.784)	(0.483)
	First Difference	1184.80***	251.272***	-11.777***	-9.124***	-15.317***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ECG	Level	31.057	20.455	-0.229	3.636	1.679
		(0.514)	(0.943)	(0.410)	(0.999)	(0.954)
	First Difference	388.198***	198.085***	-11.655***	-6.152***	-6.152***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INF	Level	186.117***	105.597***	-1.611***	-11.913	-4.398***
		(0.000)	(0.000)	(0.054)	(0.000)	(0.000)
	First Difference	-	-	-	-	-
FDI	Level	170.701***	103.856***	-5.765***	-5.086***	-6.399***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	First Difference	-	-	-	-	-
ODA	Level	91.084***	74.809***	-3.389***	-4.765***	-4.260***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	First Difference	-	-	-	-	-
REM	Level	60.399***	39.453	0.046	-1.496*	-1.221
		(0.003)	(0.171)	(0.518)	(0.067)	(0.111)
	First Difference	897.792***	260.241***	-11.561***	-10.927***	-15.444***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Source: Authors' Computation (2023)*. Notes: PP-Fisher, ADF–Fisher, Levin-Lin-Chu (LLC), Breitung and Im-Pesaran-Shin (IPS), (Null: Panels contain unit roots). Values in the parentheses ( ) are the p-values of the test statistic, *, **, and *** indicate rejection of the null hypothesis at 10, 5, and 1% significance levels.*

Consequently, it is apparent that the series involves diverse orders. In light of this, the study employs the panel Kao Engle-Granger cointegration test, following the model specifications tailored for cointegration tests that pertain to the long-term equilibrium within the model. The empirical findings, as depicted in Table 3, substantiate the existence of a long-run equilibrium among financial development, economic growth, inflation, and external financing factors, which encompass FDI, ODA, and remittances, within the ECOWAS countries. This observation underscores that the collective panel series comprising these variables indeed demonstrates long-run relationships.

Table 3: *Panel Kao Engle-Granger Cointegration Test Results*

Test	t-statistic	p-value
Financial development model	-2.350***	0.009

Source: Authors' Computation (2023). *Notes: *** indicates rejection of the null hypothesis at a 1% significance level.*

4.2 Presentation and Discussion of the Regression Results

In line with the research objectives, which encompass assessing the impact of external financing on financial development in West Africa, we conducted a comprehensive examination of various panel ARDL variants. After careful consideration of the conducted tests, the panel ARDL variants, (mean group - MG, dynamic fixed effect - DFE, and pooled mean group - PMG), were found to be the most appropriate methods for estimating and analyzing the model. Consequently, Tables 4 and 5 present both the aggregate and disaggregate estimations for MG, DFE, and PMG, respectively.

The selection between the MG, DFE, and PMG variants of the panel ARDL is determined by the outcomes of the Hausman test. In Table 4, the Hausman test results exhibit statistic values of 6.17 (with a p-value of 0.289) and 0.94 (with a p-value of 0.617). These results lead to the acceptance of the null hypothesis, indicating that the PMG estimation is preferred to DFE and MG. The null hypothesis for the Hausman test posits that "the PMG is more appropriate than DFE and MG" for making estimates regarding external financing and financial development.

Similarly, Table 5 displays the Hausman test results for the selection between MG, DFE, and PMG, with statistic values of 2.65 (with a p-value of 0.753) and 66.62 (with a p-value of 0.000). In this case, the null hypothesis is accepted when choosing between MG and PMG (as the Hausman test statistic is insignificant), but rejected when deciding between DFE and PMG (as the Hausman test statistic is significant). Consequently, the DFE estimate is deemed the most appropriate choice for making estimates regarding external financing factors and financial development.

Table 4: *Estimates for Financial Development and Aggregate External Financing*

Variables	(MG)	(DFE)	(PMG)
		Short-run estimates	
ECT	-0.381***	-0.129***	-0.260***
	[-7.45]	[-6.45]	[-6.81]
	(0.000)	(0.000)	(0.000)
ΔECG	0.164	0.092	0.209*
	[0.94]	[0.82]	[1.70]
	(0.350)	(0.413)	(0.089)
ΔINF	-0.001	-0.001***	0.002
	[-0.05]	[-3.39]	[0.40]
	(0.963)	(0.001)	(0.690)

ΔEXF	0.032	0.020	0.033*
	[0.91]	[1.31]	[1.75]
	(0.362)	(0.189)	(0.079)
Constant	-1.002***	-0.299***	-0.593***
	[-3.67]	[-3.90]	(0.000)
	(0.000)	(0.000)	
Long-run estimates			
ECG	0.950**	0.480***	0.429***
	[2.46]	[2.71]	[6.91]
	(0.014)	(0.007)	(0.000)
INF	-0.005**	-0.002***	-0.001***
	[-1.99]	[-3.35]	[-5.02]
	(0.046)	(0.001)	(0.000)
EXF	-0.140	-0.064	0.061*
	[-0.73]	[-0.69]	[1.98]
	(0.468)	(0.492)	(0.053)
Observations	649	649	649
Number of groups	16	16	
	6.17	0.94	
Hausman test	(0.289)	(0.617)	

Source: Authors' computation (2023). *Note: FDV is financial development, EXF is aggregate external financing, ECG is economic growth, INF is the inflation rate, and *, ** and *** indicate rejection of the null hypothesis at 10, 5, and 1% significance levels.*

Table 5: *Estimates for Financial Development and External Financing Factors*

Variables	(MG)	(DFE)	(PMG)
Short-run estimates			
ECT	-0.444***	-0.150***	-0.258***
	[-11.53]	[-7.06]	[-6.65]
	(0.000)	(0.000)	(0.000)
ΔECG	0.188	-0.001	0.194
	[0.96]	[-0.01]	[1.50]
	(0.340)	(0.994)	(0.133)
ΔINF	0.002	-0.001***	0.001
	[0.30]	[-3.09]	[0.09]
	(0.766)	(0.002)	(0.926)
ΔFDI	0.002*	0.001	0.002*
	[1.76]	[0.04]	[1.68]
	(0.078)	(0.965)	(0.093)
ΔODA	0.024	0.005	0.023
	[0.85]	[0.04]	[1.43]
	(0.395)	(0.739)	(0.151)
ΔREM	0.028	0.019**	0.030
	[1.38]	[2.14]	[1.08]
	(0.168)	(0.032)	(0.282)
Constant	-1.242**	-0.227***	-0.442***
	[-2.47]	[-2.84]	[-6.62]
	(0.014)	(0.005)	(0.000)
Long-run estimates			

ECG	0.728*	0.225	0.263***
	[1.87]	[1.40]	[3.70]
	(0.061)	(0.163)	(0.000)
INF	-0.002***	-0.001***	-0.002***
	[-2.70]	[-3.07]	[-4.64]
	(0.007)	(0.002)	(0.000)
FDI	0.002	0.003	0.001
	[0.27]	[1.35]	[0.78]
	(0.786)	(0.177)	(0.433)
ODA	-0.043	-0.161**	-0.018
	[-0.49]	[-2.40]	[-0.75]
	(0.692)	(0.016)	(0.453)
REM	0.072	0.090***	0.035***
	[0.82]	[3.19]	[3.38]
	(0.414)	(0.001)	(0.001)
Observations	656	656	656
Number of groups	16	16	
	2.65	66.62	
Hausman test	(0.753)	(0.000)	

Source: Authors' Computation (2023). *Note: FDV is financial development, ECG is economic growth, INF is the inflation rate, FDI is foreign direct investment, ODA is official development assistance and REM is remittances, and *, ** and *** indicate rejection of the null hypothesis at 10, 5 and 1% significance level.*

Based on the PMG results in Table 4, the upper section of the table shows the short-run estimations, shedding light on the relationship between financial development and the explanatory variables in the context of West Africa. The result shows that the coefficients of economic growth and external financing are both positive and statistically significant, while the coefficient of the inflation rate is negative but statistically insignificant. This implies that economic growth and external financing have a positive influence on financial development in West Africa in the short-run. As indicated by their coefficients, a one-unit increase in economic growth and external financing corresponds to a 0.209 and 0.033 percent rise in financial development respectively in the short run. These positive effects of economic growth and external financing align with the *a priori* expectations posited by economic theories, and findings from the previous studies, including those reported by Abdalmajeed and Oudat (2019), Majeed *et al.* (2021), and Tran and Huynh (2022), among others.

Furthermore, the short-run estimates encompass an error correction term (ECT) in addition to the explanatory variables, which capture the short-run dynamics of the relationship between financial development and the explanatory variables. The ECT demonstrates a negative coefficient, indicating a propensity for financial development to revert to its long-run equilibrium level in the short run. Importantly, this effect is statistically significant at the 1% level, with a p-value of 0.000.

The long-run estimates are contained in the lower section of Table 4. These estimates outline the relationship between financial development and the explanatory variables in West Africa. These estimates indicate that the coefficients for economic growth and external financing are both positive and statistically significant, while the coefficient of inflation is negative and statistically significant. This implies that both economic growth and external financing have a positive impact on financial development in the long-run, while the inflation rate has a negative impact on financial development in the long run. That is, a one-unit increase in economic growth and external financing is associated with a 0.429 and 0.061 percent increase in financial development. Conversely, a one-unit decrease in the inflation rate corresponds to a 0.001 percent increase in financial development over the long run in West Africa. These observed outcomes, with the inflation rate having a negative effect, and economic growth and external financing having positive effects, align with the *a priori* expectations derived from economic theories, and are also consistent with findings from previous studies, including those reported by Tsaurai (2018), Olayungbo and Quadri (2019), and Gniniguè and Ali (2022), among others.

Based on the DFE results presented in Table 5, the upper section of the table provides insights into short-run estimations of financial development and the explanatory variables in West Africa. The result shows that only the coefficients of inflation and remittances are statistically significant. While the coefficient of remittances is positive, the coefficient of inflation is negative. Conversely, economic growth, FDI, and ODA are statistically insignificant in the short run. This signifies that remittances have a positive impact on financial development in West Africa in the short run, while the inflation rate has a negative effect. Specifically, as indicated by their coefficients, a percentage increase in remittances corresponds to a 0.019 percent rise in financial development in West Africa in the short run, while a percentage decrease in the inflation rate leads to a 0.001 percent increase in financial development.

These observed effects, with remittances having a positive impact and inflation having a negative impact, align with the *a priori* expectations, and findings from prior studies, including those reported by Keho (2020), Azizi (2020), and Tran and Huynh (2022), among others. Moreover, the error correction term (ECT) value suggests a propensity for financial development to return to its long-run equilibrium level in the short run. This effect is statistically significant at the 1% level, with a p-value of 0.000.

The long-run estimates presented in Table 5 further reveal specific patterns. Within these long-run estimates, it becomes evident that only the coefficient of remittances is positive and statistically significant, while the coefficients of inflation and ODA are both negative and statistically significant. This highlights that remittances

exert a positive impact on financial development in West Africa, while the inflation rate and ODA have negative impacts on financial development in the long-run. Expressed in terms of their coefficients, a one-percent increase in remittances corresponds to a 0.090 percent increase in financial development in West Africa in the long-run. Conversely, a one-percent decrease in the inflation rate and ODA leads to increases in financial development by 0.001 and 0.161 percent, respectively, in West Africa in the long-run.

These observed effects, with remittances having a positive impact and inflation having a negative impact, align with the *a priori* expectations, and findings from some of the previous studies, including those reported by Keho (2020), Azizi (2020), and Gniniguè and Ali (2022), among others. However, it is worth noting that the observed effect of ODA contradicts the *a priori* expectations but aligns with findings from studies such as those reported by Siraj (2012), Eregha & Oziegbe (2016), and Nguyen, Huynh, Reisach & Kim (2022). This may be attributed to factors like concerns regarding debt sustainability, high levels of corruption, dependency, and the aid trap, among others, which can at times distort the effectiveness of aid in recipient countries.

5.0 Conclusion and Policy Recommendations

The overarching findings from the PMG results suggest that financial development in West Africa is positively influenced by overall external financing and economic growth, both in the long and short run. However, inflation is found to have a negative impact, but this is primarily observed in the long run. Furthermore, the dynamic fixed effect (DFE) analysis was employed to explore the relationship between individual external financing factors (FDI, ODA, and remittances) and financial development. The analysis yields evidence indicating that financial development in West Africa is positively impacted by remittances, both in the long and short run. Conversely, inflation also exerts a negative influence on financial development, observed in both the long and short run. However, ODA demonstrates a negative impact, predominantly affecting financial development in the long run. In contrast, FDI is found to have no significant impact, neither in the short run nor in the long run.

Based on the empirical findings derived from this study, it is concluded that external financing as a whole has a positive impact on financial development in West Africa. Specifically, remittances exhibit a positive influence on financial development, both in the short and long run. On the other hand, official development assistance (ODA) has a detrimental effect on financial development, primarily in the long run, and foreign direct investment (FDI) does not significantly influence financial development, neither in the short term nor the long term. Furthermore, economic growth exerts a positive impact on financial development, both in the short and long

run, while the inflation rate exerts a negative influence on financial development in both periods. The short-run estimates reveal the presence of a negative and statistically significant error correction term (ECT), indicating that financial development tends to revert back to its long-run equilibrium level in the short run.

Based on the empirical outcomes derived from this study, recommendations are made to enhance financial development in West Africa, taking into account the different impacts of external financing factors and economic factors:

i.   Recognizing the positive impact of remittances on financial development, policymakers should encourage and facilitate the inflow of remittances to the region. This can be achieved through measures such as reducing remittance transfer costs and providing financial education to remittance-receiving households. However, it is crucial to monitor the potential overreliance on remittances to prevent vulnerability to external shocks. Given the observed long-term detrimental effect of official development assistance (ODA), governments and organizations providing ODA should work together to ensure that assistance is used to promote self-sufficiency and long-term financial stability. This could involve shifting the focus of aid towards capacity building and fostering local ownership of development projects.

ii.   While the study indicates that foreign direct investment (FDI) did not influence financial development in either the short- or long-run, it is important for West African nations to focus on attracting quality FDI that aligns with the region's developmental goals. This can be achieved by creating a business-friendly environment, ensuring legal and regulatory stability, and promoting sectors with the potential for economic growth. Recognizing the positive impact of economic growth on financial development, governments should prioritize policies that stimulate sustainable economic growth. These policies could include investing in infrastructure, education, and technology, as well as promoting entrepreneurship and innovation to create a conducive environment for businesses to thrive.

iii.   Given the observed negative impact of inflation on financial development, central banks and policymakers should maintain price stability and implement prudent monetary policies to control inflation. This can be achieved through proper management of money supply, transparent communication, and effective regulation of financial markets. The observation that financial development tends to revert to its long-run

equilibrium in the short run underscores the importance of both short-term and long-term planning. Policymakers should therefore focus on measures that balance immediate economic stability with the pursuit of sustainable long-term financial development.

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