Revue Française d'Économie et de Gestion
ISSN : 2728- 0128
Volume 7 : Numéro 11

Capital Markets and Macroeconomic Performance: The Case of WAEMU

Marché des capitaux et performance macroéconomique : le cas de l'UEMOA

DIOUF Cheikh Papa Touty
Ensignant-chercheur (Docteur en Economie – spécialité Ingénieurie Financière)
University Cheikh Anta Diop of Dakar (UCAD) - Sénégal
Laboratory of Finance for Development (LAFIDEV)

Date de soumission : 16/09/2026

Date d'acceptation : 29/10/2026

Pour citer cet article :

DIOUF. C.P.T. (2026) « Capital Markets and Macroeconomic Performance : The Case of WAEMU », Revue Française d'Economie et de Gestion « Volume 7 : Numéro 11 » pp : 1184- 1218.

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Abstract

Capital markets constitute a key instrument for financing governments and mobilizing the resources required to support economic activity. This study examines the relationship between capital market development and macroeconomic performance in the countries of the West African Economic and Monetary Union (WAEMU). More specifically, it investigates the impact of government securities issuance on macroeconomic performance and the role of the latter in the development of the government securities market. The analysis is based on a Panel Vector Autoregression (PVAR) model applied to the eight WAEMU countries over the period 2005–2020. The results reveal a bidirectional relationship between capital markets and macroeconomic performance. Government securities issuance has a positive effect on macroeconomic performance. In turn, improvements in macroeconomic performance contribute to the development of the government securities market. These findings highlight the importance of sustainable resource mobilization through capital markets and underscore the need for sound public debt management to support macroeconomic stability and economic development.

Keywords: capital markets; government securities markets; economic growth; PVAR; WAEMU.

Résumé

Le marché des capitaux constitue un levier essentiel du financement des États et de la mobilisation des ressources nécessaires au soutien de l'activité économique. Cette étude analyse la relation entre le développement du marché des capitaux et la performance macroéconomique dans les pays de l'Union économique et monétaire ouest-africaine (UEMOA). Elle examine plus particulièrement l'incidence des émissions de titres publics sur la performance macroéconomique et le rôle de cette dernière dans le développement du marché des titres publics. L'analyse repose sur un modèle vectoriel autorégressif en panel (PVAR), appliqué aux huit pays de l'UEMOA sur la période 2005-2020. Les résultats mettent en évidence une relation bidirectionnelle entre le marché des capitaux et la performance macroéconomique. Les émissions de titres publics exercent un effet positif sur la performance macroéconomique. En retour, l'amélioration de celle-ci favorise le développement du marché des titres publics. Ces résultats soulignent l'importance d'une mobilisation soutenable des ressources sur le marché des capitaux.

Mots clés: marché des capitaux ; marché des titres publics ; croissance économique ; PVAR ; UEMOA.

Introduction

For several years, developing economies have faced increasingly severe financing constraints, exacerbated by successive health, economic, and geopolitical crises. These constraints have resulted in growing government financing needs and, consequently, a significant increase in public debt. In this context, mobilizing domestic resources through capital markets has become a major economic policy issue. Public borrowing enables governments to finance expenditure and investment when budgetary revenues and external resources are insufficient to meet their financing needs (Montanti, 2023; Ouguehi & Sebagui, 2024). However, the accumulation of public debt also raises concerns regarding its cost, sustainability, and potential effects on other components of the economy.

This issue is particularly important in the countries of the West African Economic and Monetary Union (WAEMU), where the development of capital markets has been accompanied by a significant expansion of government financing through the issuance of public securities. The establishment of UMOA-Titres in 2013 contributed to strengthening the organization and deepening of the regional government securities market, complementing the role played by the Central Bank of West African States (BCEAO). Member states therefore have access to various financing instruments, notably Treasury Bills (BATs) and Treasury Bonds (OATs), issued mainly through auctions or syndicated offerings. This development reflects a gradual transformation of the financing mechanisms available to the Union's economies and an increasing reliance on regional capital markets.

The growing importance of this market is particularly illustrated by the evolution of debt outstanding on the regional market. It reached CFAF 10,893.5 billion in 2019, representing approximately 13.9% of the Union's GDP (UMOA-Titres, 2022). Issuance activity has also expanded considerably in recent years. In 2023, resources raised by governments through auctions amounted to CFAF 284.8 billion, of which 79.4% consisted of short-term instruments and 20.6% of medium- and long-term instruments. At the same time, syndicated issuances increased, reaching CFAF 366.9 billion in March 2023, compared with CFAF 150 billion in the previous month (UMOA-Titres, 2023). These developments highlight the growing role of capital markets in meeting governments' financing needs within the Union.

This financial expansion has taken place in a macroeconomic environment characterized by relatively sustained economic growth but also by significant financial pressures. Following the slowdown caused by the COVID-19 pandemic, the WAEMU growth rate reached 6.0% in 2021, compared with 1.8% in 2020 and 5.8% in 2019 (BCEAO, 2022). However, the increase in

government financing needs has been accompanied by a rise in market financing costs. In March 2023, the weighted average rate on short-term instruments reached 5.85%, compared with 3.99% in the previous month. The weighted average yield on bonds issued through syndicated offerings stood at 6.06%, following an increase of 31 basis points. These developments reflect, among other factors, market pressures and the successive increases in policy rates implemented during 2022 and 2023 (UMOA-Titres, 2023). Consequently, the increasing reliance on capital markets cannot be examined independently of the cost of financing and its potential repercussions on economic activity.

Beyond their role in financing governments, capital markets constitute an essential mechanism for resource allocation within an economy. In WAEMU, they comprise several market segments and institutions, including the government securities market and the regional financial market, under the supervision of the relevant regulatory authorities. These markets bring together governments, private firms, financial institutions, institutional investors, and individual investors. The primary market enables the mobilization of new resources through the issuance of securities, while the secondary market contributes to their liquidity and price discovery. This institutional architecture is therefore intended to promote savings mobilization, capital allocation, and the financing of economic activities. Consequently, capital market development may affect macroeconomic performance through several channels, including the financing of public expenditure, investment, private-sector credit, and financial conditions.

However, the relationship between capital market development and macroeconomic performance remains theoretically and empirically ambiguous. Part of the literature argues that financial deepening promotes economic growth by improving resource allocation, facilitating investment financing, and alleviating certain financing constraints (Cabrillac & Rocher, 2009; Sy, 2010; Bouis, 2019). Conversely, other studies emphasize that rising public debt and increased reliance on market-based financing may have less favorable effects on economic activity, particularly when debt-servicing costs increase or when public-sector financing competes with private-sector financing (Artus, 2022; Blanchard, 2022; Ragot, 2022; Dieng & Sène, 2024).

This issue is also closely related to the debate over the effects of public debt on private-sector financing. Some studies highlight a potential crowding-out effect, whereby increased public borrowing may reduce the resources available to the private sector and exert upward pressure on interest rates (De Bonis & Stacchini, 2013; Becker & Ivashina, 2018; Gennaioli et al., 2018). Other studies, by contrast, identify a crowding-in effect, whereby the development of the

government debt market improves financial market liquidity, depth, and functioning, thereby generating favorable effects on private financing (Majumder, 2007; Thilanka & Ranjith, 2018). Thus, the effect of capital market development on macroeconomic performance cannot be regarded as unidirectional or unequivocal.

The institutional dimension is also an important component of this relationship. Institutional quality affects the functioning of financial markets, the credibility of public policies, and the efficiency of resource allocation. Several studies show that institutions can alter the strength and nature of the relationship between financial development and economic performance (Beji & Youssef, 2010; Kim et al., 2010; Cezar, 2012). In the context of WAEMU, which is characterized by increasing monetary and financial integration, accounting for this dimension is therefore essential to better understand the mechanisms through which capital market development interacts with macroeconomic performance.

Despite the growing interest in these issues, the literature on the relationship between capital markets and macroeconomic performance remains largely focused on developed economies and relatively deep financial markets. WAEMU economies, however, exhibit specific institutional and financial characteristics, including a strong involvement of governments in financing through public securities, relatively shallow financial markets, and a distinctive regional monetary integration framework. In this context, findings derived from developed economies cannot be directly extrapolated to WAEMU. There is therefore an empirical gap regarding the analysis of the dynamic interactions between capital market development and macroeconomic performance within this monetary union.

Against this background, the central research question is: to what extent does capital market development affect macroeconomic performance in WAEMU countries, and to what extent can macroeconomic performance, in turn, foster capital market development? This question requires the relationship between the two variables to be considered not only in terms of the potential effect of capital market development on macroeconomic performance, but also in terms of possible feedback effects from macroeconomic performance to capital market development.

The objective of this article is therefore to analyze the dynamic relationship between capital market development and macroeconomic performance in WAEMU countries. More specifically, the study examines the effect of public securities issuance on macroeconomic performance and investigates whether a two-way causal relationship exists between the two

variables. It also seeks to assess the dynamics through which shocks are transmitted across the main variables of the economic system.

Methodologically, the study employs a panel vector autoregressive (PVAR) model, following the approach proposed by Love and Zicchino (2006) and further developed by Abrigo and Love (2016). This methodology is particularly relevant in the present context because it simultaneously accounts for the time and cross-sectional dimensions of the panel while allowing for the potential endogeneity of the variables. It also makes it possible to examine dynamic interactions among variables and to assess the effects of shocks through impulse response functions and variance decompositions. The approach therefore goes beyond a simple analysis of associations between variables by examining their temporal dynamics and potential feedback mechanisms.

The study contributes to the literature in three main respects. First, it provides empirical evidence on a relationship that remains relatively underexplored in the WAEMU context. Second, it examines capital market development and macroeconomic performance from a dynamic perspective, taking into account their potential interdependence. Third, it provides evidence that may inform economic policies concerning government financing, capital market deepening, and macroeconomic stability within an integrated monetary area. The findings may, in particular, contribute to the debate on the conditions under which greater reliance on regional capital markets can support macroeconomic performance without undermining private-sector financing conditions or public debt sustainability.

The remainder of the article is organized as follows. The first section presents the theoretical and empirical literature on the relationship between capital market development and macroeconomic performance. The second section describes the methodology, model specification, and variables used in the analysis. The third section presents and discusses the empirical results and their main economic policy implications. Finally, the last section concludes the study and provides the main policy recommendations.

1. Literature review

The issue of sovereign debt and the different approaches in economic theory arises in terms of its effects on the real economy. The development of the government securities market facilitates the implementation of countries' fiscal policies. It can be appreciated for the advantages it offers over traditional sources of public deficit financing (Cabrillac and Rocher, 2009). Unlike external financing, the use of the securities market allows governments to control access to resources and avoid the conditions often imposed by creditors or donors, while enabling them

to strengthen public governance in order to protect their creditworthiness. Bonds are undoubtedly a financial commitment and a direct financing instrument between deficit units (the borrower) and surplus units (the lender), broken down into standard units called bond units (Babatundé, 2013; Curto and Marques, 2013; Jimoh, 2023).

In this way, the obligation becomes, at the same time, a significant financial transaction because it is intended for the public. The need to keep pace with the evolution of public spending in line with the trend that has occurred in the role of the state has led to the use of deficit financing instead of the principle of budgetary balance, so that public spending has become one of the most effective tools for state intervention, with multiple forms of intervention in various areas, thus affecting the real sector (Endo, 2022).

Nevertheless, spending constraints are leading the government to seek solutions that contribute to economic development in order to fulfil its obligations and bring its citizens to a level of public welfare. The development of the government securities market has played a key role in the development of the real sector following the observable impact that the financial market has had on corporate finance and the development of economic activities (Babatundé, 2013; Curto and Marques, 2013; Dada, 2014; Dabwor, 2015; Aznita and Jimoh, 2016). For this reason, public borrowing has become one of the most important sources of extraordinary revenue, expressing the guarantee that the state will honour its debt. It is only in exceptional cases and solely for the purpose of mobilising savings that taxation cannot achieve this, even though it is considered a common denominator of state budget resources. Loans, whether internal or external, remain one of the most important financial sources for coping with fluctuations and covering financial deficits resulting from an imbalance between final resources and total expenditure (Aguilar, 2006; Arif, 2007; Arvai and Heenan, 2008; Sy, 2010).

The holding of government securities (BATs and OATs) by banks can be explained by the financial repression that the central government can exert on banks by forcing or encouraging them to subscribe to government securities (Bouis, 2019), but also by the high credit risk of the private sector, which can push banks to seek refuge in safe assets. The purchase of government securities by banks may also result from a decline in demand for credit by the private sector during periods of recession, crisis or war (De Bonis and Stacchini, 2013; Becker and Ivashina, 2018; Gennaioli et al., 2018; Bouis, 2019), resulting in lower government tax revenues and, consequently, increased funding requirements and higher public debt.

Specifically, the financial or indirect crowding-out effect is the fact that an increase in public borrowing can lead to a rise in interest rates, which in turn causes a decline in demand for funds

by the private sector or reduces the volume of private credit (Blanchard, 2019; Artus, 2022). This is because investment financing requires raising funds on the financial market. Significant demand for funds by the public sector can influence interest rates by pushing them up and thereby crowding out the private sector from debt markets due to the increase in the cost of capital. This analysis focuses on the effect of an increase in interest rates caused by public borrowing on private investment via the cost of capital, and assumes a high sensitivity to interest rates (Jareño et al, 2023).

The government securities market, which is often the predominant segment of the overall debt market in many economies, plays a crucial role in the monetary policy transmission mechanism. Thus, regardless of whether the central bank acts as a public debt manager, there are three main channels through which the structure of public debt can influence monetary conditions, namely debt volume, debt composition and debt ownership (Krishnamurthy and Li 2022).

The relationship between the government securities market and economic growth has been the subject of much empirical research.

There are now numerous empirical studies of the link between the public securities market and economic activity, based on cross-sectional, time series or panel data. Their conclusions are relatively consistent in terms of the positive impact of financial development on investment rates, capital productivity and economic growth, although other studies have reported somewhat mixed results (Cabrillac and Rocher, 2009; Sy, 2010; Rachel and Summers, 2015; Blanchard, 2022, Rogé, 2023).

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The work of Ajibola and Maxwell (2017) using the distributed autoregressive lag model (ADRL) approach reveals the presence of a long-term relationship between growth, government bond market performance and the level of overall market uncertainty. The results of the Granger test reveal that both the performance and volatility of the government securities market can lead to economic disruptions. The work of Baldi and Pandimiglio (2022) aims to study the factors that influence the yield rates of green bonds in the public and private sectors, in addition to those conveyed by conventional financial theory.

2. Methodology

This section presents the model specification and the selected variables, followed by the results of the econometric estimations and their analysis and interpretation.

2.1. Model Specification and Variable Description

To determine the effect of capital market development on macroeconomic performance, we use the panel VAR modelling proposed by Abrigo and Love (2016). The use of this approach in examining the interrelationships between different macroeconomic variables has attracted considerable interest from researchers because it is a hybrid methodology between classical panel models and vector autoregressive (VAR) models. The model is estimated using the Generalised Method of Moments (GMM), a widely used econometric estimation technique for estimating the parameters of a statistical model. In the context of the panel VAR model, GMM is used to estimate the parameters.

Panel VAR is similar to large-scale VARs where dynamic and static interdependencies are allowed. In this paper, we consider a homogeneous panel VAR of order p with k variables and panel-specific fixed effects represented by the following system of linear equations:

$$Y_{it} = A_1 Y_{it-1} + A_2 Y_{it-2} + A_3 Y_{it-3} + \ldots A_p Y_{it-p} + \mathrm{B} X_{it} + \mu_{it} + e_{it}$$

i $\in\{1,2,\ldots, N\}$, t $\in\{1,2,\ldots, T_i\}$

Where Y_it is a vector (1* k) of dependent variables, X_it is a vector (1* l) of exogenous covariates, μ_it and e_it are vectors (1* k) of fixed panel effects specific to the dependent variables and idiosyncratic errors, respectively. The (k * k) matrices and the (1* k) matrix B are parameters to be estimated $(k \times k)$ $A1$ $A2$ ……A_(p-1) A_p and the $(l \times k)$ matrix B are parameters to be estimated.

The empirical model is as follows :

$$\begin{bmatrix} 1 & a_{12} & a_{13} & a_{14} & a_{15} & a_{16} & a_{17} & a_{18} \\ a_{21} & 2 & a_{23} & a_{24} & a_{25} & a_{26} & a_{27} & a_{28} \\ a_{31} & a_{32} & 3 & a_{34} & a_{35} & a_{36} & a_{37} & a_{38} \\ a_{41} & a_{42} & a_{43} & 4 & a_{45} & a_{46} & a_{47} & a_{48} \\ a_{51} & a_{52} & a_{53} & a_{54} & 5 & a_{56} & a_{57} & a_{58} \\ a_{61} & a_{61} & a_{63} & a_{64} & a_{65} & 6 & a_{67} & a_{68} \\ a_{71} & a_{72} & a_{73} & a_{74} & a_{75} & a_{76} & 7 & a_{78} \\ a_{81} & a_{82} & a_{83} & a_{84} & a_{85} & a_{86} & a_{87} & 8 \end{bmatrix} < \begin{bmatrix} EMTP_{it} \\ TCPIB_{it} \\ OUV_{it} \\ INV_{it} \\ INF_{it} \\ CSP_{it} \\ PA_{it} \\ TXIDP_{it} \end{bmatrix} = \begin{bmatrix} a_{10} \\ a_{20} \\ a_{30} \\ a_{40} \\ a_{50} \\ a_{60} \\ a_{70} \\ a_{80} \end{bmatrix} +$$

$$\begin{bmatrix} L_{11} & L_{12} & L_{13} & L_{14} & L_{15} & L_{16} & L_{17} & L_{18} \\ L_{21} & L_{22} & L_{23} & L_{24} & L_{25} & L_{26} & L_{27} & L_{28} \\ L_{31} & L_{32} & L_{33} & L_{34} & L_{35} & L_{36} & L_{37} & L_{38} \\ L_{41} & L_{42} & L_{43} & L_{44} & L_{45} & L_{46} & L_{47} & L_{48} \\ L_{51} & L_{52} & L_{51} & L_{54} & L_{55} & L_{56} & L_{57} & L_{58} \\ L_{61} & L_{62} & L_{63} & L_{64} & L_{65} & L_{66} & L_{67} & L_{68} \\ L_{71} & L_{72} & L_{73} & L_{74} & L_{75} & L_{76} & L_{77} & L_{78} \\ L_{81} & L_{82} & L_{83} & L_{84} & L_{85} & L_{86} & L_{87} & L_{88} \end{bmatrix} \begin{bmatrix} EMTP_{it-p} \\ TCPIB_{it-p} \\ OUVcr_{it-p} \\ CSP_{it-p} \\ PA_{it-p} \\ INV_{it-p} \\ INF_{it-p} \\ TXIDP_{it-p} \end{bmatrix} + \begin{bmatrix} \mu_1 \\ \mu_2 \\ \mu_3 \\ \mu_4 \\ \mu_5 \\ \mu_6 \\ \mu_7 \\ \mu_8 \end{bmatrix}$$

With Y_{it} an 8-variable vector considered to be simultaneously endogenous and exogenous, with: i= 1…8 (the eight WAEMU countries), and t=1…16 (years).

$EMPT_{it}$: Referred to as the degree of trade openness, this indicator measures the importance of foreign trade in a country's economy.

OUV_{it} : Known as the degree of openness, this ratio measures the importance of foreign trade in a country's economy.

INV_{it} : The investment rate, also referred to as the gross investment rate, represents the share of a country's gross domestic product (GDP) devoted to investment in new goods and equipment.

INF_{it} : Inflation refers to the loss of purchasing power of money, reflected in a sustained and general increase in the prices of goods and services.

$TXIDP_{it}$: This interest rate indicates the yield offered on an issuer's debt securities with different maturities.

$TCPIB_{it}$: This indicator measures the change in GDP between two periods (years).

CSP_{it} Domestic credit provided to the private sector (CSP), an indicator measuring the financial resources allocated to the private sector relative to GDP.

PA_{it} The economically active population, which can be expressed as a percentage of the total working-age population, thereby providing a measure of the economic activity rate.

After presenting the methodological framework, the specification of the PVAR model, and the various variables selected for the empirical analysis, it is now necessary to determine the dynamic structure of the model, particularly the optimal number of lags to be included. This step is essential to ensure an appropriate model specification and to avoid over-

parameterization, which could affect the quality of the estimates. To this end, we rely on the main information criteria used for PVAR models, namely the Modified Bayesian Information Criterion (MBIC), the Modified Akaike Information Criterion (MAIC), and the Modified Quasi-Information Criterion (MQIC) (Andrews and Lu, 2001).

The lag-order selection procedure for the PVAR model leads to the adoption of a first-order specification. Indeed, the three information criteria MBIC, MAIC, and MQIC reach their minimum values at one lag, with values of - 332.005, - 82.151, and - 183.685, respectively, compared with - 155.549, - 42.243, and - 88.287 for a two-lag specification. Accordingly, the first-order PVAR model, PVAR, is retained for the empirical analysis. Table 1 presents the number of lags selected for our PVAR model. Table 1 in the Appendix presents the causal relationships among the different variables.

Table N°1 : number of lags selected for our PVAR model.

lag	CD	J	J pvalue	MBIC	MAIC	MQIC
1	.9999949	89.84866	.3669789	-332.005	-82.15134	-183.6848
2	.9999832	35.75686	.6186001	-155.5489	-42.24314	-88.2874

Source : Author's calculations

2.2. Data and description of variables

In the context of this study on the development of the government securities market and economic growth in WAEMU countries, it is essential to define the selected variables. The dependent and independent variables are used to measure economic growth and developments in the government securities market, respectively. Their rigorous definition facilitates understanding of the relationships studied and ensures the consistency of the analysis. Thus, the description of the variables is a key step in ensuring the reliability of the empirical results.

Macroeconomic Performance (Dependent Variable): In this study, macroeconomic performance is measured using several macroeconomic variables, namely gross domestic product (GDP), trade openness, investment, and inflation.

Gross domestic product : GDP is the sum of all value added produced in a country's economy over a given period, usually a year. It includes the production of goods and services in all sectors of the economy, such as agriculture, industry, services, etc. GDP essentially measures the size of a country's economy. It is a widely used indicator in several studies to examine the link between economic growth and the government securities market (Barna and Mura. 2010; Cooray, 2010; Shin, 2013; Silve and Plekhanov, 2014; Kusumastuty et al., 2019; Anderu, 2020; Pokharel, 2020). To measure the economic growth of a country or group of countries, the

overall production indicator known as GDP can be used. GDP is defined as the sum of the values or wealth created by institutional sectors.

Trade openness: Several empirical studies have shown that the development of the public securities market can be an important driver of long-term growth, among other things (King and Levine 1993; Blanchard, 2018; Fufa and Kim 2018; Minsky, 2019). A wealth of literature also links trade openness and export orientation to growth (Dollar, 1992; Sachs and Warner, 1995; Edwards, 1998). However, less attention has been paid to the interactions between financial development, trade and growth. Beck (2002) examines the links between financial development and trade in manufactured goods using a regression analysis covering several countries and based on recent data, and finds that finance has a significant impact on exports and the trade balance of manufactured goods. Similarly, Baltagi et al. (2009) observe that trade is a significant determinant of financial development. Bordo and Rousseau (2012) study a panel of now-developed economies from 1880 to 2010 and find cross-correlations between financial development and trade before 1914, which disappear after the Second World War.

Interest rates: Interest rates on public debt vary depending on several factors, including the maturity of the debt (short, medium or long term), the credit rating of the issuing government, overall economic conditions and market interest rates. These interest rates are generally expressed as a percentage and represent the cost that the government must pay to borrow money on the financial markets. Theoretical and empirical literature examines the relationship between the government securities market and economic growth, incorporating the interest rate as a determining variable (Caballero et al., 2017; Fufa and Kim, 2018; Rachel and Summers, 2018; Blanchard, 2019; Appiah et al., 2020).

Investment: Investment is a measure of gross expenditure by businesses, households and the government with the aim of increasing the stock of productive or real estate capital. It therefore includes both private and public investment. According to Jsecco (2014), investment consists of acquiring capital goods with a view to significantly renewing or actually increasing the amount of fixed capital available. It is a forward-looking expenditure, as it aims to generate a surplus of capital goods to improve future production capacity.

Investment is generally measured by gross capital formation (GCF), expressed as a percentage of GDP, and is a key factor in economic growth due to its positive multiplier effect. It should be remembered that investment is a flow, while the fixed capital it generates is a stock. It therefore makes it possible to gradually increase the existing stock of production assets (factories, machinery, tools, means of transport, offices, warehouses, land, etc.).

The role of the state is essential in this dynamic, through public investment in economic (transport, energy, telecommunications), social (education, health) and administrative infrastructure. These public investments not only have a direct effect on national capital, but also create a favourable environment for investment.

Inflation: In recent years, the importance of inflation in the relationship between the government securities market and economic growth has sparked renewed interest in economic debate. From a theoretical perspective, this debate is taking place between structuralists and monetarists. Structuralists argue that inflation is essential to economic growth, while monetarists believe that it is detrimental to economic progress and therefore to economic growth. However, despite this divergence, a general consensus seems to have emerged that moderate inflation contributes to economic growth (Mubarik, 2005). Several studies have shown the link between the government securities market and economic growth through the mechanism of inflation (Fisher, 1993; Sarel, 1996; Ghosh and Phillips, 1998; Bikai and Kamga, 2012**).**

Domestic credit provided by the private sector: Domestic credit provided by the private sector refers to the total amount of loans and financing granted by private financial institutions to domestic borrowers in a given country. It is therefore the total amount of loans granted by commercial banks, credit companies and other private financial institutions to businesses, households or other entities located within national borders. Domestic credit provided by the private sector represents the value of loans granted by banks to private businesses and households divided by GDP. It is used as a measure of financial depth (Levine and Zervos, 1996). It has been shown that countries with higher levels of private credit relative to GDP experience faster growth and higher poverty reduction rates (Beck, Levine and Loayza, 2000; Demirguc-Kunt and Levine, 2007).

Human capital measured by the labour force: The labour force refers to the portion of the working-age population that is available for employment, whether employed or seeking employment. It includes people who are employed as well as those who are unemployed but available for work and actively seeking employment. The size of the labour force is a key indicator for assessing the workforce of a society or economy. It is often used to calculate statistics such as the unemployment rate, labour force participation and other important economic indicators. Thus, human capital is an important determinant of economic growth in low-income countries (Brou and Ouattara, 2024).

The relationship between the labour force and economic growth is complex and can vary depending on many factors, including the demographic characteristics of the population and global economic conditions.

Capital market: The capital market is an auction-based market exclusively dedicated to government financing. Sovereign issuers use appropriate procedures to request the issuance of securities subscribed by specific participants, either on their own behalf or on behalf of third parties. There are three investment options on the capital market: investments in bills and/or bonds. Treasury Bills (BAT) are short-term debt securities issued by the government through auction. Assimilable Treasury Bonds (OATs) are medium- and long-term debt securities issued by the State through auction, while the Synthetic Bond (OS) is defined as a structured product consisting of several securities (bills and/or bonds) with repayment at maturity. Through the issuance of treasury bills (BAT) and treasury bonds (OAT), several theoretical and empirical studies have highlighted the link between the capital market and macroeconomic performance (Reinhart and Rogoff, 2013; Nyasha and Odhiambo, 2017; Sandal and Cemrek, 2019; Usumastuty et al., 2019; Endo, 2022).

2.3. Preliminary Results

Preliminary tests in the Panel Vector Autoregression (PVAR) framework constitute an essential step in the analysis of economic data. They make it possible to assess whether the data used are appropriate for the panel VAR model and satisfy the underlying assumptions required for robust analysis. These preliminary tests are crucial for ensuring the validity of the empirical results. They also help identify and address potential issues related to the data and model specification, thereby enhancing the robustness and credibility of the findings. In this section, we first present the correlation analysis among the variables, followed by the descriptive statistics.

Stationarity

Test of the Variables

In our Panel VAR model, the stationarity test is used to assess the stability of the statistical properties of the variables under study, namely GDP, trade openness, investment, inflation, the debt interest rate, and public securities issuance. To this end, we employ the Levin et al. (2002) test, whose null hypothesis assumes the presence of a unit root, indicating that the series are non-stationary. This preliminary verification is necessary to avoid the risk of spurious regressions and to ensure the validity of the estimations. The results show that most of the variables are stationary in levels, that is, integrated of order I(0), which supports the

appropriateness of the Panel VAR model for analyzing the relationships between the public securities market and macroeconomic performance in WAEMU countries.

Table N°2 : Results of the Variable Stationarity Test

Variables	Constance et tendances	Niveau de stationnarité	Ordre d'intégration
Pib	Constance et tendances	-3,7761 0,0000	I(0)
Ouv	Constance et tendances	-1,8737 0,0845	I(0)
Inv	Constance et tendances	-2,1080 0,0365	I(0)
Inf	Constance et tendances	-3,8228 0,0000	I(0)
Empt	Constance et tendances	-4,1083 0,0000	I(0)
Txidp	Constance et tendances	-3,2638 0,0001	I(0)
Csp	Constance et tendances	-1,7828	I(1)
Pa	Constance et tendances	-1,7828	I(2)

Source : Author's calculations

❖ Correlation Analysis of the Variables

The results reveal an overall favorable evolution of macroeconomic and financial indicators in WAEMU, particularly in the public securities market, suggesting an association between its development and economic performance. The most notable positive correlations are observed between human capital and public securities issuance (0.5343), investment and private-sector credit (0.40), and inflation and the debt interest rate (0.2762). GDP is also positively correlated with public securities issuance (0.0942) and gross capital formation (0.19). Conversely, negative correlations are observed between public securities issuance and the debt interest rate (-0.6856), investment and inflation (-0.1214), as well as GDP and inflation (-0.098).

These results highlight interdependencies among the variables included in the PVAR model. However, correlation coefficients alone are not sufficient to establish a causal relationship between the variables. The complete correlation results are presented in the table below.

Table N°3 : Correlation Matrix of the Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Pib	128	1.593453	2.547013	-7.314	8.5
Ouv	128	56.94344	14.71471	33.78	112.761
Inv	128	21.12645	5.882493	6.699	35.144
Infl	128	2.035812	2.666671	-3.233	11.305
Tximb	128	8.7	1.694936	5.68	12.87
Csp	128	17.50203	7.685573	1.6	40.16
Pa	128	52.65845	2.288793	48.397	56.444
Ln.EmissionTP	128	11.97871	1.586428	8.699514	17.21063

Source : Author's calculations

❖ Descriptive Statistics

Descriptive statistics provide information on the mean, minimum, maximum, and standard deviation of the different variables used in this study.

The results of the descriptive statistical analysis are presented in the following table

Table N°4 : Descriptive Statistics Table

	Pib	Ouv	inv	Infl	tximb	csp	Pa	lnetp
Pib	1.0000							
Ouv	0.0285	1.0000						
Inv	0.1883	0.1739	1.0000					
Infl	-0.0987	-0.0195	-0.1215	1.0000				
Tximb	-0.1250	-0.2141	-0.2762	0.2765	1.0000			
Csp	0.0928	0.5628	0.3988	-0.2817	-0.6132	1.0000		
Pa	0.0018	0.4270	-0.2236	-0.0277	-0.3920	0.3446	1.0000	
Ln.EmissionTP	0.0942	0.2084	0.3744	-0.3102	-0.6856	0.5343	0.1547	1.0000

Source : Author's calculations

The descriptive analysis highlights a substantial increase in government securities issuance in the WAEMU between 2005 and 2020, with a mean logarithmic value of 11.98 and values ranging from 8.70 to 17.21. Economic growth displays considerable heterogeneity, with an average rate of 1.59%, a minimum of −7.31%, and a maximum of 8.5%. Trade openness, investment, and private-sector credit indicators also reveal significant disparities across countries, whereas human capital appears relatively homogeneous. Inflation and the public debt interest rate likewise exhibit substantial variations, reflecting differences in economic conditions and financing costs across WAEMU member states. Overall, these descriptive findings, together with the preliminary diagnostic tests, support the relevance of the Panel Vector Autoregression (PVAR) framework for examining the interactions between the government securities market and macroeconomic performance.

3. Discussion of results

The table above presents the estimation results of the PVAR model aimed at analyzing the relationship between capital market development and macroeconomic performance in WAEMU countries. The estimations are conducted using a panel of eight countries of the Union over the period 2005–2020. The results highlight the statistical significance of several variables, including GDP, economic openness, investment, inflation, the debt interest rate, human capital, private-sector credit, and public securities issuance.

In this study, public securities issuance (EMTP) constitutes an empirical measure of capital market development, particularly its segment devoted to government financing. This distinction is important because the capital market is a broader concept encompassing various financial instruments, market participants, and mechanisms for mobilizing and allocating savings. Therefore, the results obtained for EMTP primarily provide evidence on the role of the public securities segment in the relationship between capital markets and macroeconomic performance in WAEMU.

The results of the first equation of the PVAR model, estimated without the GMM procedure, show a positive and statistically significant coefficient at the 10% level between public securities issuance and GDP. This finding indicates that an increase in public securities issuance is associated with an improvement in macroeconomic performance, measured in this study by GDP. This relationship may be explained by the role of capital markets in mobilizing financial resources to meet government financing needs. When the resources raised through public securities issuance are allocated to productive expenditures, particularly infrastructure and public investment, they can support economic activity and contribute to an improvement in GDP.

This finding highlights the role of capital markets in financing the economy. However, it should be emphasized that the identified effect relates directly to public securities issuance, rather than to all components of the capital market. The result should therefore be interpreted as evidence of the role of the public securities segment in the relationship between capital markets and macroeconomic performance. Overall capital market development may also depend on market depth, liquidity, diversification of financial instruments, investor participation, and the capacity to efficiently mobilize savings.

The results also suggest a relationship in the opposite direction: an improvement in macroeconomic performance may foster capital market development, particularly by increasing the government's capacity to mobilize resources through the public securities market. An

increase in GDP may improve the government's repayment capacity, strengthen investor confidence, and create more favorable conditions for the issuance and absorption of public securities. This interdependence suggests that capital market development and macroeconomic performance can be viewed as two dimensions that may reinforce each other.

This bidirectional relationship is consistent with the empirical literature considered in this study. Krishnamurthy and Jorgensen (2012) highlight the importance of Treasury securities for the functioning of financial markets and the determination of financial conditions. Endo (2022), as well as Jareño et al. (2022), also contribute to the literature on the interactions between government debt markets, financial markets, and macroeconomic variables. These studies show that the relationships observed may depend on the level of economic development, financial conditions, interest rates, and fiscal policy orientations.

From this perspective, capital markets can contribute to macroeconomic performance by facilitating the mobilization of savings and their allocation to the financing of economic activity. However, the effect of relying on capital markets is not necessarily positive under all circumstances. Excessive accumulation of public debt may increase the interest burden and reduce fiscal space. This consideration is consistent with Rajan and Subramanian (2008), who show that excessive external debt accumulation can have adverse effects on growth in developing countries.

The work of Wahidin, Akimov, and Roca (2021) also helps place this relationship within the broader context of bond market development and integration. They emphasize the importance of bond markets in financial and economic transformations. However, their analysis covers a broader framework than that adopted in our study. In our case, the indicator focuses on public securities issuance and primarily captures the capacity of the regional market to mobilize resources for financing governments in WAEMU.

Furthermore, Grjebine (2019) highlights the implications of rising public indebtedness in the context of the 2007–2008 financial crisis. These considerations show that capital market development should not be assessed solely in terms of the increase in the volume of securities issued. The terms of issuance, financing costs, the use of mobilized resources, and debt sustainability should also be taken into account. From this perspective, a deeper capital market can contribute to financing growth, provided that mobilized resources are used productively and that debt remains sustainable.

The results of the second equation, estimated using the GMM approach, broadly confirm those obtained from the PVAR model without GMM. The coefficient associated with public

securities issuance retains a positive sign and remains statistically significant, thereby strengthening the robustness of the observed relationship between this component of the capital market and macroeconomic performance. The GMM estimates therefore support the view that the interactions between capital markets and macroeconomic performance are not solely related to contemporaneous fluctuations in the variables, but occur within a dynamic framework that accounts for their interdependence.

Nevertheless, it is important to clearly distinguish between relationship, bidirectionality, and causality. The fact that the PVAR results reveal interactions in both directions means that public securities issuance and GDP evolve interdependently within the dynamics of the model. This does not necessarily imply that an increase in public securities issuance, by itself, causes an increase in GDP, nor that GDP growth mechanically causes an increase in public securities issuance. The results should therefore be interpreted as evidence of a dynamic relationship between one component of the capital market and macroeconomic performance.

Overall, the findings show that the capital market, empirically captured through public securities issuance, has a positive and dynamic relationship with macroeconomic performance in WAEMU countries. They suggest that the development of the public securities segment may contribute to financing economic activity, while improved macroeconomic performance may, in turn, foster the development of this market. These findings are consistent with the contributions of Krishnamurthy and Jorgensen (2012), Endo (2022), and Jareño et al. (2022), while also reflecting the concerns raised by Rajan and Subramanian (2008) regarding the risks associated with excessive indebtedness.

Thus, in the WAEMU context, capital market development appears to be an important mechanism for mobilizing financial resources. However, its contribution to macroeconomic performance depends not only on the volume of resources mobilized, but also on their allocation, financing costs, and the sustainability of public debt. Robustness tests based on alternative variables were subsequently conducted to assess the stability of the results obtained.

Table N°5 : PVAR Model Estimation versus PVAR-GMM Estimation

	eq1					eq2				
VARIABLES	Pib	Inf	Inv	Txidp	ln_emtp	Pib	Inf	Inv	txidp	ln_emtp
L.pib	**0.0624**	**0.0807*** **	**-0.0759**	**-0.0212**	**0.0523** **	**0.390*** **	**-0.214*** **	**-0.191*** **	**-0.0540*** **	**0.0400**
	(0.0414)	(0.0296)	(0.0665)	(0.0215)	(0.0259)	(0.0735)	(0.0362)	(0.0339)	(0.0124)	(0.0263)
L.inf	-0.194***	0.0295	-0.127***	0.0211	0.0196	0.292***	-0.379***	-0.198***	-0.0376***	-0.0536**
	(0.0642)	(0.0416)	(0.0487)	(0.0180)	(0.0330)	(0.0976)	(0.0583)	(0.0463)	(0.0141)	(0.0267)
L.inv	-0.342***	-0.0368	0.810***	0.0120	0.0696**	-0.320***	-0.0843	0.832***	0.00306	0.0773***
	(0.0441)	(0.0327)	(0.0671)	(0.0135)	(0.0334)	(0.0968)	(0.0555)	(0.0435)	(0.0108)	(0.0242)
L.txidp	-0.378	-1.189***	-0.0662	0.463***	0.270**	2.812***	0.684***	0.175	0.262***	-0.247**
	(0.374)	(0.144)	(0.280)	(0.131)	(0.115)	(0.489)	(0.195)	(0.226)	(0.0641)	(0.107)
L.ln_emtp	**-1.039*** **	**-0.275*** **	**0.0368**	**0.0227**	**1.257*** **	**0.505*** **	**-1.547*** **	**-0.345*** **	**-0.144*** **	**0.876*** **
	(0.150)	(0.0686)	(0.134)	(0.0640)	(0.0889)	(0.182)	(0.146)	(0.124)	(0.0315)	(0.0682)
Observations	88	88	88	88	88	112	112	112	112	112
N	8	8	8	8	8	8	8	8	8	8

Source : Author's calculations

The impulse response functions presented in the figure in the appendix provide insights into the dynamics of the interactions between capital markets and macroeconomic performance in WAEMU countries. They trace the responses of the different variables in the model following a one-unit shock to each endogenous variable, thereby making it possible to identify the direction, magnitude, and persistence of the responses over time. Their interpretation should therefore be considered not only from a statistical perspective but also in light of the economic mechanisms characterizing government financing, economic activity, and financial conditions in WAEMU. This approach is particularly relevant in a PVAR framework, where the objective is to highlight dynamic interactions among variables rather than to interpret individual coefficients in isolation.

The results first reveal the existence of a dynamic interaction between capital markets and macroeconomic performance. A positive shock to macroeconomic performance generates a positive and statistically significant response in public securities issuance. This response may be interpreted as the outcome of improved macroeconomic conditions, which can strengthen investor confidence and increase governments' ability to mobilize resources in domestic markets. As economic activity expands, prospects for public revenues and debt sustainability may also improve, thereby creating more favorable sovereign financing conditions. Thus, improved macroeconomic performance appears to be associated with greater capital market activity.

Conversely, a positive shock to capital markets results in a positive and statistically significant improvement in macroeconomic performance. This finding may be explained by the ability of capital markets to provide governments with the resources required to finance fiscal deficits and investment expenditure. The issuance of public securities allows governments to diversify their financing sources and reduce their reliance on monetary financing. From this perspective, capital markets can contribute to the financing of infrastructure, public investment, and other expenditures capable of supporting economic activity. The literature on financial markets and government securities also emphasizes the role of these instruments in providing liquidity and financing economic activity. Krishnamurthy and Li (2022), for example, highlight the importance of Treasury securities in meeting investors' demand for liquidity.

The evolution of the responses over time provides an additional important insight. The positive effects observed in the short and medium term gradually diminish and converge toward their long-run equilibrium levels. This convergence indicates that shocks do not necessarily generate permanent effects on the variables in the system. In other words, capital markets may act as an

adjustment mechanism capable of temporarily absorbing certain macroeconomic imbalances without permanently altering the long-run trajectory of the variables. This dynamic property is consistent with macro-financial analyses of WAEMU economies, in which responses to shocks tend to gradually return toward equilibrium following the initial adjustment phase.

The impulse responses also show that an inflationary shock negatively and significantly affects public securities issuance. An acceleration in inflation may lead to tighter financial conditions and higher interest rates, thereby increasing government financing costs and potentially reducing the attractiveness of bond issuance. The decline in issuance observed in response to such a shock thus highlights the importance of monetary and financial conditions for the functioning of capital markets. In a monetary union such as WAEMU, this relationship is particularly important because monetary conditions directly influence financing conditions for member economies and governments.

The responses of capital markets to growth shocks also deserve particular attention. When economic performance deteriorates, governments' financing needs may increase, partly because of declining public revenues and rising expenditures aimed at supporting economic activity. In this context, an increase in public securities issuance may constitute a fiscal adjustment mechanism for rapidly mobilizing financial resources. The COVID-19 crisis provides an economically relevant illustration of this mechanism: the deterioration in economic activity was accompanied by substantial public financing needs, which increased reliance on capital markets. However, this interpretation should be viewed as an economic mechanism consistent with the model's results rather than as evidence that every episode of weaker growth mechanically leads to higher issuance.

The results concerning public securities issuance should also be interpreted in light of market liquidity and depth. An increase in the supply of securities may contribute to improving market liquidity, but this effect is not necessarily proportional to the increase in issuance. Based on data on Indian government securities, Dayanandan, Chander, and Rajendra Kumar (2023) show that an increase in the supply of securities may improve market liquidity, although the marginal contribution of an additional increase in outstanding securities declines beyond a certain threshold. This finding provides a useful qualification to the interpretation of our impulse responses: capital market development depends not only on the volume of issuance but also on market depth, liquidity, security quality, investor confidence, and the effectiveness of debt management.

Taken together, these findings provide a better understanding of the transmission mechanism between capital markets and macroeconomic performance in WAEMU. Capital markets constitute a channel through which public financing needs can be transformed into mobilized resources capable of supporting economic activity. In turn, improved macroeconomic performance can strengthen investor confidence, improve financing conditions, and promote the development of public securities issuance. This reciprocal interaction helps explain the positive and dynamic relationship observed between the two central dimensions of our study.

However, the positive response of macroeconomic performance to a capital market shock should be interpreted with caution. Public securities issuance does not automatically generate a favorable effect on economic activity. Its economic impact depends, among other factors, on how mobilized resources are used, financing costs, debt sustainability, and the ability of the expenditures financed to generate productive activity. An increase in issuance aimed at financing productive investment may support economic activity, whereas excessive reliance on debt may increase financial costs and, over time, exert pressure on private investment and fiscal sustainability. PVAR-based studies also show that the effects of public debt on capital formation and output may be associated with crowding-out mechanisms in certain contexts.

Finally, the impulse response functions highlight a dynamic interdependence between the two central variables of the study. The response of capital markets to a shock in macroeconomic performance, combined with the response of macroeconomic performance to a capital market shock, suggests the existence of a reciprocal interaction process. This configuration is consistent with the notion of a bidirectional relationship, but it should be distinguished from a definitive claim of structural causality. The results primarily indicate that the two variables dynamically respond to innovations in each other within the estimated PVAR framework.

Thus, the impulse response functions provide important insights into the research question addressed in "Capital Markets and Macroeconomic Performance: The Case of WAEMU." They show that capital markets are not merely an instrument for financing public deficits; they also constitute part of the transmission mechanism of macroeconomic shocks. At the same time, macroeconomic performance influences the conditions under which capital markets develop and mobilize financial resources. The main economic implication is therefore one of a dynamic interaction between capital market development and macroeconomic performance, the magnitude and persistence of which depend on inflationary conditions, public financing needs, market liquidity, debt sustainability, and, more broadly, the quality of the macroeconomic and institutional framework in WAEMU.

Conclusion

The objective of this study is to analyse the link between capital market development and macroeconomic performance from 2005 to 2020. To achieve our objective, we used a panel data VAR model (PVAR), a tool particularly suited to the study of intertemporal and interindividual dynamics. The main results suggest the existence of a bidirectional relationship between the capital market and macroeconomic performance. Indeed, the capital market promotes liquidity, mobilises and channels savings, stimulates investment and thus contributes to an increase in overall production, which translates into improved macroeconomic performance. Conversely, a dynamic real sector leads to an increase in capital market issuance and, consequently, to its development. It should be noted, however, that the effects of macroeconomic performance on the capital market depend on several factors, including the direction of monetary and fiscal policy, investor expectations and the overall economic situation. The results clearly confirm the existence of a two-way causal relationship between the capital market and macroeconomic performance.

The distinctive feature of this study lies in its empirical demonstration of this dual causality through the increase in emissions of Treasury assimilable bonds (BAT) and Treasury assimilable bonds (OAT), which are key instruments in the capital market, and developments in the real sector, as measured by macroeconomic performance indicators. Treasury bonds are debt securities issued by governments to finance public spending. They are financial instruments that enable governments to raise funds from investors on the financial markets and have been a key tool for public debt management, particularly in the WAEMU region in recent years. Investors who subscribe to these securities receive a return in the form of periodic coupons and benefit from the repayment of capital at maturity. These securities are generally considered relatively safe due to the sovereign guarantee associated with them, although their specific characteristics may vary from one country to another within the WAEMU depending on national regulatory and institutional frameworks.

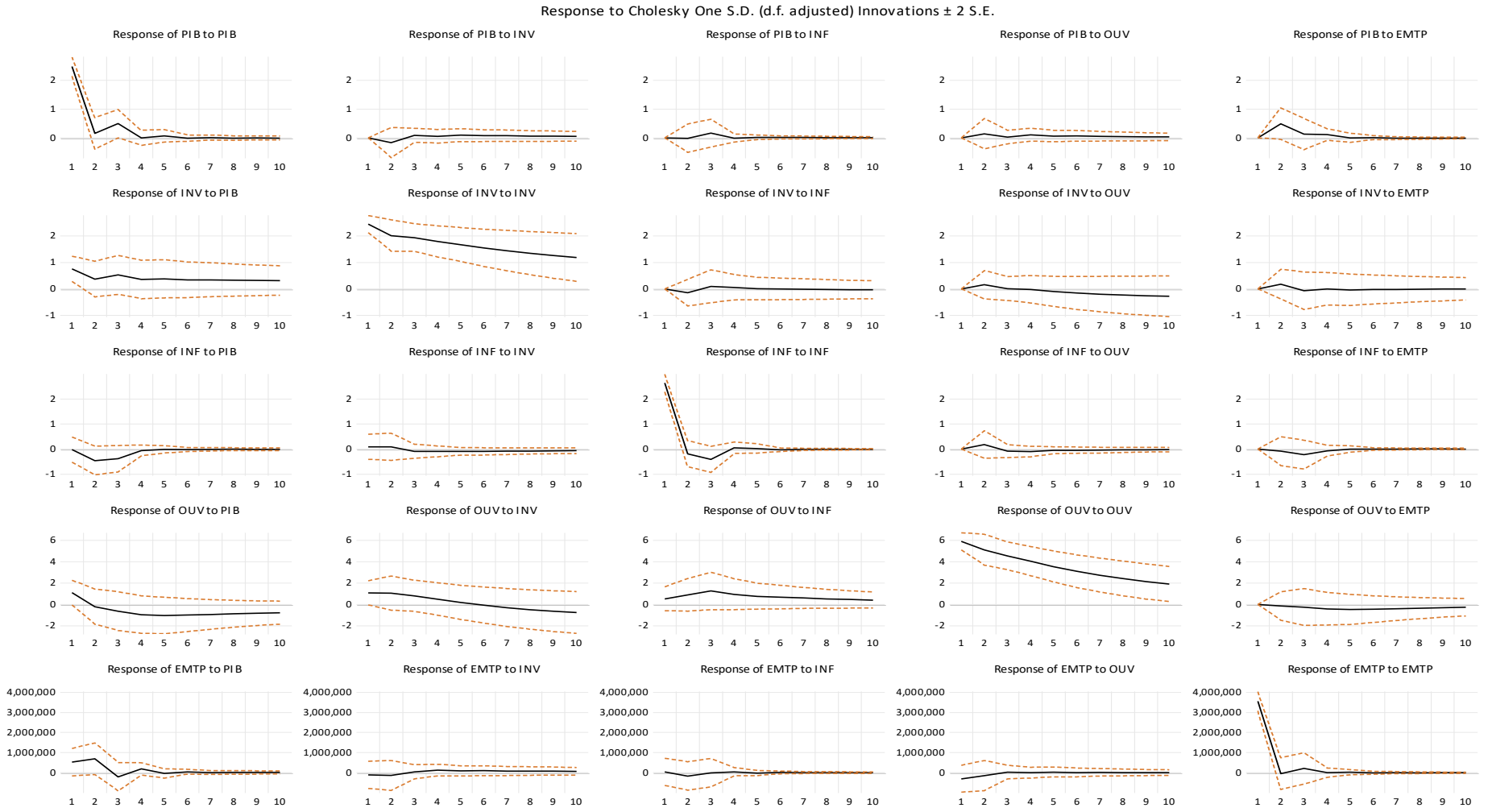
In addition, WAEMU member states also finance their investment and operating needs through Treasury bonds (OATs), which are medium- and long-term debt securities with fixed principal and maturities ranging from two to ten years or more. OAT issues have a direct impact on the real sector, as shown by Dittmar et al. (2008) and the empirical results of our thesis, although the extent of these effects varies from country to country. In addition, efficient use of the capital market, particularly through the use of Eurobonds, can contribute to strengthening the

macroeconomic stability of WAEMU countries by financing sustainable development projects and reducing dependence on international economic cycles.

These findings imply several recommendations for public and monetary authorities. It appears essential to strengthen regional institutions and foster broad consensus around monetary and fiscal policies. Indeed, when these policies are ineffective or insufficiently coordinated, the positive effects of the relationship between capital markets and macroeconomic performance remain limited. Strengthening the financial infrastructure through the adoption of sound macroeconomic policies, a credible legal framework and a robust institutional architecture is a fundamental lever for capital market development.

Against the backdrop of the COVID-19 pandemic and the Russian-Ukrainian crisis, several WAEMU countries have faced a liquidity crunch, making it more difficult to raise funds on the capital market. This liquidity shortage, combined with higher financing costs, has forced some countries to postpone or reduce their bond issues. These poor performances illustrate the limitations of an insufficiently liquid capital market. Capital market liquidity refers to the ability of investors to buy or sell securities quickly without causing significant price fluctuations. The more liquid the market, the more it promotes the attractiveness of securities, investor confidence and, ultimately, improved macroeconomic performance.

Appendix 1 : Impulse Response Functions



Appendix 2 : Granger bidirectionnal causality test

Equation \Excluded		chi2	Df	Prob > chi2
Pib				
	Ouv	16.039	1	**0.000**
	Inf	24.158	1	**0.000**
	Inv	2.866	1	**0.090**
	Txidp	11.507	1	**0.001**
	ln_emtp	18.633	1	**0.000**
	ALL	63.769	5	**0.000**
Ouv				
	Pib	1.406	1	**0.236**
	Inf	0.027	1	**0.870**
	Inv	42.413	1	**0.000**
	Txidp	10.535	1	**0.001**
	ln_emtp	10.203	1	**0.001**
	ALL	85.979	5	**0.000**
Inf				
	Pib	51.908	1	**0.000**
	Ouv	2.899	1	**0.089**
	Inv	0.592	1	**0.442**
	Txidp	13.557	1	**0.000**
	ln_emtp	50.792	1	**0.000**
	ALL	140.580	5	**0.000**
Inv				
	Pib	11.874	1	**0.001**
	Ouv	2.297	1	**0.130**
	Inf	18.317	1	**0.000**
	Txidp	8.383	1	**0.004**
	ln_emtp	0.510	1	**0.475**
	ALL	64.258	5	**0.000**
Txidp				
	Pib	0.431	1	**0.511**
	Ouv	5.783	1	**0.016**
	Inf	0.649	1	**0.421**
	Inv	0.754	1	**0.385**
	ln_emtp	0.084	1	**0.772**
	ALL	19.307	5	**0.002**
ln_emtp				
	Pib	1.607	1	**0.205**
	Ouv	5.751	1	**0.016**
	Inf	11.029	1	**0.001**
	Inv	15.417	1	**0.000**
	Txidp	2.639	1	**0.104**
	ALL	37.301	5	**0.000**

Bibliography

Abbas, S. M. A., & Christensen, J. E. (2007). The role of domestic debt markets in economic growth: An empirical investigation for low-income countries and emerging markets. IMF Working Paper, 2007(127), 1–40. https://doi.org/10.5089/9781451866919.001

Abrigo, M. R. M., & Love, I. (2016). Estimation of panel vector autoregression in Stata. The Stata Journal, 16(3), 778–804. https://doi.org/10.1177/1536867X1601600314

Agboton, D. J. (2023). Essai sur la prévision du taux d'intérêt directeur optimal dans la zone UEMOA : Une approche par l'équation de John Brian Taylor (1993) [Mémoire/thèse, institution à préciser].

Aglietta, M. (2012). La monnaie entre violence et confiance. Odile Jacob.

Anderu, K. S. (2020). Capital market and economic growth in Nigeria. Jurnal Perspektif Pembiayaan dan Pembangunan Daerah, 8(3), 295–310.

Anyanwu, J. C. (2010). Poverty in Nigeria: A gendered analysis. African Statistical Journal, 11(11), 38–61.

Appiah, M., Frowne, D. I., & Tetteh, D. (2020). Réexaminer le lien entre développement financier et réduction de la pauvreté : Données issues des économies émergentes. Revue d'économie appliquée, 27(2), 125–144.

Artus, P. (2023). De l'économie d'abondance à l'économie de rareté. Odile Jacob.

Bachellerie, A., & Couillault, B. (2005). Public debt sustainability and crises in emerging market countries: A presentation of the concepts and diagnostic tools. Financial Stability Review, 6, 63–80.

Bagehot, W. (1873/1999). Lombard Street: A description of the money market. Wiley.

Beck, T., & Levine, R. (2002). Industry growth and capital allocation: Does having a market- or bank-based system matter? Journal of Financial Economics, 64(2), 147–180. https://doi.org/10.1016/S0304-405X(02)00074-0

Becker, B., & Ivashina, V. (2018). Financial repression in the European sovereign debt crisis. Review of Finance, 22(1), 83–115.

Beji, S., & Youssef, D. (2010). La place de la régulation bancaire dans le développement bancaire et la croissance : Une approche institutionnelle pour les pays d'Afrique du Nord et du Moyen-Orient. Région et Développement, 32, 121–152.

Bikai, J. L., Essiane, P. N., & [auteurs à vérifier]. (2017). Politique monétaire, stabilité monétaire et croissance économique dans la CEMAC : Une approche SVAR bayésienne (Document de travail, Vol. 8, p. 17). Banque des États de l'Afrique Centrale.

Blanchard, O. (2019). Public debt and low interest rates. American Economic Review, 109(4), 1197–1229. https://doi.org/10.1257/aer.109.4.1197

Bouis, R. (2019). Banks' holdings of government securities and credit to the private sector in emerging market and developing economies. International Monetary Fund.

BROU, M. D., & Ouattara, W. (2024). Effet de l'aide publique au développement sur la croissance économique dans l'espace de l'Union économique et monétaire ouest-africaine (UEMOA). Revue Française d'Économie et de Gestion, 5(2).

Caballero, R. J., Farhi, E., & Gourinchas, P.-O. (2017a). The safe assets shortage conundrum. Journal of Economic Perspectives, 31(3), 29–46. https://doi.org/10.1257/jep.31.3.29

Caballero, R. J., Farhi, E., & Gourinchas, P.-O. (2017b). Rents, technical change, and risk premia accounting for secular trends in interest rates, returns on capital, earning yields, and factor shares. American Economic Review, 107(5), 614–620. https://doi.org/10.1257/aer.p20171036

Cabrillac, B., & Rocher, E. (2009). Les marchés de titres de la dette publique dans les pays africains en développement : Évolution récente et principaux défis. Bulletin de la Banque de France, 176, 33–45.

Cezar, R. (2012). Un nouvel indice du développement financier. Document de travail UMR DIAL.

Crowe, C., & Meade, E. E. (2008). Central bank independence and transparency: Evolution and effectiveness. European Journal of Political Economy, 24(4), 763–777.

Dada, A. O., Azim, M. S., & Ullah, M. S. (2014). The imperatives of innovative sources of development finance: Evidence from Nigeria. Developing Country Studies, 5(14).

Danjuma, S., & Ibrahim, U. A. (2020). Effect of corporate governance on the performance of listed deposit money banks in Nigeria. Science Journal of Business and Management, 8(1), 35–40.

De Bonis, R., & Stacchini, M. (2013). Does government debt affect bank credit? International Finance, 16(3), 289–310.

Degbedji, D. F., Akpa, A. F., Chabossou, A. F., & Osabohien, R. (2024). Institutional quality and green economic growth in West African Economic and Monetary Union. Innovation and Green Development, 3(1), 100108.

Demirgüç-Kunt, A. (1989). Deposit-institution failures: A review of empirical literature. Economic Review, Federal Reserve Bank of Cleveland, 4, 2–18.

Demirgüç-Kunt, A., & Levine, R. (1996). Stock markets, corporate finance, and economic growth: An overview. The World Bank Economic Review, 10(2), 223–239. https://doi.org/10.1093/wber/10.2.223

Demirgüç-Kunt, A., & Levine, R. (2008). Finance et opportunité économique. Revue d'économie du développement, 16(4), 5–29.

Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2018). The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution. World Bank.

Dieng, O., & Sène, B. (2024). Le mécanisme de transmission de la politique monétaire dans l'Union économique et monétaire ouest-africaine (UEMOA) : Témoignage du bilan bancaire. Cogent Economics & Finance. https://doi.org/10.1080/23322039.2024.2312373

Dollar, D., & Kraay, A. (2004). Trade, growth, and poverty. The Economic Journal, 114(493), F22–F49. https://doi.org/10.1111/j.0013-0133.2004.00186.x

Endo, T. (2022). Endogenous market development for government securities in lower-income economies. Emerging Markets Review, 50, 100844. https://doi.org/10.1016/j.ememar.2021.100844

Esso, L. J. (2010a). Long-run relationship and causality between foreign direct investment and growth: Evidence from ten African countries. International Journal of Economics and Finance, 2(2), 168–177.

Esso, L. J. (2010b). Threshold cointegration and causality relationship between energy use and growth in seven African countries. Energy Economics, 32(6), 1383–1391.

Fink, G., Haiss, P., & Hristoforova, S. (2003). Bond markets and economic growth. IEF Working Paper No. 49, Institute for European Affairs, Vienna.

Fisher, S., Colton, R. D., & [auteurs à vérifier]. (1993). Identifying savings arising from low-income programs. National Consumer Law Center.

Friedman, M. (2005). A natural experiment in monetary policy covering three episodes of growth and decline in the economy and the stock market. Journal of Economic Perspectives, 19(4), 145–150.

Fufa, T., & Kim, J. (2018). Stock markets, banks, and economic growth: Evidence from more homogeneous panels. Research in International Business and Finance, 44, 504–517.

Galbraith, J. K. (2011). La grande crise de 1929 : Anatomie d'une catastrophe financière. Payot.

Gennaioli, N., Martin, A., & Rossi, S. (2018). Banks, government bonds, and default: What do the data say? Journal of Monetary Economics, 98, 98–113.

Ghosh, A. R., & Phillips, M. S. (1998). Inflation, disinflation, and growth. International Monetary Fund.

Goldsmith, R. W. (1969). Financial structure and development. Yale University Press.

Harwood, A. (2000). Building local bond markets: Some issues and actions. In A. Harwood (Ed.), Building local bond markets: An Asian perspective (Chap. 1). International Finance Corporation.

Hawkins, J. (2002). Bond markets and banks in emerging economies. In The development of bond markets in emerging economies (BIS Papers No. 11, pp. 42–48). Bank for International Settlements.

Horn, M., Oehler, A., Dabbous, A., & Croutzet, A. (2025). Relation entre conscience environnementale et rendement boursier. International Review of Economics & Finance, 104383.

Im, K. S., & Pesaran, M. H. (2003). On the panel unit root tests using nonlinear instrumental variables [Working paper]. University of Cambridge.

Jalilian, H., & Kirkpatrick, C. (2001). Financial development and poverty reduction in developing countries (Working Paper No. 30). Institute for Development Policy and Management, University of Manchester.

Jareño, F., Yousaf, I., & Esparcia, C. (2022). Connectivity between lending/borrowing tokens and commercial banks' stocks. International Review of Financial Analysis, 84, 102417.

Jondeau, É., & Ricart, R. (1999). Le contenu en information de la pente des taux : Application au cas des titres publics français. Économie & Prévision, 140–141, 1–20.

Kim, J. K., & Lee, C. H. (2010). Finance and economic development in Korea (Working Paper Series No. 10-A05). Seoul National University Institute for Research in Finance and Economics.

Krishnamurthy, A., & Li, W. (2023). The demand for money, near-money, and Treasury bonds. The Review of Financial Studies, 36(5), 2091–2130. https://doi.org/10.1093/rfs/hhad001

Krishnamurthy, A., & Vissing-Jorgensen, A. (2015). The impact of Treasury supply on financial sector lending and stability. Journal of Financial Economics, 118(3), 571–600.

Laeven, L., & Perotti, E. C. (2001). Confidence building in emerging stock markets. CEPR Discussion Paper No. 3055.

Love, I., & Zicchino, L. (2006). Financial development and dynamic investment behavior: Evidence from panel VAR. The Quarterly Review of Economics and Finance, 46(2), 190–210. https://doi.org/10.1016/j.qref.2005.11.007

Lukasz, R., & Smith, T. (2015). Secular drivers of the global real interest rate. Bank of England Staff Working Paper No. 571.

Maddala, G. S., & Wu, S. (1999). A comparative study of unit root tests with panel data and a new simple test. Oxford Bulletin of Economics and Statistics, 61(S1), 631–652. https://doi.org/10.1111/1468-0084.61.s1.13

Mahmoudi, A., & Torra, M. (2023). Libérer le potentiel de l'Afrique : Explorer le lien synergique entre le développement financier et la croissance économique. International Journal of Accounting, Finance, Auditing, Management and Economics, 4(3-2), 1–21.

Majumder, D. (2013). Vers un marché boursier efficace : Données empiriques issues du marché indien. Journal of Policy Modeling, 35(4), 572–587.

Mehrotra, N. R., & Sergeyev, D. (2021). Debt sustainability in a low interest rate world. Journal of Monetary Economics, 124(Supplement), S1–S18. https://doi.org/10.1016/j.jmoneco.2021.09.001

Minsky, H. P. (1986). The evolution of financial institutions and the performance of the economy. Journal of Economic Issues, 20(2), 345–353.

Minsky, H. P. (2016). Can it happen again? Essays on instability and finance. Routledge.

Muye, I. M., & Muye, I. Y. (2017). Testing for causality among globalization, institution and financial development: Further evidence from three economic blocs. Borsa Istanbul Review, 17(2), 117–132.

Nag, A. K., & Ghosh, S. K. (2000). Analysis of the government securities yield curve in India. Economic and Political Weekly, 35(5), 339–348.

Nagel, S. (2016). The liquidity premium of near-money assets. The Quarterly Journal of Economics, 131(4), 1927–1971. https://doi.org/10.1093/qje/qjw018

Nath, G. C. (2013). Liquidity issues in the Indian sovereign bond market [Working paper]. SSRN. https://ssrn.com/abstract=2266839

Nzomo, J. (2017). Stock market, volatility and economic growth: Evidence from Cameroon, Côte d'Ivoire and Nigeria. ResearchGate.

Odhiambo, N. M. (2009). Energy consumption and economic growth in Tanzania: An ARDL bounds testing approach. Energy Policy, 37(2), 617–622.

Opoku, E. E. O., Ibrahim, M., & Sare, Y. A. (2019). The causal relationship between financial development and economic growth in Africa. International Review of Applied Economics, 33(6), 789–812.

Ouguehi, K. P., & Sebagui, G. C. (2024). L'effet des marchés financiers sur la croissance économique dans les pays de la CEDEAO : Évidence à travers le modèle de panel ARDL. Revue Française d'Économie et de Gestion, 5(7).

Panzu, A. N. (2022). Développement du secteur financier et croissance économique en RDC. Revue Internationale du Chercheur, 3(3).

Pesaran, M. H. (2003). A simple panel unit root test in the presence of cross section dependence [Working paper]. University of Southern California.

Pesaran, M. H., & Smith, R. P. (1995). Estimating long-run relationships from dynamic heterogeneous panels. Journal of Econometrics, 68(1), 79–113. https://doi.org/10.1016/0304-4076(94)01644-F

Pokharel, J. (2020). Capital market linkage to economic growth in Nepal. Westcliff International Journal of Applied Research, 1(1), 44–56.

Ragot, X. (2022). Dette optimale et dette soutenable : Un nouveau dilemme à la Triffin. Revue d'économie financière, 2022(2), 185–197.

Ragot, X., & Pinois, R. (2019). Public debt and the world financial market. Revue de l'OFCE, 161(4), 165–189.

Rajan, R. G., & Zingales, L. (2003). The great reversals: The politics of financial development in the twentieth century. Journal of Financial Economics, 69(1), 5–50. https://doi.org/10.1016/S0304-405X(02)00069-0

Reinhart, C. M., & Sbrancia, M. B. (2011). The liquidation of government debt. NBER Working Paper No. 16893. National Bureau of Economic Research. https://doi.org/10.3386/w16893

Rodrik, D. (2008). The real exchange rate and economic growth. Brookings Papers on Economic Activity, 2008(2), 365–412.

Rogoff, K. (2021). Fiscal sustainability in the aftermath of the Great Pause. Journal of Policy Modeling, 43(4), 783–793. https://doi.org/10.1016/j.jpolmod.2021.02.007

Sachs, J. D., & Warner, A. M. (1996). Achieving rapid growth in the transition economies of Central Europe. National Bureau of Economic Research.

Sachs, J. D., Warner, A., Åslund, A., & Fischer, S. (1995). Economic reform and the process of global integration. Brookings Papers on Economic Activity, 1995(1), 1–118.

Sandal, M., & Cemrek, F. (2019). Investigation of structural breaks for major stocks in the world. International Journal of Academic Research in Business and Social Sciences, 9(2), 21–36.

Schumpeter, J. A. (1934). The theory of economic development. Harvard University Press.

Sokpo, J. T., Ijirshar, V. U., Nomkuha, J. K., Bura, B. B., & Ijirshar, M. Q. (2023). Ease of doing business and investment among West African countries. African Development Review, 35(2), 97–112.

Soubeyran, C., Couppey, J., & Kalinowski, W. (2023). Quelle finance publique alternative pour réussir la transition ? L'Économie politique, 98(2), 76–86.

Summers, L. H. (1990). What is the social return to capital investment? In P. Diamond (Ed.), Growth, productivity, and unemployment: Essays in honor of Robert Solow (pp. 113–141). MIT Press.

Summers, L. H. (2015). Demand side secular stagnation. American Economic Review, 105(5), 60–65. https://doi.org/10.1257/aer.p20151103

Sy, A. N. R. (2010). Government securities markets in the West African Economic and Monetary Union: A review. African Development Review, 22(2), 292–302. https://doi.org/10.1111/j.1467-8268.2010.00238.x

Taverdet-Popiolek, N. (2013). Economic assessment of R&D with real options in the field of fast reactors taking into account uncertainty on their competitiveness: The case of France (Cahier N° 13). CEA.

Thilanka, H. R. A. C., & Ranjith, J. S. (2018). The impact of public debt on private investment: Sri Lankan experience. International Journal of Business and Social Research, 8(8), 1–10.

Thumrongvit, P., Kim, Y., & Pyun, C. S. (2013). Linking the missing market: The effect of bond markets on economic growth. International Review of Economics & Finance, 27, 529–541.

Ulucak, R. (2019). The effect of globalization on economic growth: Evidence from emerging economies. In Emerging economic models for global sustainability and social development. IGI Global. https://doi.org/10.4018/978-1-5225-5787-6.ch001

Van Wijnbergen, S., Olijslager, S., & de Vette, N. (2020). Debt sustainability when $r - g < 0$: No free lunch after all. CEPR Discussion Paper No. 15478. Centre for Economic Policy Research.

Walras, L. (1880/1992). Théorie mathématique du billet de banque. In P. Dockès et al. (Eds.), Œuvres économiques complètes (Vol. X). Economica.

Wyplosz, C., & Baldwin, R. (2019). The economics of European integration. McGraw-Hill Education.

Xie, Q., Wang, X., & Cong, X. (2020). What is the impact of foreign direct investment on CO_2 emissions in emerging countries? New evidence from nonlinear panel analysis. Journal of Cleaner Production, 249, 119422.

Yahyaoui, A., & Rahmani, A. (2009). Développement financier et croissance économique : Rôle de la qualité des institutions. Panoeconomicus, 56(3), 327–357.

Yeva, S. N., & Wray, L. R. (2011). Un excès de dette publique handicape-t-il réellement la croissance ? Revue de l'OFCE, 116(1), 173–190. https://doi.org/10.3917/reof.116.0173

Zhang, Y. J., Fan, J. L., & Chang, H. R. (2011). Impact du développement du marché boursier chinois sur la consommation d'énergie : Une analyse empirique. Energy Procedia, 5, 1927–1931.

Zhou, G., Zhu, J., & Luo, S. (2022). The impact of fintech innovation on green growth in China: Mediating effect of green finance. Ecological Economics, 193, 107308. https://doi.org/10.1016/j.ecolecon.2021.107308

Zulkhibri, M. (2015). A synthesis of theoretical and empirical research on sukuk. Borsa Istanbul Review.