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FINANCIAL STRUCTURE AND ECONOMIC GROWTH NEXUS IN EMERGING ECONOMICS IN AFRICA

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Abstract

The study investigates specifically the relationship between Gross Domestic Product (GDP), total stock market traded, market capitalization, private credit by deposit bank, human capital, foreign direct investment, population and trade openness (imports plus exports) and economic growth (GDP per capita). We use the extended endogenous growth model with specifications by employing dynamic panel data methodology. Our empirical application of the dynamic panel model to the finance–growth nexus is based on an unbalanced panel dataset of 29 middle-income African countries1 over the period 1990 – 2019 obtained from World Development Indicators. The findings revelead that financial development exerts significant and positive impacts on economic growth. The overall development of the financial system is essential for enhancing economic outcomes. Therefore, attempts at achieving some fine balance between a bank-based system and a market-based system are trivial to growth.

Keywords: financial structure; economic growth; emerging markets; markets and Africa

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INTRODUCTION

Globally, the market-versus-bank-based financial structure dichotomy is critical for financial development. Although the relationship between financial structure and economic growth has been studied for decades, little research has investigated if and how financial structure affects economic growth (Liu & Zhang, 2020). Moreover, different areas within a nation may experience varying degrees of economic growth (Liu & Zhang, 2020). Few studies have been done to assess if financial services adapt to meet the changing financial needs of the real economy at various stages of economic development (Cave, Chaudhuri, & Kumbhakar, 2020; Okechukwu et al., 2023). The composition of financial intermediaries and markets in an economy, in particular, changes over time. This implies that the financial system services are likely to change according to the economic growth stage (Chakrabarti, Sethi, & Bhattacharjee, 2019). Indeed, recent research indicates that financial structure may develop through time to support economic growth (Houshaimi, 2021; Şendeniz-Yüncü, Akdeniz, & Aydoğan, 2019). The financial structure comprises a mix of financial institutions, financial markets, and financial instruments (MacKay & Phillips, 2005). The financial system as a whole includes both bank-based and market-based intermediation. On the other hand, markets issue and trade debt and equity instruments (Alghifari, Solikin, et al., 2022), while banks perform intermediation on their balance sheets (MacKay & Phillips, 2005).

Both markets and banks boost the economy, their effects on the business cycle are very different. While the majority of empirical data indicates that financial growth has a positive long-run influence on economic growth, there is no consensus on the effect of financial structure on economic growth, both theoretically and empirically (Ibrahim & Alagidede, 2018). Some theoretical models discuss the benefits of a bank-based financial system, while others extol the benefits of a financial system that is more reliant on securities markets. Ruiz (2018) posits that the financial system as a whole performs five tasks that help reduce market frictions: resource allocation, corporate governance oversight, risk mitigation, savings mobilisation, and transaction facilitation. The four competing theories of financial structure, namely bank-based, market-based, financial services-based, and law-and-finance-based, are built around the role of banks and securities markets in delivering these financial activities.

The bank-based perspective critiques the securities market shortcomings and emphasises how banks may alleviate these shortcomings. A well-developed securities market rapidly discloses information, decreasing the motivation for individual investors to gather and evaluate data. Consequently, a mature securities market may obstruct the process of finding new enterprises that spur economic growth (Demir & Hall, 2017). Due to asymmetric information, the free-rider issue, and the covert connection between boards of directors, big shareholders, and managers, and the uncoordinated market may be inefficient at overseeing managers (Allen, Gu, & Kowalewski, 2018; Demir & Hall, 2017; Jensen, 1986). Additionally, liquid securities markets may promote narrow investment strategies, resulting in inefficient corporate governance and resource allocation (Sushko & Turner, 2018; Laskar et al., 2022).

Research using pooled country data provide conflicting results about the relationship between and economic growth. One branch of this research contends that financial structure has no bearing on economic growth; instead, they contend that financial structure influence economic growth (Demirgüç-Kunt & Levine, 2018; Houshaimi, 2021; Liu & Zhang, 2020). However, other research indicates that financial structure significantly impacts economic growth (Baum, Schäfer, & Talavera, 2011; T. Beck, Demirgüç-Kunt, & Singer, 2013). Within the latter area of literature, there is a subtle distinction. From the preceding studies, Demirgüç-Kunt and Levine (2018) posit that a market-based financial system promotes economic growth, while Baum et al. (2011) contend that a bank-based system promotes economic growth.

This paper is important as it adds to the existing empirical literature by presenting new findings through thorough panel data analysis. In addition, the research employs a dynamic heterogeneous panel estimator to the study compare our findings to the current empirical literature. The study also addresses cross-country parameter heterogeneity by explicitly testing for cross-country data portability, as highlighted by Pesaran, Schuermann, and Smith (2009). The study investigates specifically the relationship between Gross Domestic Product (GDP), total stock market traded, market capitalisation, private credit by deposit bank, human capital, foreign direct investment, population and trade openness (imports plus exports) and economic growth (GDP per capita).

Based on competing theories of financial structure, we investigate the nexus between financial structure and economic growth. These theories are bank-based, market-based, and financial services. The bank-based theory emphasises the beneficial role of banks in development and progress while simultaneously highlighting the deficiencies of market-based financial systems. It contends that banks can fund development more efficiently than markets in emerging economies. Market flaws can be overcome, and savings can be allocated strategically in the case of state-owned banks (Gerschenkron, 1962). Unrestricted banks in terms of regulations may take advantage of economies of scale and breadth in information collection and processing. Indeed, bank-based financial systems are much more capable of addressing agency problems and short-termism than market-based systems (Singh, 1997; Stiglitz, 1985). Additionally, the bank-centred perspective emphasises the flaws of market-based systems (Bakir, 2013). The latter makes information available to the public, diminishing investors' incentives to seek and acquire knowledge. As a result, information asymmetries are amplified, particularly in market-based financial systems rather than bank-based financial systems (Boyd & Prescott, 1986). Banks can mitigate the effects of asymmetric information distortions by establishing long-term relationships with companies and reducing moral hazards via monitoring. Consequently, bank-based arrangements can enhance resource allocation and corporate governance more than market-based institutions (Stiglitz, 1985).

In contrast, the market-based theory emphasises the benefits of well-functioning markets while emphasising the shortcomings of bank-based financial systems. Large, liquid, and well-functioning markets encourage growth and profit, improve corporate governance, and enable risk management (Levine, 2002). Also, the inherent inefficiencies of powerful banks are emphasised, as they can stifle innovation by extracting informational rents and shielding firms with close bank-firm ties from the competition may collude with firm managers against other creditors and obstruct efficient corporate governance (Levine, 2002). Market-based financial systems eliminate the inherent inefficiencies of banks and, as a result, are more effective in promoting economic growth and progress (Lee, 2012). Oima and Ojwang (2013) demonstrated that as nations go through various phases of

economic growth, their financial structures become increasingly market-based. Demir and Hall (2017) study on market-based financial systems in developing countries has raised concerns about asymmetric information. The argument is advanced that the intricacy of most contemporary economic and corporate activity has significantly enhanced the range of methods in which insiders might attempt to conceal company performance. While advancements in technology, accounting, and legal practice have enhanced detection techniques, the asymmetry of knowledge between consumers and sources of money has not decreased as much in developing nations as in developed economies (Demir & Hall, 2017).

The third approach, the financial services viewpoint, is truly compatible with both the bank- and market-based perspectives (Bodie & Merton, 1995; Levine, 2002). While it accepts both, it downplays their significance in the sense that the divide between bank-based and market-based financial systems is less significant than previously believed; financial services themselves are considerably more essential than the method by which they are delivered (Konings, 2008). The problem is not the source of money, according to financial services. Rather than that, it is the establishment of a climate conducive to the sound and efficient provision of financial services. The focus is on the improved bank and market functioning, not on financial structure (Qamruzzaman & Jianguo, 2017).

Simply put, this view maintains that neither banks nor markets are irrelevant; both are necessary. They are distinct components of the financial system; they do not compete and alleviate the system's various costs associated with transactions and information (Boyd & Prescott, 1986; Demirgüç-Kunt & Levine, 2004). Financial arrangements exist to mitigate market flaws and offer financial services capable of facilitating savings mobilisation and risk management, assessing possible investment possibilities, exerting corporate control, and enhancing liquidity (Demirgüç-Kunt & Levine, 2018; (Alghifari, Gunardi, et al., 2022; Suteja et al., 2023)). The financial services perspective focuses analytical attention on improving the operations of banks and markets' operations while relegating the bank-versus-market dispute to the backdrop (Levine, 2002).

Previous empirical antecedents showed that studies on financial structure and economic growth nexus are concentrated in developed economies. Studies have concentrated on comparisons between Germany and Japan, characterised by bank-based systems, and the United States and the United Kingdom, characterised by market-based systems. These studies used rigorous country-specific financial structure measures. Germany and Japan studies examine whether banks own shares or whether a company has the main bank (García-Ruiz & Vasta, 2021; Hall, Foxon, & Bolton, 2016; Hoshi, Kashyap, & Scharfstein, 1991; Zogning, 2017).

An increasing body of research provides some support for one of the competing financial theories. For instance, the findings of Ergungor (2008) corroborate the bank-based theory. Ergungor (2008) examines how financial structure influences economic growth using a pooled data set including 46 counties. The researcher discovers that the nexus between financial structure and economic growth is non-linear and observed that nations with an inflexible judicial system grow faster when they have a bank-dominated system. The findings of Baum et al. (2011), which employ firm-level data, confirm the bank-based theory. However, the empirical findings in Levine (2002) and Ndikumana (2005) support the financial services approach and give little support for either the bank- or market-based views. Liu and Zhang (2020) conducted a recent study in China, and the empirical evidence indicates that financial structure has a major effect on economic growth. The influence of financial structure on regional economic growth, on the other hand, varies and takes the form of an inverted U-shape. This is because financial services in China are concentrated in large state-owned businesses, whose productivity is commonly acknowledged to be lower than that of private enterprises.

Recent studies provide empirical evidence to support the market-based theory. Chu (2020) used a panel of 99 countries from 1971 to 2015. The findings support the market-based approach. In an earlier study, Castro, Kalatzis, and Martins-Filho (2015) used a panel data set of 404 Brazilian enterprises from 1998 to 2006 to examine the influence of the financial system on a firm's investment choices. Additionally, their findings substantially corroborate the market-based perspective. However, some other researchers failed to establish positive effects for banks or even reveal a negative association between bank development and economic growth, confirming the positive benefits of stock markets on economic growth. Thumrongvit, Kim, and Pyun (2013) opine that the stock market indicator positively correlates with economic growth, while the banking sector indicator does not. It has been shown by Peia and Roszbach (2015) that stock market development in industrialised nations increases GDP growth, whereas bank development oppositely affects GDP growth. While Jiraporn, Kim, Kim, and Kitsabunnarat (2012) claim that expansion in the stock market is favourable in high-income, low-inflation, and non-agricultural nations, growth in the financial services sector has been shown to have adverse effects.

Besides, the stock market variable has a positive impact on economic growth (without accounting for lags), while all indicators of the banking sector, private credit, domestic credit, and liquid liabilities and the bond market development indicator have a negative impact on the economy. This outcome is consistent with another recent research. While there is some evidence to suggest that banks and stock markets have a simple

linear (positive or negative) relationship with economic growth, other research shows that the link is more non-linear, country-specific and context-dependent (Chakrabarti et al., 2019; Michaelas, Chittenden, & Poutziouris, 2019). According to Shen and Lee (2006), the development and expansion of banks and the stock market have an inverse U-shaped connection. To back up their findings, (Swamy & Dharani, 2019, 2020) cite Shen and Lee (2006). However, their findings were at variance with Shen, Lee, Chen, and Xie (2011), who found that while there are no linear connections between financial system components and economic growth, the shape of non-linearity differs for banks from stock markets.

The non-linear relationship between the banking sector indicator and growth (an inverted U-shaped curve for high-income countries and upper-middle-income countries, as well as a U-shaped curve low middle-income countries) has been documented by Pham, Ramiah, Moosa, and Moyan (2018), but the stock market indicator shows no such non-linearity. Benczúr, Karagiannis, and Kvedaras (2019) postulate that bank lending has a non-linear, hump-shaped influence on economic growth after adjusting for stock market capitalisation and debt market indicators (but they do not examine whether the stock market indicator has a non-linear effect). In contrast, Cave et al. (2020) reported a non-linear model. The diverse literature makes it difficult to draw broad conclusions since various approaches are used, different nations are studied over different periods, and different metrics are used. While there is some variation in outcomes and complexities arising from non-linearity and heterogeneity, the data shows that stock market development is more beneficial for economic growth, especially in high-income nations. New research shows that "too much finance (credit)" has negative implications, which is in line with the positive impacts of bank expansion being restricted to low-income nations and environments (Xu & Gui, 2021). Based on the above empirical evidence, this current study compiles up-to-date data of emerging economies in Africa and reexamine the finance-growth nexus. Further, we contribute to the extant literature and investigate how the various component of the financial system affect economic growth.

METHOD

In our empirical application, we use the extended endogenous growth model with specifications based on North (1990). The endogenous growth theory points to the role of institutional effects in explaining economic prosperity. Our model extension builds on the Acemoglu et al.'s (2001) augmented endogenous growth model that formalises the relationship between economic prosperity and institutional quality. Our baseline econometric specification is as follows:

$$y_{it} = \mu_i + \alpha Fin_{it} + \gamma X_{it} + \varepsilon_{it}$$

where γ is economic growth (the dependent variable), Fin is the financial structure measure, X is a vector of other covariates including the lagged term of the dependent variable, μ is the time invariant country specific fixed effect and ε is the remaining error term. The coefficient of interest throughout the paper is α, the effect of financial structure on economic growth.

Our application of the dynamic panel data methodology is consistent with the finance-growth nexus literature (e.g., Beck, Georgiadis and Straub, 2014; Soedarmono, Hasan and Arsyad, 2017; Rossi and Scalise, 2021). The current period's economic growth might be affected by the previous period's growth and its related macroeconomic fundamentals as economic growth tends to vary across time. The literature argues that the finance-growth relationship can surfer from the reverse causality problem, as economic prosperity can accelerate financial development (Calderon and Liu, 2003; Ang and McKibbin, 2007). Soedarmono, Hasan and Arsyad (2017) contend that the reverse causality problem can be avoided by the application of a dynamic panel data methodology.

To estimate our dynamic panel data methodology, we follow Blundell and Bond (1998) and employ a dynamic two-step system GMM (generalised method of moment) panel estimator to allow for endogeneity. The autocorrelation tests and the Sargan test are used to test for the reliability of the system GMM estimation. An insignificant AR(2) test shows the absence of second order serial correlation between errors of the first-differenced equation while an insignificant Sargan test proves the validity of the overidentifying restrictions of the dynamic panel data model.

Our empirical application of the dynamic panel model to the finance–growth nexus is based on an unbalanced panel dataset of 29 middle-income African countries over the period 1990 - 2019. For each country, annual growth rates of real GDP in constant 2015 prices are obtained from the World Bank's World Development Indicators (WDI). Our measure of financial structure is based on the IMF's construct of the Financial Development (FD) index. The IMF's FD index takes into consideration the complex multidimensional nature of financial development. The FD index aggregates the Financial Markets (FM) index and Financial Institutions (FI) index. The FI and FM indices are further disaggregated into depth, access, and efficiency indices.

An empirical analysis of the impact of the financial system on economic growth must control for the influence of other variables that are correlated with economic growth. We consider capital accumulation (gross fixed capital formation as a ratio of GDP) as a proxy for investment, the population growth rate, openness - measured as the share of exports plus imports in GDP, inflation – measured as the annual percentage change of the Consumer Price Index. We included the lagged value of the real GDP growth as a measure of the initial income level. These variables are obtained from the WDI.

RESULTS

The data proves that the region (Africa) remains financially underdeveloped. The most financially developed economy in our sample is South Africa, which is the only country with a rating of 50 percent and above. Seven middle-income countries in our sample record a rating of less than 10 percent. The data seems to support the perception that the financial systems emerging Africa substantially lag its real economy despite a great deal of progress in recent years.

Table 1. Financial Development Indicators In Emerging Africa

	1990-1999	2000-2009	2010-2019	1990-2019
Financial Development (FD) Index	0.14	0.17	0.20	0.17
Financial Institution (FI) Index	0.21	0.25	0.30	0.26
Financial Markets (FM) Index	0.06	0.09	0.09	0.08
FI Access Index	0.09	0.11	0.20	0.13
FI Depth Index	0.12	0.14	0.17	0.14
FI Efficiency Index	0.51	0.55	0.58	0.55
FM Access Index	0.07	0.09	0.10	0.09
FM Depth Index	0.08	0.09	0.10	0.09
FM Efficiency Index	0.05	0.06	0.08	0.06

Note: This table gives the average values of the financial development indicators

Table 1 indicates that the financial system in Africa has consistently improved over time over the last three decades. Overall, the financial development index averaged 20 percent over the period 2010-2019, compared to the average value of 14 percent (1990-1999) and 17 percent (2000-2009). Capital markets have recently been gaining ground in Africa. Notwithstanding, financial institutions remain the most developed aspect of the financial system in the region. Stock and bond markets remain underdeveloped despite expanding rapidly in response to several measures including liberalisations. This raises questions regarding the financial breadth in the region. Estrada, Park and Ramayandi (2010) explain that the financial breadth provides an indication of whether a financial system has diversified from primarily banking services toward greater use of capital markets. Thus, the financial breadth is a gauge of the relative importance of banks relative to capital markets (i.e., equities and bonds).

Table 2. Summary Statistics (Mean Values: 1990 – 2019)

Country	Real GDP Growth	FD	Openness	Population Growth	Inflation	Capital
Algeria	2.71	0.12	59.44	1.80	8.81	29.76
Angola	4.03	0.11	96.50	3.41	381.42	26.16
Benin	4.66	0.10	52.82	2.98	4.18	17.79
Botswana	4.57	0.30	94.80	2.05	8.12	29.28
Cabo Verde	6.68	0.18	94.13	1.69	3.21	39.63
Cameroon	2.92	0.08	47.14	2.72	3.34	21.34
Comoros	2.66	0.04	37.14	2.52	3.19	16.53
Congo Rep.	2.02	0.07	119.21	2.84	4.22	35.23
Cote d'Ivoire	3.13	0.14	73.34	2.68	3.40	13.08
Djibouti	7.17	0.13	287.16	1.82	2.92	28.18
Egypt, Arab Rep.	4.42	0.29	48.58	2.02	10.18	19.23
Equatorial Guinea	17.38	0.09	114.23	4.01	5.10	29.28
Eswatini	3.62	0.15	120.76	1.21	7.73	16.13
Gabon	2.37	0.09	85.57	2.85	2.63	25.53
Ghana	5.47	0.11	75.54	2.50	18.95	21.09
Kenya	0.04	0.15	53.86	2.77	11.80	18.42
Lesotho	3.21	0.13	145.49	0.81	7.89	28.44
Libya	5.31	0.12	82.17	1.49	3.81	14.47
Mauritania	3.12	0.10	76.03	2.75	5.44	38.09
Mauritius	4.44	0.36	116.94	0.62	5.51	23.25
Morocco	3.82	0.26	66.66	1.35	2.50	27.68
Namibia	3.70	0.38	94.68	1.96	5.61	21.22
Nigeria	4.55	0.19	37.27	2.58	18.26	28.11
Senegal	3.66	0.09	52.96	2.68	2.53	19.78
Seychelles	3.63	0.30	147.33	1.15	4.63	29.60
South Africa	2.22	0.50	53.62	1.63	6.83	18.29
Tanzania	5.31	0.10	42.54	2.88	12.37	27.82
Tunisia	3.79	0.20	93.55	1.24	4.25	23.05
Zambia	4.34	0.09	67.21	2.75	34.08	32.04
Total	4.21	0.17	79.99	2.20	21.11	23.95

Note: Capital is gross fixed capital formation as a percentage of GDP. FD is the financial development index. The table provides mean values of the study variables over the period 1990 – 2019.

The IMF Financial Development index (FD) database ranks countries on the depth, access, and efficiency of their financial institutions and financial markets. The financial depth provides a measure of the size of the financial system relative to the size of the economy (or GDP). These consist of data on bank credit to the private sector in percent of GDP, mutual fund assets to GDP, pension fund assets to GDP, and insurance premiums, life, and non-life to GDP (for financial institutions depth index) and data on stock market capitalisation to GDP, international debt securities of government to GDP, stocks traded to GDP, and total debt securities of financial and non-financial corporations to GDP (for Financial Markets Depth index). Financial access compiles data on ATMs per 100,000 adults and bank branches per 100,000 adults (for Financial Institutions Access index) and data on the percent of market capitalisation outside of the top 10 largest companies and the total number of issuers of debt (domestic and external, nonfinancial, and financial corporations) per 100,000 adults (for Financial Markets Access index). Financial efficiency compiles data on banking sector net interest margin, non-interest income to total income, lending-deposits spread, overhead costs to total assets, return on equity and return on assets (for Financial Institutions Efficiency index) and data on stock market turnover ratio - stocks traded to capitalisation (for Financial Markets Efficiency index).

Owing to the expansion of both the banking sector and capital markets, financial access and depth in the region has increased since the 1990s. There is some variation in the extent to which the banking sector and capital markets have performed. Access to financial institutions has doubled over the period 2010-2019 compared to their levels in the 1990s. There were very modest changes in the depth, access, and efficiency of the capital markets in the subregion over the last three decades. Generally, the region has witnessed deepening, albeit modest, in their financial markets. Though both depth and access of the banking sector have improved in the region, it is the growing efficiency of financial institutions that has largely contributed to the rising importance of the banking sector relative to the capital markets. Despite the overall deepening of its financial markets, the region has witnessed no changes in its financial structure, as the banking sector remains stronger relative to the financial markets.

The results from the baseline specification which explains real GDP growth with financial development indicators and control variables are presented in Tables 3–8. Overall, the diagnostics suggest that the models are correctly specified. The control variables yield results consistent with the empirical growth literature. Trade openness and population have significant and positive signs. Inflation and capital accumulation affect growth negatively, suggesting that macroeconomic instability and a relative inadequate investment and small private sector are harmful to growth.

Table 3. Financial Development And Economic Growth

	1	2	3
Real LDP growth (t-1)	0.212***	0.206***	0.214**
	(03037)	(0.038)	(0.037)
Financial Development	40432*		
	(2.422)		
Financial Institutions		2.666	
		(2.381)	
Financiual Markets			10.781***
			(5.511)
Populations	1.059***	1.007***	1.177***
	(0.274)	(0.256)	(0.298)
Opennes	0.023***	0.025***	0.021***
	(0.006)	(0.006)	(0.007)
Inflations	-0.024***	-0.024**	-0.3024***
	(0.006)	(0.006)	(0.006)
Capital	-0.145***	-0.144***	-0.147***
	(0.007)	(0.007)	(0.007)
Obs	676	676	676
N	29	29	29
Wald (p-value)	0.00	0.00	0.00
Sargan [p-value]	26.11[0.99]	26.41[0.99]	25.28[0.99]
AR(1) test[p-value]	-3.05[0.00]	-3.06[0.00]	-3.03[0.00]
AR(2) test[p-value]	0.31[0.75]	0.29[0.77]	0.31[0.76]

Note: *** p<0.01, ** p<0.05, * p<0.1. Standard errors in parentheses.

The central question of our empirical analysis is the influence of financial development on economic growth; thus, the key variables of interest are the financial development indicators. Economic theory suggests a positive relationship between growth and finance since more robust and efficient financial systems will improve economic activities. All the financial indicators are found to have a positive effect on real GDP growth. The bank-based view of the importance of finance highlights the role of banks in reducing information asymmetries between investors and firms to improve capital allocation. Also, banks spur investments efficiency as they exploit economies of scale to mobilise more saving and efficiently manage risks. The market-based view on the other highlights the growth-enhancing role of well-functioning financial markets in financing more risky and profitable projects (Levine, 2001)

Overall, our results suggest that financial sector development plays an important role in growth and our evidence is consistent with the empirical literature. Further, we show that both the financial markets and the banking sector are beneficial for economic growth. These results may imply that the overall financial development matters for economic outcomes. Thus, emphasis on the financial structure or the relative weight of financial markets versus banks may be trivial. Deepening the entire financial system should be of greater concern to policymakers rather than an effort to achieve some balance between its different components.

Nest, we investigate how financial access, depth, and efficiency impact development outcomes. The results show that the depth and efficiency of financial institutions and financial markets correlate positively with economic growth. The evidence from our sample shows that access to financial markets improve economic growth while access to the use of financial institutions correlates negatively with economic growth. It is worth noting that firms surveyed by the World Bank's Enterprise Surveys consider access to financing as a major constraint. Indeed, the data (Table 1) shows that access to financial services remains constrained in the region. Estrada, Park and Ramayandi (2010) argue that availability of financing provides an incentive to think creatively; thus, access to financing has important effects on how technology and new knowledge are developed.

Though access to finance represent a general problem to the business front, small and medium enterprises tend to find access to financing more difficult compared to large firms. Survey data shows that across countries, less than 20% of small firms use external finance, which represents about half the rate of large firms (World Bank 2008). Physical access, limited assets or lack of collateral and documentary requirements for bank lending remain obvious barriers to access financial services. Developing more competitive banking systems may improve access of business to financial services (Estrada, Park and Ramayandi, 2010).

Table 4. Financial Development And Economic Growth (Financial Institutions Access, Depth, And Efficiency)

	1	2	3
Real GDP growth (t-1)	0.205***	0.199***	0.203***
	(0.042)	(0.017)	(0.016)
Depth	1.190		
	(2.354)		
Access		-6.276**	
		(2.623)	
Efficiency			3.406*
			(1.838)
Population	1.105**	0.693***	0.826*
	(0.369)	(0.185)	(0.475)
Openness	0.029***	0.045***	0.016***
	(0.006)	(0.002)	(0.003)
Inflation	-0.024**	-0.031***	-0.026**
	(0.008)	(0.006)	(0.009)
Capital	-0.141***	-0.139***	-0.151***
	(0.042)	(0.007)	(0.006)
Obs	676	676	676
N	29	29	29
Wald (p-value)	0.00	0.00	0.00
Sargan [p-value]	25.82[0.99]	27.73[0.99]	26.29[0.99]
AR(1) test[p-value]	-3.09[0.00]	-3.18[0.00]	-3.11[0.00]
AR(2) test[p-value]	0.31[0.75]	0.29[0.77]	0.26[0.79]

Note: *** p<0.01, ** p<0.05, * p<0.1. Standard errors in parentheses.

Table 5. Financial Development And Economic Growth (Financial Markets Access, Depth, And Efficiency)

	1	2	3
Real GDP growth (t-1)	0.196***	0.198***	0.208***
	(0.033)	(0.035)	(0.044)
Depth	6.663*		
	(3.436)		
Access		5.265	
		(3.878)	
Efficiency			3.179
			(2.961)
Population	0.808***	0.980***	1.076***
	(0.153)	(0.140)	(0.307)
Openness	0.026***	0.028***	0.031***
	(0.006)	(0.005)	(0.002)
Inflation	-0.027***	-0.024***	-0.031***
	(0.006)	(0.006)	(0.009)
Capital	-0.142***	-0.144***	-0.145***
	(0.008)	(0.006)	(0.009)
Obs	676	676	676
N	29	29	29
Wald (p-value)	0.00	0.00	0.00
Sargan [p-value]	26.41[0.99]	26.91[0.99]	26.37[0.99]
AR(1) test[p-value]	-3.03[0.00]	-3.05[0.00]	-3.08[0.00]
AR(2) test[p-value]	0.28[0.78]	0.28[0.78]	0.30[0.76]

Note: *** p<0.01, ** p<0.05, * p<0.1. Standard errors in parentheses.

By way of further sensitivity, we examine whether there has been a change in the effect of finance on growth in emerging Africa over the period. We estimate equation (1) for a 10-year interval over the last three decades. The regression results are presented in Tables 6-8. The evidence indicates the presence of a positive relationship for emerging Africa in the 1990s, but the relationship has weakened over the last two decades as the correlations have turned very weak or even negative. On the face of it, this finding would suggest that financial development matters less for growth in the last two decades. This finding is consistent with the findings of Estrada, Park and Ramayandi (2010) for developing Asia.

However, this result may not necessarily reflect a weakened contribution of financial development to economic growth since the 2000s. One possible explanation is that the banking system's soundness and efficiency in the region may have improved over the last two decades as the banks have adjusted to correct possible overinvestment and over-lending in the 1990s. Indeed, the evidence (Table 7) shows that financial efficiency has consistently exerted a positive impact on economic growth. Estrada, Park and Ramayandi (2010) intimate that notwithstanding the reduction or stagnation of bank credit, banks have improved risk management and have adopted more accurate pricing of risk signals.

The weakening finance-growth relationship over time may suggest that the primary contribution of financial development to growth is not through fostering efficiency and productivity but rather through mobilisation of savings for investment and capital accumulation. The marked decline in the contribution of financial development to economic growth may also highlight the fact that the returns to investment financed through the financial development processes that mobilise large quantities of savings tend to be high at lower-income levels but falls as the country accumulates a larger stock of capital over time. The weakening finance-growth nexus may signal the failure to shift to a growth path based on productivity gains from growth based on inputs and factor accumulation in the region. The likelihood for overinvestments is high when very high investment rates are maintained for an economy that has already built up a large stock of capital (Estrada, Park and Ramayandi, 2010).

For low-income countries, a financial system that primarily accumulates capital and mobilises savings for investment contributes the most to economic progress. However, as the economy progresses, the financial system should accelerate static and dynamic efficiency improvements to enhance economic growth. Over time, the growth improving abilities of financial development primarily shift to augmenting the efficiency of investment from enhancing the quantum of investment. Thus, for the financial system to be consistently growth-enhancing, it must evolve along with a country's overall development level (Estrada, Park and Ramayandi, 2010). The weakening finance-growth relationship may suggest that this evolution has been incomplete in emerging Africa in the last two decades. For low-income countries and developing Africa where capital accumulation and high investment still matter for growth, the relative importance of mobilising savings for investment will remain important.

Table 7. The Finance-Growth Nexus Over Time (Financial Institutions Access, Depth, And Efficiency)

	1990 – 1999			2000 – 2009			2010 – 2019		
	1	2	3	4	5	6	7	8	9
Real GDP growth	-0.162***	-0.170***	-0.158***	0.298***	0.306***	0.312***	0.219***	0.291***	0.208***
(t-1)	(0.021	(0.022	(0.023)	(0.037)	(0.033)	(0.010)	(0.012)	(0.015)	(0.011)
Financial	11.869***			-6.707**			3.787***		
Development				(3.201)			(1.108)		
Financial		12.746***			-10.094**			0.016	
Institutions		(3.291)			(2.653)			(1.844)	
Financial Markets			6.781			3.954**			-4.847***
			(5.368)			(1.804)			(0.986)
Population	0.289	0.413	0.222	2.424***	2.223***	2.664***	-0.167	-0.413	-0.090
	(0.236)	(0.255)	(0.282)	(0.267)	(0.286)	(0.159)	(0.107)	(0.405)	(0.154)
Openness	0.061***	0.054***	0.073***	0.032***	0.042***	0.017***	0.029***	0.024***	0.025***
	(0.014)	(0.009)	(0.015)	(0.006)	(0.009)	(0.004)	(0.004)	(0.006)	(0.005)
Inflation	-0.037***	-0.038***	-0.037***	-0.072***	-0.078***	-0.058***	-0.085***	-0.074**	-0.093***
	(0.009)	(0.010)	(0.010)	(0.022)	(0.021)	(0.009	(0.008	(0.015)	(0.009
Capital	-0.131***	-0.129***	-0.123***	-0.291***	-0.273***	-0.332***	-0.069***	-0.051***	-0.075***
	(0.008)	(0.008)	(0.009)	(0.028)	(0.033)	(0.019)	(0.009)	(0.007)	(0.009)
Obs	176	176	176	222	222	222	230	230	230
N	29	29	29	29	29	29	29	29	290
Wald (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargan [p-value]	14.35[0.49]	10.28[0.80]	16.09[0.37]	19.04[0.21]	21.27[0.13]	21.39[0.50]	23.24[0.39]	24.98[0.98]	23.27[0.39]
AR(1) test[p-value]	-1.34[0.00]	-1.30[0.00]	-1.37[0.00]	-2.95[0.00]	-2.99[0.00]	-2.92[0.00]	-2.36[0.01]	-2.31[0.02]	-2.33[0.01]
AR(2) test[p-value]	0.29[0.75]	0.23[0.82]	0.32[0.75]	1.22[0.22]	1.19[0.23]	1.24[0.21]	1.25[0.21]	1.31[0.19]	1.23[0.22]

Note: *** p<0.01, ** p<0.05, * p<0.1. Standard errors in parentheses

Table 8. The Finance-Growth Nexus Over Time (Financial Markets Access, Depth, And Efficiency)

	1990 – 1999			2000 – 2009			2010 – 2019		
	1	2	3	4	5	6	7	8	9
Real GDP growth	-0.157***	-0.152***	-0.138***	0.289***	0.259***	0.305***	0.150***	0.202***	0.236***
(t-1)	(0.021)	(0.025)	(0.022)	(0.043)	(0.038)	(0.038)	(0.039)	(0.009)	(0.006)
Depth	9.245**			--9.339***			-9.495**		
	(3.039)			(2.121)			(4.444)		
Access		9.978**			-16.883**			-5.919***	
		(4.192)			(2.257)			(1.213)	
Efficiency			6.992***			1.678			4.722***
			(1.249)			(1.853)			(0.634)
Population	0.349	0.527*	-0.349	2.495***	1.879***	2.429***	-0.428	-0.097	-0.562**
	(0.331)	(0.271)	(0.284)	(0.262)	(0.193)	(0.277)	(0.454)	(0.106)	(0.050)
Openness	0.067***	0.069***	0.064***	0.031***	0.062***	0.015**	0.033**	0.030***	0.011***
	(0.015)	(0.011)	(0.007)	(0.009)	(0.007)	(0.007	(0.013)	(0.005)	(0.003)
Inflation	0.032**	-0.039***	-0.046***	-0.070***	-0.082***	-0.071***	-0.041***	-0.086***	-0.118***
	(0.012)	(0.008)	(0.009)	(0.023)	(2.257)	(0.019)	(0.015)	(0.009)	(0.009)
Capital	-0.124***	-0.127***	-0.136***	-0.271***	-0.292***	-0.307***	-0.058***	-0.074***	-0.078***
	(0.009)	(0.010)	(0.008)	(0.032)	(0.029)	(0.025)	(0.014)	(0.003)	(0.003)
Obs	176	176	176	222	222	222	230	230	230
N	29	29	29	29	29	29	29	29	29
Wald (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargan [p-value]	14.95[0.45]	13.78[0.54]	9.96[0.82]	21.03[0.14]	19.30[0.20]	18.79[0.22]	15.75[0.40]	22.15[0.45]	24.79[0.31]
AR(1) test[p-value]	-1.33[0.00]	-1.38[0.00]	-1.47[0.00]	-3.05[0.00]	-2.96[0.00]	-2.97[0.00]	-2.36[0.02]	-2.37[0.02]	-2.32[0.02]
AR(2) test[p-value]	0.31[0.75]	0.32[0.75]	0.31[0.75]	1.26[0.21]	1.10[0.27]	1.26[0.21]	1.16[0.24]	1.26[0.21]	1.27[0.20]

Note: *** p<0.01, ** p<0.05, * p<0.1. Standard errors in parentheses

DISCUSSION

The growth improving tendencies of financial development is widely discussed in the literature. This current contribution revisits the finance-growth nexus and examines the impacts of the various components of the financial system on economic growth.

The analysis shows that in Africa, both the capital markets and the banking sector have been important in the deepening of the financial sector. The region has witnessed no changes in its financial structure, still, the financial sectors in the region are dominated by the banking sector. Thus, while Africa has experienced substantial financial deepening, this deepening has been driven primarily by the expansion of the banking sector. While the region's financial markets have risen steadily, much needs to be done to develop the lagging capital market. The financial markets' access, depth, and efficiency remained restrained, reinforcing the need to strengthen and diversify the region's financial system.

Our empirical analysis produces two important results relevant to emerging Africa. First, financial development exerts significant and positive impacts on economic growth. The overall development of the financial system is essential for enhancing economic outcomes. Therefore, attempts at achieving some fine balance between a bank-based system and a market-based system are trivial to growth. Second, we find that there seems to have been a sharp drop-off in the effect of finance on growth in the last two decades. On its face, the weakening finance-growth nexus may suggest that financial development matters less for growth in emerging Africa since the advent of the 20th millennium. However, this structural change may reflect a reversion of over-lending and overinvestment from the 1990s to more optimal levels of lending and investment.

The results of this study reemphasize the importance of financial stability for growth. Therefore, policy towards enhancing financial stability should be consciously and effectively implemented. The policy front in emerging Africa should endeavour to accelerate the development of the region's relatively less developed financial markets. A well-functioning capital market serves as a source of patient and secure source of long-term capital for investment. Also, there is a need to improve the institutional infrastructure of the financial system across the region. Macro-prudential policies are also critical. In the quest to champion financial innovation, prudential regulation and supervision authorities in Africa should seek to ensure that new financial services, products, and technologies are secure and operate at the best standards, including speed and scope. It is important that regulators are swift to identify and control the risks stemming from financial innovations.

CONCLUSION

The study's findings highlight the significance of financial stability for growth. Therefore, it can be concluded that policy towards enhancing financial stability should be consciously and effectively implemented. The rising African policy front should work to hasten the growth of the region's relatively underdeveloped financial markets. A healthy capital market offers investors a patient, safe source of long-term funding for investments. Additionally, the regional financial system's institutional architecture has to be improved. Policies involving macro prudence are equally crucial. Prudential regulation and supervision bodies in Africa should work to ensure that new financial services, products, and technologies operate at the highest standards, including speed and scope, in order to support financial innovation. Regulators must act quickly to recognize and manage the dangers brought on by financial innovations.

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