THE IMPACT OF FINANCIAL DEVELOPMENT ON ECONOMIC GROWTH: EMPIRICAL EVIDENCE FROM SELECTED DEVELOPING COUNTRIES

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ABSTRACT

Financial development and economic growth are among central themes of current macroeconomic literature, the relationship between the two-remaining ambiguous, especially in developing countries with horrendously inefficient financial institutions. This study has analyzed the effect of financial development on economic growth in selected developing countries during the period from 2000 to 2022. The techniques of the GMM are employed in this paper using some domestic credit given to the private sector (DCPS) and broad money (M3) as pro-transform economies for measuring financial development along with the control variables such as population growth, human capital, government expenditure, and private investment. The results of the study show that both DCPS and M3 have a significant and positive effect on growth, but even this impact is stronger for DCPS. The results indicate that in fostering sustainable growth, the utmost importance is actually given to efficient credit allocation as well as deeper financial intermediation. The study emphasizes that inclusive financial systems as well as expansionary monetary policies are important for enhancing access to credit and stimulating investment in developing economies.

Keywords: Financial Development; Economic Growth; Generalised Method of Moments; Developing Countries

Submitted: 18/11/2025 *Accepted: 15/12/2025* *Published: 26/12/2025*

INTRODUCTION

Financial development and economic growth are those related concepts that have been widely studied in economics. So, financial development is essentially a higher skill and

sophistication in the way finance is handled in a country. Such an increase includes developments within financial markets, financial institutions, and financial regulations. Financial depth or, alternatively put, financial intermediation and financial development implies a wide availability of a range of services, optimized for varying financial needs. In literary works, these terms are used interchangeably. It is thought that there are two main macroeconomic ways through which financial development affects economic growth. Expanding resources is the main goal (McKinnon, 1974). In addition, it guarantees that intermediation offers the best potential return on investment. It is, therefore, impossible to undervalue the importance of financial development to the strength and stability of an economy. The financial sector, according to some economists, is really important since a strong one can attract and mobilise foreign capital and subsequently optimise the process of allocation of resources and attract financial resources for investment either in foreign or domestic projects. An efficient financial system will allocate resources in an effective manner, mobilise savings from individuals and households, provide funds for productive investments, and let the flow of investment resources among individuals holding savings to those with the best investment ideas.

The development of finance-includes establishing financial institutions, markets, and instruments, without which economic growth cannot occur-and the sound theory is that there is a relation from financial development to economic growth. That is, a more developed financial sector would offer greater access to credit and other relevant financial services that would create a demand for business and investment growth. In turn, business and investment activities would generate employment and stimulate greater economic growth. According to the study of Levine (1997), it is being said that improved allocation of resources and capital accumulation efficiency, that is, bringing the same in amounts would cause a positive impact on the economy with financial development. However, it does not perfectly hold for Karlsson et al. (2021) with regard to financial development in the context of economic growth. Nevertheless, if financial development is engendered through unregulated processes, it may lead to higher income inequality. In addition, a poorly regulated financial sector would breed financial instability and thereby negatively affect economic growth. Therefore, policymakers should strive to achieve a good balance between the development of the financial sector and other policies interested in ensuring inclusive growth. Development of the financial sector can be defined as development of the financial system which comprises markets, institutions, and financing instruments: financial development is thus the other half of economics that finalizes its true composition. So today, the financial sector could also be seen as the foundation of the whole economic system in a globalized world. The influence of a more intense and deeper financial sector on macroeconomic factors like employment and economic growth must thus be experimentally investigated, both positively and negatively. Figure 1 shows only two developing countries, China and Thailand, which are included in the top twenty countries according to their effectiveness of financial development (financial institutions and financial market) in 2020. This finding shows that developing countries are falling behind rich countries and must improve and restructure their financial system (institution and market) to catch up.

For economic development, the development of relevant social, cultural, and economic mechanisms is made essential. Strong financial markets are considered one of these mechanisms in the economic field. It is strong financial institutions that create good financial markets. Functions performed by the financial system include mobilizing savings, monitoring investments, facilitating the exchange of goods and services, researching investment opportunities, and so on. This will decrease transaction cost, enhance allocation of resources, and in turn, trigger economic growth. Any country's real sector and financial sector must be effective, reliable, and closely supervised for the economy to operate at its best. These two

sectors must cooperate if any economic system is to be successful. Failure in one section would have a negative impact on the other.

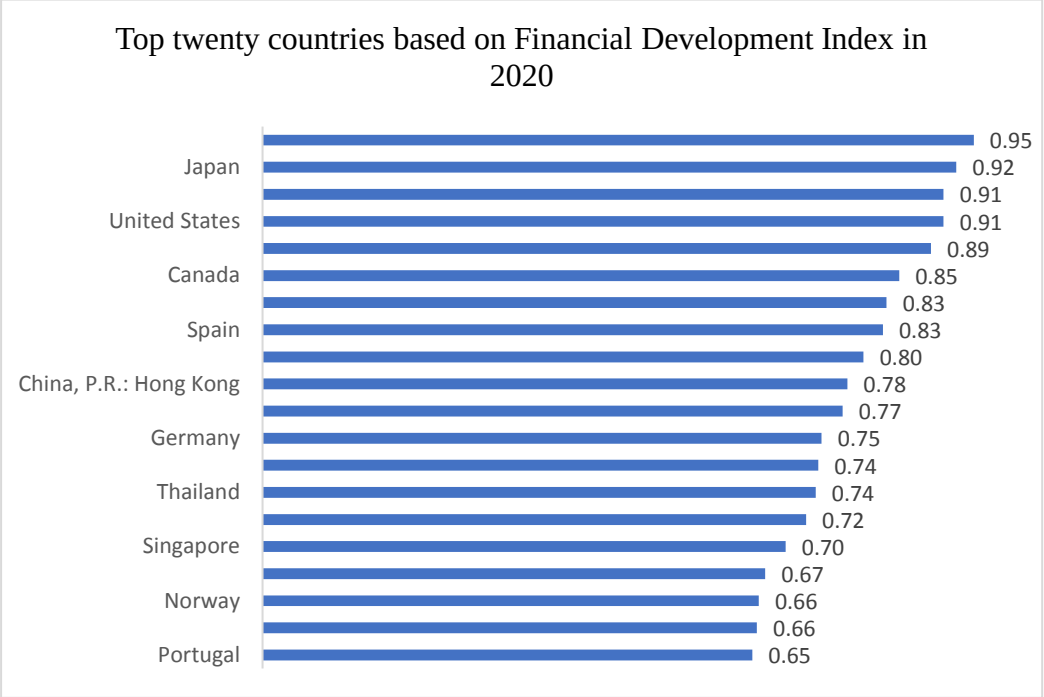

Figure 1: Top twenty countries of financial development index in 2020
Source: International Monetary Fund Database

Thus, the long-term stability of the system is established whenever there is effective cooperation between the two sectors in a well-balanced manner. Economic growth has, therefore, been regarded as primarily an offspring of financial development. As Levine (1997) argues A sound financial system in a country may lead to an efficient allocation of resources through lower transaction costs, accessibility to financial institutions, facilitating trade and exchange of goods. Conversely, an inefficient financial system tends to increase costs, bring discouragement to investment, reduce output, and curtail employment. In this regard, it tends to slow down the economy eventually (Shrestha, 2005).

Financial development theory posits that financial institutions and markets play a central role in mobilizing savings and allocating them efficiently to productive investments, thereby fostering employment creation and output growth. Consequently, sustained economic growth depends on the continuous development of a modern, efficient, and institutionally robust financial system capable of supporting capital accumulation and productive activity across generations (King & Levine, 1993; Levine, 1997). Empirical studies demonstrate that in countries with weak or underdeveloped financial sectors, financial resources are inefficiently allocated, leading to misallocation of capital and lower economic performance, primarily due to high information asymmetries and weak institutional quality (Levine, 1997; Beck, Levine, & Loayza, 2000). Occasionally, countries struggle to mobilize sufficient resources due to the absence or underdevelopment of financial instruments, which constrains savings mobilization and limits access to credit for productive investment (McKinnon, 1973; Shaw, 1973). For a nation to experience accelerated and uninterrupted economic growth, it must see its financial sector develop. The countries with relatively strong financial systems would move faster down the road of economic development as their systems would enable other countries to attain economic progress (McKinnon, 1973; Shaw, 1973). At the macro-level, commodity markets,

labor markets, money markets, and capital markets are the basis of a market-oriented system. Nowadays, within the whole financial sector of each country, money market and capital market are usually treated as two separate things. Political and economic stability is what every country aspires for, and building a financial market, to this modern community will be one way to achieve that.

The financial development contributes to economic growth, income growth, poverty alleviation, and, therefore, to economic development. The financial development has been regarded as primarily responsible for economic progress. Levine (1997) claims that a strong financial system in a country is able to channel resources from savings into investment efficiently by cutting down on transaction costs, providing access to financial institutions, enabling trading, and the movement of goods. Some of the earlier empirical studies entrenched the essence of the relationship between financial development and economic growth concerning developing countries (Wen et al., 2021; Guru & Yadav, 2019).The economic development is mostly explained by the financial development as an important factor for long-term economic growth; however, a few developing countries manage to do much more with their financial systems compared to many others within the wealthier countries. Thus, financial development and economic growth are two closely correlated and hence vital factors when assessing the economic welfare of any given country. Economic growth is possible with a well-developed financial sector, yet policymakers must understand the potential threats to it and the necessary counter-risk measures to be taken. Thus, the research seeks to determine the impact of financial development on economic growth, taking into account factors such as population growth, human capital, private investment, and government expenditure in developing countries. This would provide timely and relevant empirical evidence to assist policymakers in striking an appropriate balance between financial sector development and the necessary regulatory frameworks aimed at achieving steady and inclusive sustained economic growth.

After this introduction, Section 2 surveys theoretical and empirical contributions regarding the links between financial development and economic growth. In Section 3, model specification, data, and methodological framework are discussed. Section 4 profiles an analysis of the empirical results and discusses their implications for developing economies. Section 5 concludes the study with a review of its major findings and implications for various policies.

LITERARTURE REVIEW

Financial development can positively influence the economic growth through several channels, which is in accordance with economic theory and empirical evidence. The association is thoroughly examined, focusing on the depth and structure of the financial system. Financial depth is the total liquid liabilities to GDP, bank credit to GDP, or stock market capitalisation to GDP, whereas King and Levine in 1993 show that Beck, Demirgüç-Kunt, and Levine in 2008 included the ratio of all three in assessing financial depth. Financial depth, therefore, seems to indicate a significantly greater contribution to economic growth than the importance of relative weights of financial structures, for example, banks versus capital markets.

The specific advancements in stock markets and banking systems equally affect the economy. Another apparently positive measure is moving from bank-based to market-based systems, but not every time do market-based systems outperform bank-based ones. In general, the level of advancement attained by financial development is simply vital for the economy's performance. Demirgüç-Kunt and Levine in empirical works agreed on the classification of studies as follows: cross-country regressions, panel data, microeconomic studies, and

individual case studies for countries. More than a few of these studies, as Levine states, uphold the positive relationship between financial development and economic growth. Well-developed financial systems lessen capital cost, which therefore makes better allocation and generates an incentive for innovation.

According to a study by Chilizani and Gregory (2024), the findings indicated the presence of a two-way causative relationship between financial development and economic growth in the SADC region. The results further indicated that there are long-term positive relationships between financial development and economic growth but are likely to have different short-term effects through which government expenditure and physical capital accumulation exert significant influences. Trade openness, life expectancy, and population growth were also found to exert influences on the economic growth of the SADC region and hence reflect the more complex dynamics of development.

In several countries, Hasan, Aydın, and Okuyan (2022) put forth that a reciprocal relationship exists between economic growth and financial development. Financial development is considered to be preceded by economic growth in that an expanding economy is a catalyst for developing its financial system. Financial development also vis-à-vis engenders further economic growth, establishing the other part of the twain-the evolution of the financial sector engendering economic enlargement (Hasan, Aydın, and Okuyan, 2022). The study by Nimra et al. (2024) contends that financial development is a crucial determinant of economic growth, highlighting tools such as banking sector depth, private sector credit expansion, capital market development, and efficient financial intermediation. They further emphasize that a smoothly functioning financial system leverages these tools to propel the economy toward higher levels of growth. They expressed the viewpoint that financial development causes economic growth in Pakistan. They, however, established that foreign direct investment together with personal remittances display an adverse relationship to GDP growth.

However, in contrast with highly industrialized countries, the finance-growth relationship within developing countries is much less straightforward. Beck, Demirgüç Kunt, and Levine's (2000) early foundational work shows that financial development in developing economies is likely to have weaker impacts on economic growth primarily due to the inefficiencies manifested in the financial institutions themselves. On top of that, while conventional indicators such as bank loan to GDP ratios fail to show the real performance of financial systems during boom periods, many ongoing empirical studies rely on these indicators (Rajan & Zingales, 1998; Levine & Zervos, 1998; Demirgüç Kunt & Levine, 2008). This apparent contradiction suggests that while financial development is theoretically expected to promote growth, the quality, inclusiveness, and institutional soundness of financial systems are equally critical; relying solely on aggregate quantitative indicators may thus overstate or misrepresent the growth-enhancing effects of finance in developing countries, highlighting the need for more nuanced and context-specific measures of financial development.

Increased financial development may be argued to affect less economic growth in developing economies than in developed economies, according to the early foundational work of Beck, Demirgüç Kunt, and Levine (2000). The early foundational work of Beck Demirgüç Kunt and Levine indicated that financial development exerted a weaker effect of economic growth in developing economies mainly due to inefficiencies manifested in the financial institutions themselves. Further, bank loan to GDP ratios, the traditional indicators of financial performance, have failed to exhibit the real performance of financial systems in booms, though many empirical studies continue to use these proxies (Rajan and Zingales 1998; Levine and Zervos 1998: Demirgüç Kunt and Levine 2008). Furthermore, La Porta et al. (2001) showed that greater public ownership of banks is associated with slower economic growth and financial underdevelopment, thus indicating the importance of institutional effectiveness in financing

led economic development. Such literature, however, has received criticism due to reliance on simple cross-country regressions, which may yield biased and inconsistent estimates owing to endogeneity and measurement bias, with instrumental variable approaches possessing their own limitations in addressing these issues completely.

More recent empirical evidence continues to reinforce the view that institutional quality crucially shapes the finance–growth nexus in developing settings. For example, Nguyen (2025) studied 84 middle-income countries from 2004 to 2022 and found that financial development was significantly enhanced only when human capital was combined with strong institutional quality whereas enhancements in financial depth alone (e.g., credit/GDP) did not reliably translate into growth. Further, Mbulawa and Chingoiro (2024) showed for low income and middle-income countries in sub-Saharan Africa that institutional quality plays a more significant boost to growth when interacting with financial development, thereby indicating that credit based financial indicators are contingent on governance and institutional frameworks. These findings reaffirm that in developing contexts, simply increasing bank loans to GDP or other credit-based measures of finance does not guarantee growth: efficient institutions, governance frameworks and institutional controls are essential and econometric approaches must explicitly address endogeneity and the heterogeneity of measurement.

Nevertheless, this branch of research continues to face intensified critiques regarding its assumptions about causality and econometric methodology. Pure cross-country regressions may yield biased or inconsistent estimates due to endogeneity and omitted variables. Although researchers often refer to instrumental variable methods to correct for such biases, it is often the case that these instruments may be weak or invalid for the purpose in question, and in many developing-country settings institutional heterogeneity does much to cloud identification. The newest literature corroborates that. In a similar vein, Lisbinski (2024) shows that institutional conditions do matter for the level of financial development across economies, thus implying that failure to consider institutional endogeneity may misstate the finance-growth nexus. With this insight, we can understand that there is a need for a more sophisticated modelling approach incorporating institutional variables, nonlinearities, and greater rigour on the identification question in relation to the analysis of developing countries.

There is strong evidence that economic growth is positively influenced by financial development, but the intensity and direction of such movement are highly dependent on the efficiency of financial institutions, regional heterogeneity and income structures. Often, empirical findings in this respect are inconclusive based on methodological shortcomings or endogeneity problems; besides, conventional indicators of finance may not adequately reflect real institutional circumstances in developing countries. These shortcomings clearly demonstrate that there is an urgency for more rigorous, context-based, and methodologically robust research efforts. Therefore, this study will be required to furnish fresh empirical evidence using up-to-date econometric methodologies capable of overcoming the causality and heterogeneity challenges, thus providing much clearer insights into how financial development influences economic growth dynamics in developing countries.

METHODOLOGY

The Generalized Method of Moments (GMM) model is used in the study to look the impact of financial development on economic growth in selected 96 developing countries from 125 developing countries as reported in WESP (2023) from various regions such as Africa, Asia, and Latin America and the Carribean, such as while controlling for population growth, human capital, private investment, and government expenditure. This method may examine dynamic

interactions between variables throughout time, making it particularly relevant for time series data. The study looks at data analysis from 2000 to 2022 in selected developing countries. To ensure data accuracy and consistency, trustworthy sources were used, such as World Economic Situation and Prospects (WESP) and World Development Indicator.

Hence, only decided developing countries were selected because these had complete and continuous datasets with respect to all the variables that made the analysis valid and reliable. The dependant variable of this study is Economic Growth measured by Gross Domestic Product (GDP) at constant pricing. It is a generally accepted economic performance indicator that presents a per capita measure of national productivity, which shows how well a country is functioning economically on an individual level (Barro, 1991).There is one independent variable following with four control variables used. Financial development as independent variable Therefore, analysing financial growth using a single indicator is impossible, and there is no universal agreement on which proxy is the best measure of financial development. For this study, proxies for financial depth were chosen due to their common use in literature and the availability of data spanning from the 1960s. Two proxies, domestic credit to the private sector and broad money, were selected to allow for robustness testing to ascertain whether consistent results could be achieved using different proxies.

The first of those proxies, domestic credit to private sector, simply refers to the financial resources flowing to the private sector by financial corporations, i.e. loans, purchase of non-equity securities, trade credits, and receivables, which establish a claim of repayment (Beck et al., 2000). It is calculated by the total value of credit by financial institutions to the private sector divided by GDP (Beck et al., 2000). The second proxy is money supply-broad money. The money supply consists of all currency and liquid instrument in the economy. Broad money is the more comprehensive definition of money supply, which includes currency notes and coins as well as other less liquid forms of money such as savings accounts, treasury bills, and government bonds considered "near money" because they can easily be converted to cash.

It's well known that the economy's money supply forms the policy tool in that it allows the government to increase or decrease the amount of money in circulation in the economy. Growth in population as a control variable could have adverse or positive implications for economic growth. According to Muharromy and Auwalin (2021), growth in population would be accepted as increasing demand and hence production levels and national income, which would positively impact economic growth. However, school enrolment serves as the proxy for human capital development (Mifrahi and Rahmat, 2022; Evans et al., 2002; Sarwar et al., 2021; Sethi et al., 2019; Abubakar et al., 2015). The evidence shows that both primary and higher education enrolments play a positive role in economic growth, while the return is highest for postgraduate education (Tolliver et al., 2022).

Government spending includes huge amounts in general government final consumption expenditures that also include investment, transfer payments, and consumption (Ceesay et al., 2022). In many countries, these constitute an important factor in giving impetus to economic growth. Last but not least, private investment plays an equally pertinent role, both in supporting increasingly public investment initiatives and exerting a significant influence in the long run on economic growth. The data collected for this project have been sourced from the World Development Indicator and World Economic Situation and Prospects (WESP).

Table 1: Developing countries by regions

Region
Africa,
Asia,
Latin America and the Carribean

Sources: World Economic Situation and Prospects, 2023

Based on Table 1 For the purpose of analyzing the effects of financial development on economic growth in selected developing countries, this study has adopted a model similar to those used by other researchers (De Mello, 1997; Ramirez, 2000, and Fedderke and Romm, 2006). The externality attributable to financial development is modeled as follows:

$$Y = Af[L, K_P, E] = AL^{\alpha} K_P^{\beta} E^{(1-\alpha-\beta)} \quad (1)$$

In which real output Y, domestic capital stock K_P, labor L and E denotes externalities from the financial development. A denotes productivity efficiency, α and β capturing respective shares of labor and capital. It is assumed that α + β < 1 and E is assumed to conform to a Cobb Douglas function.

In fact, the model that assesses the effect of financial development on economic growth in developing countries is based on Levine, Loayza, and Beck (2000); Beck, Levine, and Loayza (2000); Abubakar, Kassim, and Yusoff (2015) and Hassan, Sanchez and Yu (2011). The model may be expressed as follows:

$$Y_{it} = \alpha Y_{i,t-1} + \beta_1 DCPS_{it} + \beta_2 M3_{it} + \beta_{3i} PG_{it} + \beta_{4i} HC_{it} + \beta_{5i} GE_{it} + \beta_{6i} PI_{it} + \mu i + \epsilon_{it} \quad (2)$$

Where Y is GDP, $D\ CPS$ is domestic credit to private sector, $M3$ is broad money, PG is population growth, HC is human capital, GE is government expenditure, PI is private investment, μi is unobserved country-specific effect term, ϵit is the usual error term, i is country index and t is time index.

Further estimation of equation (2) by using the Generalised Method of Moment (GMM) is that this method has the capacity to account for non-linearities and add lagged moment conditions, makings it particularly well-suited for handling time-series data. Instrument validity is critical for ensuring the consistency and efficiency of parameter estimations. The GMM (D-GMM) and System GMM (S-GMM) tests and strategies for determining instrument validity will be observed.

RESULT AND DISCUSSION

Generalized Method of Moments (GMM) Estimation Results

The differential Generalized Method of Moments (GMM) as well as the system GMM estimators helped to derive equation (2) to examine the effect of financial development (DCPS and M3) on economic growth (GDP) in developing countries. These findings are tabulated in Table 2.

Table 2: Results of difference between GMM and system GMM

	Difference GMM		System GMM	
	i	ii	iii	iv
Variable	**One-Step**	**Two-step**	**One-Step**	**Two-step**
Constant	1.1997***	1.1957***	1.0200**	1.0720***
	(0.1124)	(0.0342)	(0.0135)	(0.0018)
Lag Y	0.8748***	0.8750***	0.9923***	0.9683***
	(0.0123)	(0.0034)	(0.0059)	(0.0007)
DCPS	0.0298***	0.0294***	0.0244***	0.0565***
	(0.0081)	(0.0007)	(0.0004)	(0.0004)
M3	0.0231**	0.0222***	0.0144***	0.0128***
	(0.0112)	(0.0011)	(0.0004)	(0.0007)
PG	0.0049**	0.0050***	0.0047***	0.0061***
	(0.0020)	(0.0003)	(0.0001)	(0.0002)
HC	0.0067***	0.0069***	0.0033***	0.0019***
	(0.0203)	(0.0024)	(0.0009)	(0.0001)
GE	0.0023**	0.0023***	0.0062***	0.0072***
	(0.0092)	(0.0010)	(0.0008)	(0.0001)
PI	0.0019***	0.0019***	0.0035***	0.0037***
	(0.0066)	(0.0003)	(0.0004)	(0.0008)
Sargan Test	28.4751	23.6092	22.1462	23.7715
	(0.2253)	(0.2536)	(0.2653)	(0.2815)
AR (1)	-	-1.4756	-	-2.0303
		(0.1401)		(0.0423)
AR (2)	-	0.0997	-	0.0300
		(0.9206)		(0.7635)
N	96			

Notes: Y= GDP, DCPS= Domestic Credit to Private Sector, M3 = Broad money (M3), PG = population growth, HC = Human Capital, GE = Government Expenditure, PI = Private Investment. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Value in paratheses is a standard error except for the Sargan test and AR (2) which are p-values. All data are in logarithmic form.

Starting with the one-step estimation Difference GMM result [see columns (i) of Table 1 the lagged dependent variable (Lag Y) indicates positive and significant at a 1 percent significant level indicating that the GDP has positive effected the current GDP period. The coefficient of the research's interest DCPS and M3 (indicator of financial development) indicated positive values. The coefficient values of the DCPS and the M3 were $\beta = 0.0298$, $\rho < 0.01$ and $\beta = 0.0231$ $\rho < 0.05$ respectively. The results indicate that as 1 percent increase in DCSP cause 2.98 percent increase in economic growth (GDP) and increase 1 percent in M3 cause to increase 2.31 percent on economic growth (GDP).

This means that an increase in DCPS results in an increase in the dependent variable, which is GDP. When private businesses have better access to finance, they can invest more in expansion, innovation, and productivity improvements so stimulating economic growth. The availability of credit to private firms, measured by DCPS, is most essential for their operations and also growth. DCPS can reflect the health of the financial sector and its capacity to promote private sector growth. Policies that lead toward an efficient and accessible credit market for private enterprises can strengthen the role of DCPS in economic growth. This is consistent with previous findings. This finding is again corroborated by studies carried out in Nigeria, countries

of the European Union, and that of Gambia. Nigeria has recorded an increase in the supply of credit to the private sector, which resulted affected GDP growth in real terms, and GDP per capita rose given that there is an enabling legal structure in place (Muhammad and Ngele, 2023 and Asteriou and Spanos, 2022). By becoming higher in level, as established by Peterson and his colleagues in 2023, household debts became solidified into a positive effect on economic growth but inverted into the negative relationship beyond certain ceilings of credit to private sector ratios.

In Gambia, the existence of domestic credit being made available to private sector has a direct effect on economic growth and this effect although small is a good contributor to further economic growth (Magaji and Musa, 2023). Hence, improving and promoting domestic credit to the private sector is an economic growth advantage. The supposition of the second measure of financial development, broad money (M3), presents positive coefficient values in the results. This means that an increase in broad money supply is associated with the increase in GDP. Broad money includes currency, checking account balances, and other assets that are highly liquid. An increase in M3 can spur economic activities by giving people and businesses more funds for spending and investments. However, it must be underscored that if the growth of M3 exceeds that of real economic output, it can lead to certain inflationary pressures. For price stability and sustainable economic growth, M3 is often adjusted by central banks and monetary authorities. Empirical data indicates that short-term economic growth results from an expansion of the money supply. For instance, Omodero's (2019) study discovered that a wide money supply significantly boosted Ghana's economic growth. According to Ugwuanyi (2018), Nigeria's economic growth was found to be positively and considerably impacted by the same broad money supply. According to Dingela and Khobai (2017), the money supply has a statistically significant positive effect on South Africa's economic growth both over the short and long terms. These results suggest that a rise in the amount of wide money in circulation could lead to economic expansion.

However, some studies bore mixed results. For example, Razia and Omarya (2022) showed that while money supply has a short-run impact on economic growth in Palestine, it has no effect in the long run. Furthermore, Omodero (2019) found in his study on Nigeria that broad money supply has an unimportant negative influence on economic growth. These findings can be interpreted that broad money is a major indicator of financial development in terms of showing a positive relationship with economic growth. Broad money increases can be said to trigger economic activity since this allows greater liquidity for spending and investing by individuals and businesses. This, however, should be done with extreme measures to avoid unnecessary broad money increases that spur inflationary pressures.

This coefficient value indicates that the various control variables-in terms of population growth (PG), human capital (HC), government expenditure (GE), and private investment (PI)-hold positive coefficients in such a way that all positively affect the net dependent variable. The significance levels vary from one variable to the other; for example, some variables are significant at the 1% while others are at the 5% levels. Numerous studies show a strong and positive correlation between population increase and economic growth in developing nations. According to Kremer's hypothesis, which is supported by actual data from Azam et al. (2020) and Morwat (2021), population growth promotes economic growth and development. Economic growth has been demonstrated to be positively impacted by human capital. Secondary school enrollment has a statistically significant beneficial impact on economic growth, according to research using government spending on education as a metric of human capital (Adeleke and Anuolam, 2023). Furthermore, the research demonstrated that secondary school attendance has a beneficial impact on economic growth, which is consistent with the findings of Nnyanzi and Kilimani (2018).

Government spending promotes growth more effectively in underdeveloped economies. Studies conducted within areas, such as SAARC countries (Rahman, 2023), Lesotho (Megbowon et al., 2022), Ethiopia (Mulugeta Emeru, 2023), and the BRICS, ASEAN, and SAARC regions (Ansari et al., 2021), have found positive effects of government spending on economic growth. These studies use time-series data and a variety of econometric methodologies to investigate how government spending affects GDP growth. The results imply that government spending on health, education, agriculture, and other development areas may have an impact on prosperity and growth. Private investment, the other control variable taken into account in this study, has a strong and favorable correlation with economic growth in emerging nations. Economic growth depends heavily on private investment (Bhutto et al., 2022; Awoyemi et al., 2022; Parveen et al., 2021; Turan et al., 2021; Ahamed, 2022). Studies have shown that GDP growth rates are positively impacted by private investment. In the short to medium term, economic growth has been shown to be supported by private-sector expansion, particularly the privatization and market capitalization of locally listed businesses.

Additionally, private investment has a positive effect on environmental degradation, implying it can be made environmentally friendly. The positive impact of private investment on growth remains pronounced in developing economies, whether under effective or ineffective governments, indicating that investments can help countries across varying levels of institutional quality. A p-value of 0.2253 from Sargan's test implied that the null hypothesis of over-identification restriction could not be rejected, thereby confirming the validity of the instruments used in the estimation process. Sargan test is used to check the validity of the instruments in regression models whereby it ensures for the appropriateness of the chosen instruments and their uncorrelation with the error term.

Using the GMM differences associated with the one-step measure, the pair of DCPS and M3 was found to have a significant contribution to the economic growth of developing countries. Meanwhile, Arellano and Bond (1995) mentioned that the two-step estimator outperforms the one-step method asymptotically, thus selected for the present analysis, collecting the results [see column (ii) of Table 1. Generally, difference GMM results between the two steps are consistent with those from a one-step estimation. The lagged dependent variable was statistically significant at a 1% level and produced a positive β coefficient of 0.8750. Specifically, the p-value of the Sargan test is 0.2536 and states that the nonexistence of AR(2) could not be ruled out, and neither could be the over-identification restriction. The two-step estimation also provided a comparable result as that of a one-step estimator indicating the significance of decoding measurement specificities (DCPS) and M3 as a significant driver of economic growth in developing countries.

This section was going to employ the System GMM estimator in the second phase of the analysis since there is a strong basis provided by previous econometric studies relating its advantages over the Difference GMM method. Arellano and Bover (1995) and Blundell and Bond (1998) confirmed System GMM gave statistically more efficient and consistent estimates especially in datasets with a limited number of time periods, a typical situation in macroeconomic studies. They pointed out that Difference GMM may be applied but has difficulties with weak instruments when the explanatory variables are highly persistent, rendering the estimates biased and inefficient particularly in small samples.

It was also noted by Griliches and Hausman (1986) that sometimes differencing of data worsens bias rather than reduces it; System GMM handles this by combining the two equations "in levels" and "in differences," thereby reinforcing the set of instruments used in estimation and leading to more precise estimates. This brings support to Baltagi's claim (2008) that System GMM is a less biased estimator compared with Difference GMM and also works better with finite samples.

It was System GMM that figured out to be the principal estimation methods chosen by this study due to these clear merits. Both one-step and two-step results are presented [see columns (iii) and (iv) in Table 1. To ensure the robustness of the findings, the validity of instruments was checked using the Sargan test for over-identifying restrictions and the Arellano-Bond AR(2) test for second-order autocorrelation. Both tests confirmed that instruments and model are appropriate which adds confidence into the reliability of System GMM estimates.

Results from column (iv) indicated that the DCPS had a coefficient value of $\beta = 0.056$, which is marginally larger than the differences GMM and the system GMM at one step. It suggests a very high statistical significance at the 1% level of confidence. An increase in DCPS by 1 percent will thus increase GDP by 5.6 percent at that threshold. While comparing with the second indicator of financial development, M's coefficient value, although highly significant, is $\beta = 0.0128$, lower than DCPS, which causes only a 1.28 percent increase in GDP, as M3 increases by 1 percent. The finding that the coefficient of DCPS is higher than broad money (M3) suggests that it has a stronger impact on GDP growth than changes in the broad money supply. What it reveals is the critical role of credit availability for investment and consumption in pushing economic growth, especially in developing nations.

DCPS will lead to changes in accessibility to funds for investing within an economy. Therefore, higher DCPS coefficients imply that easier access to credit will create more investment which will subsequently aggregate growth to GDP. Furthermore, DCPS is a better proxy of how monetary policy directly affects the economy. Central banks have been known to use credit supply changes to influence activity in the economy. When domestic credit has a larger coefficient, it might suggest that changes in availability of credit have a more immediate effect on GDP than changes in the M3. Besides, domestic credit illustrates the activity of intermediation, such as banks, in an economy because these organizations are crucial in allocative efficiency of capital. With higher coefficients of domestic credit, intermediation is seen to heavily sway economic growth rather than the general money supply.

Although both the money supply and domestic credit have positive effects on GDP, future research is likely to demonstrate that domestic credit has a major positive impact on GDP in Pakistan due to its bigger coefficient. According to these studies, GDP is positively and significantly impacted by both DCPS and M3, with DCPS's coefficient being higher than M's. Additionally, the results show that GDP in developing nations is significantly positively impacted by population growth (PG), human capital (HC), government spending (GE), and private investment (PI). This is consistent with the difference GMM in one-step and two-step estimations and the System GMM at one-step estimation result (see columns (i), (ii), and (iii) of Table: 1).

According to the discussion on this objective, results show that domestic credit to the private sector (DCPS) and broad money both have positive effects on GDP and are statistically significant. As a result of expansionary monetary policy shocks, increases in credit growth have larger increases. It is therefore recommended for developing nations to adopt an expansionary monetary policy that opens up more avenues of domestic investment resources. The reason being higher coefficient for domestic credit, which translates into effects of change in the availability and closer access to credit influencing more investment and possibly having an immediate multiplier effect on GDP relative to changes in the broader money supply. The more the government continues to pursue the expansionary monetary policy, the higher the probability of scaring away the skeptics in investments. Investors may develop a more favorable appraisal of future economic growth when they see central banks intervening to boost an economy. This then influences investment in enterprises by equity financing, which would ultimately assist in business expansion and investment.

Somewhat lower interest rates were maintained under an expansionary monetary scheme. Lower interest rates make borrowing less expensive and spur businesses to invest into new projects and increase consumer spending on goods and services. Increased spending and investment may therefore lead to increases in economic activity and GDP growth. Lower interest rates are directly advantageous for DCPS as they ease and lower the cost for business access to credit, which in turn accelerates levels of investments that promote economic growth. In a broader sense, increased access to domestic credit can enhance the growth of SMEs, which traditionally are the great engines for economic growth. Based on the diagnostic tests conducted, there was no presence of either first-order or second-order serial correlation, given that we did not reject the Sargan test when the p-value was greater than 0.05. Moreover, all the models we estimate have lagged dependent variable coefficients with significant values below unity, indicating the absence of explosive behavior. Therefore, we can comfortably say that the choice of Dynamic GMM as a panel estimator is adequately justified statistically (Baltagi et al., 2009). Hence, we need to go into some detail regarding these estimations, especially concerning their conformity to relevant hypotheses.

CONCLUSION

The relationship between financial development and economic growth is examined empirically in 96 selected developing countries from 125 developing countries from various regions such as Africa, Asia, and Latin America and the Carribean, between 2000 and 2022. The study tested financial development indicators of DCPS and M3 against GDP in a number of developing countries using both the difference GMM and the system GMM estimators. Additionally, diagnostic tests showing the lack of first-order and second-order serial correlation show that the dynamic GMM is the best panel estimator. Evidence thus far indicates that financial development is important for economic growth in developing nations, and DCPS stands out among all of these in terms of importance. Not only do DCPS and broad money supply demonstrate statistical significance, but both also exhibit a positive push on GDP, indicating that credit is a necessary vehicle for the financing of economic growth.

Moreover, population growth, human capital, government expenditure, and private investment are found to have a positive influence on GDP in developing countries, similar to prior studies. Therefore, to benefit from this assertion, monetary policy in developing countries should make the implementation of expansionary policies a priority in order to increase domestic funds available for investment. In turn, lowering interest rates and borrowing costs can provide impetus for economic growth, as it encourages companies to invest in new projects and consumers to increase spending, thus spurring activity for growth of GDP. This tactic further enhances the investor's confidence, fostered toward business expansion and investment. Simultaneously, the availability of credit to private sector enterprises should be improved to increase investment in growth, innovation, and productivity, in turn promoting economic growth. Policies to support an efficient and accessible credit market would increase the positive effect of financial development on economic growth.

To create a more favourable economic environment for growth and development, it is necessary to provide better financing alternatives for the private sector, improve their investment activities, and favourably moderate the outflow of foreign direct investments (FDIs). Financial inclusion initiatives linked to economic access are crucial for the development of developing countries because they give previously marginalized groups access to banks and financial services. Others include open account-statement procedures, mobile banking, and agent banking with a focus on expanding access to financial services, enabling

people and companies to properly manage their finances, save, and invest to promote economic growth.

Additionally, well-functioning regulatory regimes are essentials for ensuring the financial system's stability and integrity, and for engendering trust and confidence among its users, investors, and depositors. Transparent governance within financial institutions would create investor trust, reduce corruption, and thus boost economic growth. Investment in education, health, and skill development is equally important for establishing human capital, raising productivity and innovation, and engendering economic growth, which in turn reduces poverty and inequality.

According to modern growth theory and contemporary research, financial development plays a critical role in promoting economic growth in developing countries, underscoring the importance of implementing effective financial development policies. The expansion of the banking sector emerges as a particularly vital mechanism, as it facilitates investment, income growth, and more efficient resource allocation. Moreover, by influencing income distribution, financial development can indirectly contribute to poverty reduction, suggesting that a well-structured and inclusive financial system is not only a driver of growth but also an essential instrument for achieving broader socioeconomic development.

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