

Financial development and economic growth in Ghana: Does the measure of financial development matter?

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Abstract

The aim of this paper is to investigate the long-run growth effects of financial development in Ghana. We find that the growth effect of financial development is sensitive to the choice of proxy. Both the credit to the private sector as ratios to GDP and total domestic credit are conducive for growth, while broad money stock to GDP ratio is not growth-inducing. The indexes created from principal component analysis confirmed the sensitivity of the effect to the choice of proxy. The findings here suggest that whether financial development is good or bad for growth depends on the indicator used to proxy for financial development.

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1. Introduction

An important statistic for evaluating economic performance of any economy is its annual rate of real GDP growth. As a result, there are large number of studies that attempts to identify the main drivers of economic growth and the potential sources of growth differentials across space and time from both theory and empirical perspectives. The level of financial development has been identified as one of such drivers of growth. This notwithstanding, the evidence is not conclusive and the debate on whether financial development is the cause or the effect of the growth process is still on-going. Another source of dispute on this strand of the growth literature is the issue of appropriate or correct measure of financial development. This study aims to address these concerns in the literature using time series

econometric techniques. The first dispute has been addressed by earlier researchers using variants of Granger causality tests, mostly confirming the finance-led-growth hypothesis. This paper therefore focuses on estimating the growth effects of a large number of indicators for financial development. This, we hope, will resolve the second source of dispute among researchers studying the growth-finance nexus.

The existing literature has identified many transmission channels through which financial development may impact economic growth via their effects on savings and investment behaviour. According to Levine (2004), financial development involves improvements in the (i) production of *ex ante* information about possible investments, (ii) monitoring of investments and implementation of corporate governance, (iii) trading, diversification, and management of risk, (iv) mobilization and pooling of savings, and (v) exchange of goods and services. Each of these financial functions may influence savings and investment decisions and hence economic growth. Since many market frictions exist and laws, regulations, and policies differ markedly across economies and over time, improvements along any single dimension may have different implications for resource allocation and welfare depending on the other frictions at play in the economy.

Notwithstanding the disputed empirical findings, the hypothesis that financial development is an important driver of growth is now popular among empirical growth researchers. The role that financial markets and financial intermediaries play in the growth process varies significantly, from country to country, depending on the level of political freedoms, rule of law and property rights

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protection. As opined by [Aghion and Howitt \(2009\)](#), people are willing to save more, and hence free-up resources to investors in a country with efficient and trustworthy banks than in a country where banks are likely to waste depositors' wealth through bad loans or even swindle them.

Financial institutions and markets also help by pooling risks as well as optimal allocation of risk and returns. For instance, by collecting savings from many people and investing them in a large diversified range of projects, a depository institution allows even small savers to take advantage of the law of large numbers and get a reasonably safe rate of return. Well-functioning financial institutions can also help to alleviate agency problems by monitoring investors and making sure that they are making productive use of their loans rather than spending them on private consumption or otherwise defrauding the ultimate lenders ([Aghion and Howitt, 2009](#)).

Although there is virtually no disagreement on whether financial development is good for growth from both exogenous and endogenous growth perspectives, there appears to be no agreed indicator for financial development. Since the channel of transmission, from financial development to growth depends on the measure of financial development used, many authors have reached different conclusions, depending on the indicator used to proxy for financial development. Furthermore, the relevance of each channel of transmission is country specific, due to differences in political, legal and other institutional differences across space and time. The implication of this is that country case studies that use large number of indicators for financial development have significant potential of increasing our understanding of the growth effects of financial development. This paper therefore proposes a time series approach to study the effects of financial development on economic growth in Ghana, using eight alternative proxy indicators for financial development.

Although there are many time series country-case-studies, such studies are based on one or two indicators of financial development. Our literature search also indicates that there is only one study on Ghana that focuses on the finance-led-growth hypothesis by [Quartey and Prah \(2008\)](#). [Quartey and Prah \(2008\)](#) examined a bivariate causal linkage between financial development and economic growth in Ghana using four alternative indicators of financial development: broad money to GDP ratio; domestic credit to GDP ratio; private credit to GDP ratio and private credit to domestic credit ratio. Also, in a study of finance–growth nexus in which Ghana is one of the units studied, [Esso \(2010\)](#) used the ratio of credit to private sector to GDP as the sole measure of financial development. We however believe, as others have argued in the literature, that no single financial indicator could adequately proxy for financial development in any given country. The level of financial development in a country should be considered as a composite index derived from a possible large set of proxies. This is the approach taken in this paper. In addition to estimating our models using one indicator at a time among a set of controls, we also derive four composite indexes using information from the individual proxy indicators by applying principal component analysis (PCA). To our knowledge, this is the first study on Ghana that uses large set of proxies as well as its application of PCA. Further, we

refrain from bivariate causality analysis by controlling for other potential growth determinants. Thus the results reported herein are more convincing for the Ghanaian case than elsewhere in the literature.

The results indicate that the growth effect of financial development is sensitive to the choice of proxy used. For instance, using either the private sector credit to GDP ratio or the private sector credit as a ratio to total credit, we found positive and significant effect of financial development on growth. However, same cannot be said when one uses broad money supply to GDP ratio to proxy for financial development as the coefficient on this variable was found to be significantly negative. The indexes created from principal component analysis confirmed the sensitivity of the effect to the choice of proxy. This finding helps in understanding the conflicting results in the literature as many studies rely on single indicators hence unable to identify which financial sector variables have positive growth enhancing effects and which does not.

The rest of the paper is organized as follows. Section 2 presents an extensive review of the empirical literature on financial development and economic growth. Section 3 of the paper presents some stylized facts about the financial sector and economic performance in Ghana while section for deals with estimation techniques and data issues. The results and discussions thereof are presented in Section 5. Section 6 concludes the paper with summary of findings and some policy recommendations.

2. Literature review

Following the seminal work of [Schumpeter \(1911\)](#), and subsequent studies by [Goldsmith \(1969\)](#), [McKinnon \(1973\)](#) and [Shaw \(1973\)](#), the financial development – economic growth nexus has received extensive attention in economic research.

[Schumpeter' \(1911\)](#) view, often regarded as the first framework in analysing the finance-led growth hypothesis contend that a well-functioning financial system will spur technological innovations (growth) through efficient allocation of resource from unproductive to productive sectors. This argument is in the same vein as [Patrick' \(1966\) Supply-Leading Hypothesis](#). [Patrick \(1966\)](#) contends that the development of a robust financial sector can spur economic growth. Thus, the creation of financial markets and their services well in advance of their demand will drive the non-financial (real) sector along the growth path, via the transfer of scarce resources from surplus spending units to deficit spending units according to the highest rates of return on investment.

In contrast to this finance-led growth postulations, [Robinson \(1952\)](#) and [Patrick \(1966\)](#) again offer a variant view. The growth-led finance ([Robinson, 1952](#)) and the demand-following ([Patrick, 1966](#)) hypotheses assert that an expanding economy (real sector) will culminate into a high demand for the services of the financial sector, and thus a developed financial sector is a corollary of the demands of the growing real sector of the economy.

Other notable contributions to the finance–growth literature are [Goldsmith \(1969\)](#), [McKinnon \(1973\)](#) and [Shaw \(1973\)](#).

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