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The Impact of Financial sector development on economic growth in Tanzania: An empirical and methodological review

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Abstract

Financial sector development is essential for the growth and development of any economy. In this regard, this paper provides an empirical review of the impact of financial sector development on economic growth in Tanzania and suggests appropriate methodology. The review is based on two theories, supply leading and demand following hypotheses. The study discusses the methods and techniques used to analyse the finance-growth relationship and recommends that ARDL, ECM, and Co-integration, which provide consistent results, should be used by researchers. Finally, further studies should employ the financial development index to capture the diversity of developments in the financial sector.

Keywords: Financial sector development, Economic growth, ARDL, Co-integration

Background of the study

Many countries aim at achieving high rates of economic growth. The growth of any economy depends on factors such as growth in the labour force, investment, financial sector development, advancement in technology and public spending. Growth theories and models suggest that economic growth is necessary for development. One of the most critical factors in the growth process is financial sector development, that's because it is through a well-developed financial system that funds are channelled from those who have surplus funds (savers) to those who need funds for spending and making investments (borrowers) that are necessary for growth.

As theory suggests, financial instruments, markets, and institutions emerge to ease the cost of transactions and information asymmetries (Levine, 1999). In performing their functions, financial institutions reduce information and transaction costs, thus creating efficiency in mobilising savings and financing investments. Therefore, financial sector development relates to improvements in the productivity of the financial sector (efficiency).

The financial sector affects economic growth through technological improvements and capital accumulation. Sophisticated financial sectors reduce financing constraints facing economic agents, thus matter for growth. However, the key areas are (i) provision of credit to support economic activities, (ii) liquidity provision through demand deposits, credit, and overdraft facility to business, buying or selling securities to fulfil sudden cash requirements and (iii) risk management by pooling risks emanating from financial markets and commodity prices through derivative transactions.

There is a debate among economists that started in the 19th century on the finance-growth link. Bagehot (1873) and Schumpeter (1911) claim that finance is worth considering in generating positive economic growth (Mwang'onda *et al.*, 2018). But several economists contend that finance is not an essential component of economic growth. Robinson (1952) argued that when economic growth leads, finance follows. From this view, finance is not a source of economic growth. Instead, it responds to the varying demands of the growing economy.

Lucas (1988) also claims that finance is overemphasised as a determining factor of economic growth. However, this discussion is essential to whether finance is the cause or affects the growth process (Aikaeli and Mbellenge, 2016). Many studies have attempted to discover the critical components of economic growth and possible causes of growth differential across countries from both theory and empirical viewpoints. Financial sector development has been found as the main contributing factor to economic growth. Nevertheless, the evidence is not specific on whether finance is the source or affects economic growth (Adu *et al.*, 2013).

So far, substantial evidence suggests countries with sophisticated financial sectors recorded high growth rates, as their financial institutions mobilise funds and allocate them to support productive economic sectors. Still, there is no evidence supporting the transformation of an

entire economy that has taken place without a well-functioning financial system (Masawe *et al.*, 2013).

The empirical literature suggests that the financial control policies of the 1970s and 1980s present one of the main obstacles to continued economic growth in LDCs. McKinnon (1973) and Shaw (1973) claim that the government's behaviour of putting restrictions on policy instruments like interest rate below their equilibrium level reduces the return to savers and decrease savings, investments that impair economic growth. However, by the early 1990s, both policymakers and academicians agreed that financial sector development contributes positively to economic growth. After such an agreement, many developing nations announced reforms designed to liberalise and promote financial sector development (Masawe *et al.*, 2013).

Financial sector reforms introduced in sub-Saharan Africa (SSA) found their way to Tanzania in the 1990s. Tanzania embarked on a liberalisation program to revamp economic growth by boosting the private sector's role in the economy. Moreover, financial sector reforms were structured to provide favourable conditions for foreign institutions to operate in Tanzania. Following reforms in the sector, the number of banking and non-banking institutions has increased in mainland Tanzania. Despite reforms, the financial sector still faces challenges like low levels of technology, legal and regulatory barriers, weak capital markets and inadequate physical and economic infrastructure, hampers its contribution to growth.

Since 1991, the government implemented a number of policy and institutional reforms to promote financial sector development in Tanzania. Policies have been implemented to increase mobilisation of savings, increase competition and enhance efficacy in allocating credits. Unlike many countries in SSA, the Tanzanian financial sector is still in its early stages. Also, while reforms in the financial sector increase savings, credits become misallocated. Moreover, despite the substantial increase in the number of banking and non-banking institutions, accessibility of financial services in Tanzania increased after adopting mobile financial services.

Despite the central importance of finance in growth, African financial systems remain small and underdeveloped in relative and absolute terms. They are characterised by minimal coverage, with only one among five people accessing and obtaining banking services (Beck *et al.*, 2009). Africa's financial system's smallness is due to the high-interest spread margin, low level of

technology, high banking costs, and poor financial infrastructure. Besides, despite reforms, the financial sector in sub-Saharan Africa (SSA) is one that still does not sufficiently sustain economic growth (Gakunu, 2007).

Tanzania's financial sector comprises regulated (formal) and non-regulated (informal) institutions. The regulated institutions include banks, insurance corporations, pension funds, securities, and other financial institutions such as SACCOS (Saving and Credit Cooperative Society), microfinance, bureau de change, and mobile network operators. Non-regulated institutions include community groups such as Village Savings and Loan Association, Saving and Credit Association, and Village Community Banks that the Bank of Tanzania does not supervise. MOF supervises informal financial institutions under the National microfinance policy of 2017. The microfinance sub-sector is the one that serves the majority of low-income households, mainly women and people who reside in rural parts. The financial sector plays a significant role in providing five essential functions which affect saving and investment, hence economic growth through two channels, known as the accumulation of capital and technological innovation (Levine, 2004). In Tanzania, the financial sector's role in economic growth is not well known.

Literature review

Theoretical literature review

Financial intermediation theory suggests that financial institutions emerge to ease transaction costs and information asymmetries. However, finance-growth literature identifies two potential causation regarding financial development and economic growth. The supply leading hypothesis and demand following hypothesis suggested by Patrick (1966).

Supply leading hypothesis

Patrick (1966) distinguishes two potential patterns of causality. The first pattern runs from financial sector development to economic growth, and the financial sector is considered "supply leading" because it provides financial services that increase investments and promote growth. The financial sector offers services according to demand in a more advanced economy. For instance, in developing countries, the allocation of credits and other financial services is essential

to encourage investments. Therefore, according to the theory, robust financial sector development support economic growth more in developing nations.

Demand following hypothesis

The second causal pattern runs from economic growth to financial sector development. In this causal association, the financial sector provides services to a growing economy. The idea is referred to as "demand following". Patrick (1966) argues that either the first or the second pattern depends on an economy's development stage.

Patrick (1966) maintains that financial sector development arises due to increasing demands that indicate the real economy's needs. In a growing economy, the demand for various financial services materialises, and these are met passively from the financial side (Odhiambo, 2004). Further, Robinson (1952) argues that when economic growth lead, finance follows. From this perspective, finance is not the source of economic growth; it reacts to varying demands from the real sector. The actual economy's growth creates demands for certain types of financial instruments, and the financial sector responds automatically to these demands, hence the development of the financial sector.

Empirical literature review

Empirical evidence on the financial sector's contribution to economic growth emphasises the finance-led hypothesis where little or nothing has been done on the growth-led hypothesis. The initial study was done by Goldsmith (1969) by using the ratio of financial assets to GNP as a measure of financial development, assuming that the size of the financial system is positively related to the provision and quality of financial services, a rough connection between financial development and economic growth was found. The study measures financial development by focusing on one aspect: depth. The results would be improved if other factors like efficiency and stability were considered.

King and Levine (1993a) addressed the critics observed in Goldsmith's work. First, the close association between economic growth and financial sector development does not imply causality. The second fact was that the model used does not account for factors influencing economic growth. King and Levine (1993a), after considering change affecting factors from 1960 to 1989 in 80 developed and developing countries, used four proxies of financial development (depth, bank, privy and private) against three growth measures.

The study suggests that the original state of financial development is a good indicator of increasing economic growth rates, capital accumulation and economic efficiency improvements. However, they failed to consider that the financial sector comprises non-banking institutions that also provide valuable financial services and that banks may lend to the government or public corporations.

De Gregorio and Guidotti (1995) examined the empirical association between long-term growth (GDP) and the development of the financial sector in Latin America and studied 100 other countries. The analysis was conducted from 1950-1985 and 1960-1985 on 100 cross-country studies. Estimations were performed using Ordinary Least Square (OLS) and white's procedure to obtain robust standard errors on panel data. Their findings reveal that the financial sector's development improves economic growth in a large sample. Still, its impact is negative in panel data for Latin America due to financial liberalisation in a poor regulatory environment. They also found that the growth effects may occur through increased efficiency instead of investment volume (De Gregorio and Guidotti, 1995). The study considered a linear function, but empirical literature reveals the presence of a non-linear relationship in less developed countries. The results would be improved in Latin America by considering a non-linear relationship between variables of interest.

The newly alternative econometric technique (orthodox) was introduced to analyse finance's influence on a growing economy. Odedokun (1996) employed time-series data from 71 LDCs countries from 1960-1980 to determine and analyse the growth effects of financial development. The study findings reveal that (a) about 85% of the country’s financial development tends to support economic growth, (b) export expansion and capital formation are the results of financial development in stimulating economic growth, and (c) financial development stimulates economic growth in low-income than in high-income countries, and (d) the growth effects of financial development are similar across various regions around the globe (Odedokun, 1996). The use of complex measures of financial development provides good results. Therefore it is recommended to analyse the relationship between economic growth and the development of the financial sector.

Demetriades and Hussein (1996) conducted various tests to determine the causal pattern between financial development and real GDP in 16 developing countries using new time series methods.

The findings provide little evidence supporting the idea that financial products affect economic growth processes. However, the study found considerable evidence of a two-way causal relationship (bi-directional) and some reverse causality evidence. The study established that the causal association differ across countries; therefore, there is a risk when statistical analysis is done assuming that economies are homogeneous (Demetriades and Hussein, 1996). The homogeneity assumption in this case compromise results because economies have different social, political, legal and economic structures. If the study violates the assumption (homogeneity), the results would be improved.

Ahmed and Ansari (1998) analysed the impact of financial sector development on economic growth based on the Cobb-Douglas production function on three leading economies in South Asia including India, Pakistan, and Sri Lanka. The study employed a Granger causality test to examine the causal link between various financial sector development measures and economic growth. The study findings reveal that financial sector development granger causes economic growth (supply-leading). However, based on the combined time series and cross-sectional data, the financial sector significantly contributes to economic growth in all three countries (Ahmed and Ansari, 1998). The empirics show that in developed economies, supply leading is likely to be found. The study does an excellent job to captures the direction of causality from financial development to economic growth in the case of South Asia.

Choe and Moosa (1999) examined the linkage between financial sector development and economic growth in Korea's case using time series data from 1970-1992. The study analysed financial institutions' and capital markets' impact on the people and businesses' portfolio behaviour by employing a causality test and non-nested technique. Their study showed that the financial sector's development improves economic growth, and financial institutions significantly impact economic growth compared to capital markets (Choe and Moosa, 1999). In many less developed countries, capital markets are not developed; therefore, examining finance-growth links using capital market measures results in a rough relationship.

Khan and Senhadji (2000) empirically investigated the finance-growth nexus using a dataset comprised of 159 developed and developing countries from 1960 to 1999 using OLS and 2SLS for cross-country study. The results are robust to four economic development indicators covering the banking sector and the stock and bond market against the real GDP growth rate. The results

showed that financial development impacted economic growth positively. However, findings pointed out that the magnitude of the impact depends on data frequency, estimation methods, proxy used to measure financial development, and related mathematical form. Furthermore, some financial development measures become insignificant when growth equations are estimated with panels; first, the finance-growth link may be non-linear. Second, economic development varies while growth is more volatile in a particular country. Third, the used proxies for financial development may not be specific to cover the varying structure of financial markets in a particular country (Khan and Senhadji, 2000).

Rioja and Valev (2004) estimated the effect of financial development on growth sources in different countries. Estimations were performed using GMM on panel data of 74 countries covering 1961-1995. Their findings reveal that the impact of financial development on growth is through increased productivity and capital accumulation. Further, in developed countries, financial products have a strong influence and positively affect economic growth through increasing productivity, whereas, in developing countries, the impact occurs through capital accumulation (Rioja and Valev, 2004).

Waqabaca (2004) employed time-series data from 1970-2000 to examine the causal relationship between financial development and economic growth. Analysis of the financial development indicators in Fiji shows that the financial sector has been improving over three decades. The study's findings reveal that the positive impact of financial sector development was found based on unit root and co-integration econometric methods within a bivariate VAR framework. Still, for the case of Fiji, demand following hypothesis seems to prevail. The outcomes align with what is happening in developing regions (Waqabaca, 2004).

Odhiambo (2004) investigated the causal link between financial development and economic growth in South Africa from 1968-2000 using the Johansen-Juselius co-integration technique and vector error correction model. The study's findings reveal enough evidence to support the demand following phenomenon for South Africa based on three measures of financial development against real GDP. Therefore, the sustained growth rates result from financial sector development regardless of whether the model was estimated in the long term or short term. Again, Odhiambo (2007) examined the causal association between financial development and economic growth in Kenya and South Africa. The findings reveal that selecting a proxy to

measure financial product is more important, but a demand-leading view seems to dominate this relationship in both countries.

Quartey and Prah (2008) examined bivariate causal linkage among Ghana's financial development and growth using four different proxies to measure financial sector development based on the VAR framework. The study employed the granger-causality test, impulse response function and variance decomposition analyses. The study's findings reveal that economic growth influences financial sector development (demand following) when a liquid liability (M3/GDP) is used to measure financial sector development. When the ratio of domestic credit to GDP, the proportion of private credit to GDP, and the ratio of private credit to domestic credit are used to measure financial development, the study found no evidence to support either the finance-led or growth-led hypotheses in Ghana. Further, no statistical relationship was found to support the development stages (theory) suggested by Patrick in Ghana (Quartey and Prah, 2008).

Akinlo and Egbetunde (2010) empirically examined the causal association between financial development and economic growth by employing time series data from 1980-2005 for ten countries in sub-Saharan Africa. Estimations were carried out using granger causality based on the vector error correction model (VECM). The study found that financial development and economic growth are co-integrated in the selected ten countries, which implies a long-term relationship prevails in the finance-growth nexus in ten SSA regions. The positive impact was found in the Congo Republic, Central African Republic, Gabon, and Nigeria, while in Zambia, its economic growth influences the development of the financial sector. However, a bi-directional causal relationship was found in Chad, Kenya, South Africa, Sierra Leone and Swaziland. Finally, the study pointed out that macroeconomic policies and legal systems are essential for financial sector development. But in the case of Zambia policies should aim to improve economic growth which creates demands for financial services hence financial sector development (Akinlo and Egbetunde, 2010).

In Tanzania, empirical pieces of literature on the finance-growth nexus include the work of Odhiambo (2011), Fille (2013), Chuku and Ndanshau (2016), Worku (2016) and Mwang'onda *et al*. (2018). Odhiambo (2011) examined the empirical relationship between financial development and economic growth in Tanzania from 1980-2005, employing ARDL Bounds and granger causality testing methods. The analysis was done on a tri-variate model comprising foreign

capital inflow as an instrument variable, economic growth and financial development. The study's findings suggest, for the Tanzanian case, its economic growth that causes the development of the financial sector (demand following) with a uni-directional relationship. Two-way causality (bi-directional) was found between foreign capital inflow and financial development, and the uni-directional causal relationship was found between foreign capital inflow and economic growth. Finally, the study concluded that economic growth influences the development of the financial sector in Tanzania both in the short term (dynamic) and long-term (static formulation) (Odhiambo, 2011).

A study by Fille (2013) examined the finance-growth link using time series data from 1988-2012 in Tanzania. Estimations were performed using the granger causality test, error correction, and vector autoregressive (VAR) technique. The study's findings reveal that financial development influences economic growth, and economic growth causes financial effects (bi-directional) both in the long and short term. Similarly, Worku (2016) conducted an empirical study to analyse the financial impact on economic growth from 1975-2014 in East Africa. Estimations were carried out using Fully Modified Ordinary Least Squares (FMOLS). The study's findings suggest a supply and demand leading hypothesis (bi-directional) causal relationship. Further, three indicators have been presented in various related studies on the association between financial development and growth.

Still, the share of total domestic credit to GDP was used in the study because monetary aggregates are subjected to inflation, while the share of domestic credit to the private sector to nominal GDP has limited coverage, credit to the government and other sectors should also be incorporated. And the percentage of the stock market's total value to nominal GDP was not used since there are almost no stock markets in developing countries, particularly in East Africa (Worku, 2016).

Chuku and Ndanshau (2016) empirically examined the impact of non-banking financial institutions on economic growth in Tanzania using time series data for 1967-2011. Estimations were done using Zivot Andrews, Phillip-Perron tests, ARDL and error correction methods on the finance-growth nexus. The study's findings reveal a stable long-term association among economic growth determinants, including inflation, investment, interest rate, trade openness, and

financial development. The study establishes that in the short term, financial development bears a slight positive and significant impact on economic growth (Chuku and Ndanshau, 2016).

Mwang'onda *et al.,* (2018) empirically examined the impact of financial sector development on economic growth in Tanzania for the period from 1967-2011 and employed the Autoregressive distributed lag (ARDL) approach, error correction method (ECM) and co-integration analysis. Financial development was measured by (M3/GDP) against real GDP, and the study controlled for inflation, real interest rate, real exchange rate, the share of investment to GDP, the ratio of development expenditure to total expenditure and dummy for structural reforms. The study's findings reveal that the impact of financial development on growth in macroeconomic time frames was statistically significant but negative. However, no causal relationship was found in Tanzania (Mwang'onda *et al.*, 2018).

Summary of the literature

Empirical analysis shows that many studies that analyse finance-growth relationships based on financial depth indicators such as (M3/GDP) failed to capture all parts concerning the development of the financial sector because non-banking and financial markets are also part of the financial system. The use of ARDL, ECM, and Co-integration methods to examine the impact on a large sample has been adopted by researchers worldwide and proven to produce consistent results. The extent to which the measure of financial sector development is appropriate is still under debate, but the financial development index should be used.

List of Abbreviations

2SLS	Two Stages Least Square
ARDL	Autoregressive distributed lag
ECM	Error Correction Model
FMOLS	Fully Modified Ordinary Least Square
GDP	Gross Domestic Product
GMM	Generalized Method of Moments
GNP	Gross National Product
LDCs	Least Developed Countries
M3	Extended Broad Money
MOF	Ministry of Finance

OLS	Ordinary Least Square
SACCOS	Saving and Credit Cooperative Society
SSA	Sub-Saharan Africa
VAR	Vector Autoregressive
VECM	Vector Error Correction Model

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