

Financial Development, Financial Structure and Economic Growth in Tanzania

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ARTICLE INFO	ABSTRACT
Publication Online: 13 August 2019	This paper investigates the influence of financial structure and financial development on the performance of the economy during the period a 1990 to 2016. An econometric model is used to quantify the impact of the two variables and investment as a control variable, on economic growth. Financial structure is measured by structure-activity and structure-size while financial development is measured by finance size and finance –activity. Gross capital formation is used to measure investment. Economic growth is measured by annual change in GDP. The estimation results suggest that both financial structure and financial development were important in influencing economic growth in Tanzania during the period under study.
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1. INTRODUCTION

Following the work of Schumpeter, and later studies that reiterated a similar line of analysis, it is generally agreed that a well functioning financial system is a necessary condition for long term economic growth (Schumpeter, 1911; King and Levine 1993; Levine, 1997, 1999, 2001, 2002). Schumpeter postulated that financial intermediation through the banking system played an important role in economic development by affecting the allocation of savings and thereby improving productivity, technical change and economic growth. In recent studies, the emphasis has been on the role of the banking system on intermediation between savers and borrowers. Intermediation supports growth by performing the functions of saving mobilization, capital funds allocation, monitoring of the use of funds and managing risk. The issue normally discussed is whether the bank-based or the market-based system works better. Those who support bank-based system include Stiglitz (1985), while Boyd and Smith (1998) support the market-based system.

A large number of studies have tested the validity of the two views by use of econometric models. The most seminal of the empirical studies cited is King and Levine (1993) where the econometric analysis results support the existence of a relationship between higher levels of output and financial development, physical capital accumulation and economic efficiency improvements. Most recent studies on the subject include Khan (2008); Estrada et.al.(2010); Jedidia (2014) and Durusu (2016). These studies have continued to empirically investigate in the long-debated relationship between financial development and economic growth.

After this introduction, we have organized the paper in five other sections. Section two provides a brief overview of the development of the financial sector while in section three literature is reviewed. The methodology used is the subject of the fourth section which also outlines the model used and the econometric methods employed. The fifth section presents and discusses the empirical results and the last section summarizes the study and draws conclusions.

2. A BRIEF OVERVIEW OF THE TANZANIAN FINANCIALSECTOR

The performance of the financial sector was undermined by macroeconomic imbalances that were caused by shocks that hit the economy beginning the mid 1970s and thus Tanzania commenced on financial sector reforms in the early 1990s. Prior to that, the financial system comprised of a few public institutions which exercised monopolistic specialization. Basic characteristics of the system was direct monetary via exchange rate setting, direct credit to priority sectors, preferential interest rates, government interference in financial matters and weak supervisory power of the monetary authority, BOT(2007, 2017).

As a result of the above manifestations, the financial system was weak, characterized by high inflation, negative real interest rates and emergence parallel markets.

Later, the government eliminated state controls and introduced market mechanisms in critical areas such as ceilings on government financing, devaluation and elimination of controls in the foreign exchange market.

A move to liberalize the financial sector was taken when a Presidential Commission was established in 1988, which thereafter recommended a reform program with a major component being the installation of a new policy environment that was envisaged to facilitate the implementation of the reforms and operation of a new restructured banking system and financial system. As a strategy to accelerate growth, the central bank implemented a series of reforms to promote a market based financial sector.

The Banking and Financial Institutions Act of 1991 paved the way for entrance of private, foreign and domestic investors in the financial sector. The Presidential commission recommendations also resulted in the first generation financial sector reforms. In this reforms period emphasis was put on establishing an enabling environment for a free market to operate to provide quality and reliable financial services. This resulted in fast growth of the

banking sector from three commercial banks in the late nineteen eighties to more than forty by 2010 and reached 56 by 2016.

Financial markets started to emerge after the Financial Institutions Act of 1991, the Foreign Exchange Act of 1992, the Capital Markets and Securities Authority Act of 1994 and the Bank of Tanzania Act of 1995. Being at its infancy, the financial market is comprised of Treasury Bills and Bonds, Purchase Agreements, Inter-bank foreign exchange trading corporate bonds and equities. The Capital Market and Securities Authority were established in order to facilitate establishment of a stock exchange for mobilizing and allocating savings for medium and long-term investment.

How the stock market performs is measured by market capitalization. There has been an impressive performance since it was established as indicated in Table 1.

Table 1: Trends in GDP and Financial variables

	'88	'90	'92	'94	'96	'98	'00	'02	'04	'06	'08	'10	'12	'14	'16
M3	17.5	19.9	22.1	24.8	21.8	16.9	17.1	22.6	22.6	28.8	30.1	34.1	35.2	36.1	37.4
DCP	2	4	2	2.3	3	4	4	7	9	13	16	16	19	21	23
BD	3	4	4	9	15	11	11	16	16	21	22	25	29	31	33
MCA	-	-	-	-	-	1.77	2.27	3.17	3.47	2.57	2.27	6.55	5.22	6.34	6.65
GDP	4	7	1.5	2	5	4	5	7	7.2	7	7	6.9	7.2	6.9	7.1

Notes: M3, DCP, BD and MCA are defined as broad money, credit to private sector, bank deposits and market capitalization as a percentage of GDP respectively. GDP is annual growth in Gross Domestic Product.

Source: World Development Indicators

It is seen from the table that all financial development measures have been on the increase especially after 1991. This period marks the period after financial sector reforms. Between 1988 and 1999 M3 as a percentage of GDP averaged 20 percent while for the period 2000 to 2016 it averaged 25 percent. Domestic credit to the private sector also marked an increasing trend from an average of 3 percent during 1988 to 1999 period, thereafter rising to an average of 20 percent during the period 2000 to 2016. Banks have increasingly been important as holders of deposits as reflected by the increase in the bank deposits- GDP ratio which grew by three fold between year 2000 and 2016. The capital market is still in infancy, only 9 years since it started in 1999. This is reflected by the low market capitalization ratio which is still less than 10 percent.

3. LITERATURE REVIEW

3.1 Theory

It is reported that financial development affects growth through a number of functions. These are: producing information about possible investments and allocating capital, monitoring firms and exerting corporate governance; trading diversification and management of risk; mobilizing and pooling of savings and easing the exchange of goods and services. These financial functions influence savings

and investment decisions and technological innovations and hence economic growth, La Porta, et. al (1998); World Bank (2001); Rajan and Zingales(1998); Adjasi and Biekpe (2006)

As documented in Lal, et. al. (2009), there exist four competing theories on the role of financial services on economic growth. These are the bank-based theory, the market-based theory, the financial services theory and the law and finance theory. The bank-based theory puts emphasis on the positive role of banks in development and growth. The main argument put forward is that banks can finance development more efficiently than markets in developing countries. The validity of this argument hinged on the ability of government to overcome market failures and strategically allocate savings. Emphasizing this view, Levine, (2002) and Beck and Levine (2004) argue that banks that are unhampered by regulatory restrictions can exploit economies of scale and scope in information gathering and processing, be efficient in mobilizing resources and managing risks.

The market-based view on the other side highlights the advantages of well-functioning markets in promoting successful economic performance and stresses the problems of bank-based financial systems. Levine (2002), Beck and Levine (2004) and Lal et.al.(2009) emphasize further that

growth and profit incentives is fostered by liquid and well-functioning markets.

Proponents of the financial services view approach the issue differently. What matters according to this view is the creation of an environment where financial services are adequately and efficiently provided. They argue that creation of well functioning banks and markets is vital and not financial structure. The theory suggests a combination of banks and markets instead of assessing the superiority of one system or the other.

The law and finance theory maintains that the role of the legal system in creating a growth-promoting financial

sector. The legal system has to provide legal rights and enforcement mechanisms that facilitate both markets and intermediaries. The conclusion of this theory is that it is financial development and not financial structure that is critical to firm, industry and national development. There are numerous studies which support this view, including La Porta, et. al (1998); World Bank (2001); Rajan and Zingales(1998); Adjasi and Biekpe (2006); Arestis, et. al.(2001); Arestis and Demetriades (1997); Battacharya and Sivasubramanian (2003); Christopoulos and Tsionas (2004); Chang (2002); Cochran (2013). In Table 2, we summarize the main arguments of the four theories.

Table 2: Competing theories on financial services and economic growth

Theory	Arguments	Literature
Bank-based (emphasizes the positive role of banks)	<ul style="list-style-type: none"> -Banks finance development more efficiently especially in developing countries -overcome market failures if state owned -strategic allocation of savings -exploit economies of scale -better position to address agency problems -contain moral hazard 	Gerchenknon(1962); Levine(2002); Beck and Levine (2004); Stiglitz (1985); Boyd and Prescott (1986)
Market-based (big and well-functioning markets foster growth)	<ul style="list-style-type: none"> -foster profit incentives -enhance corporate governance -facilitates risk management -powerful banks are inefficient 	Levine(2001); Beck and Levine(2004)
Financial services(both banks and markets matter)	<ul style="list-style-type: none"> -banks and markets ameliorate different costs, transactions and information - facilitate savings mobilization and risk management -assess potential investment opportunities -exert corporate control -enhances liquidity 	King and Levine (1993); Levine (2002); Durusu(2016)
Law and finance(legal system creates a growth-promoting financial sector)	<ul style="list-style-type: none"> -facilitates both markets and intermediaries -protects property rights -favours development and investment -financial development matters not financial structure 	La porta et. al.(1998); Levine, (1999); Rajan and Zingales, (1998); World Bank,(2001).

Source: Lal et.al.,(2009); Ray (2011)

3.2 Empirical Literature

Empirical literature on financial development and economic growth have covered cross-country growth regressions, time series analyses, panel studies industries and firm level studies and detailed country case-studies. Goldsmith (1969) assessed whether finance exerts a causal influence on growth using data for 35 countries spanning the period 1860-1963. Financial development was measured by value of financial intermediary assets divided by GDP. Findings show financial intermediary size relative to the size of the economy rises as countries develop. He documents a positive correlation between financial development and

economic growth. McKinnon (1973) studies the relationship between the financial system and economic development in Argentina, Brazil, Chile, Germany, Korea, Indonesia and Taiwan. His findings document critical interactions among financial intermediaries, financial markets, government policies and the financing of industrialization. Most evidence from the country studies suggest that better functioning financial systems support faster economic growth. King and Levine (1993) also pursue a study on the influence of financial development on growth for 71 countries, using data during the period 1960-1989. A strong positive relationship was found between financial

development indicators and economic growth. Most recent studies arriving at similar conclusions include Cochran (2013), Cull and Martinez, (2010), Ghali, (2010), Gladstone, (2013), Gladstone and Godza, (2013), Gambacorta et al., (2014), Park et.al. (2010) , Rasteiwa, (2015), Sahoo, (2013), and Sim, (2017).

Recent studies on the subject include Khan (2008;) Jedidia (2010), Estrada et.al.(2010) and Durusu(2016). Khan employs the Autoregressive Distributed Lag methodology using Pakistan data. He finds financial developing influencing economic growth in Pakistan during the period of study. Estrada et. al, op.cit., performed econometric analysis on a panel of data of 125 countries and the results confirmed that financial development has a positive and significant effect on growth especially in developing countries. Jedidia op.cit assessed the finance-growth relation in Tunisia by use of the Autoregressive Distributed Lag method. He took private credit, value traded and issuing banks securities of the financial markets as financial development indicators. Results showed that domestic credit to private sector has a positive effect on economic growth, suggesting that financial development is a driver of long-term growth. In a recent study, Durusu (2016) shows that debt from credit markets and equity from stock markets are two long- run determinants of GDP per capita growth. The long-run relationship is estimated for a panel of 40 countries over the period 1989-2011 by means of Augmented Mean Group (AMG) and Common Correlated Effects (CCE).

After the finance-development discussions the debate shifted to comparing the role of market-based versus bank-based financial development and the role in economic growth. Lal et.al. (2009) documents studies that provide evidence that confirms the distinction between bank-based and market based financial systems and their role in economic growth. Defining Japan as a bank-based system, conclude against bank-based system while in a study of the

US and UK, taken as market based systems, Beck and Levine, (2004), Levine, (1997, 1999) conclude in favour of market-based financial systems.

Making a distinction among industries, Beck and Levine, (2004); Beck et. al., (2000) test the hypothesis of whether financial structure helps to grow disproportionately those industries that rely heavily on external finance. In the findings, there is no support of the hypothesis. Other empirical studies have been carried out using cross-section data. Levine, op.cit., analyzed data from 44 industrial and developing countries and arrived at the conclusion that countries with well developed market based institutions also had well developed bank-based institutions while countries with weak market –based institutions also had weak bank-based institutions. This is in support of the view that distinction between market-based or bank-based financial systems is of no consequence, Lal et.al.,(2009). However, Sawyer (2016) in a study of the UK shows that while market- based financial development has a positive impact on economic growth in the UK, bank-based financial development has a distinct negative impact. Gladstone (2013) in a study of India uses Granger Causality method and the results indicate that causality runs from private sector credit to real GDP, supporting the supply-leading process of bank intermediation.

4. METHODOLOGY

4.1 Data

Data on GDP, Gross Capital Formation is obtained from the National Bureau of Statistics which publishes National Accounts and Economic Surveys on an annual basis. Credit by deposit money banks is obtained from the central bank, Bank of Tanzania. The series on stock market variables was obtained from the Stock Markets and Securities Authority. Table 3 presents the variables and their measurement.

Table 3: Definition of Variables and their computation

Variable	Measure	Computation
Growth	Gross Domestic Product	Annual change in real gross domestic product
Physical capital accumulation	Investment	Annual change in Gross fixed capital formation
Financial Structure (1)Structure-activity (2)Structure-size	Structure-activity measures the activity of stock market relative to banks and other financial institutions. Structure-size measures the size of stock market relative to the rest of the financial sector-banks and non-bank institutions.	(i) the log of the ratio of stock market total value traded to private credit (ii) the log of the ratio of stock market capitalization to private credit
Financial Development (1)Finance-size (2)Finance-activity	Finance-size measures the overall size of the stock market, banks and non-bank financial institutions. Finance- activity the total activities	(i)the log of the product of private credit ratio and stock market capitalization ratio (ii) the log of the product of private credit ratio and stock market value traded ratio

King and Levine, (1993), Gladstone, (2013), Lal et. al (2009), Sawyer, (2016).

4.2 Temporal properties of the data

We follow the received approach for determining long-run and short-run relationships among variables following the model of co-integration and vector error correction (VECM) framework by Johansen and Juselius (1990, 1992). However, the autoregressive distributed lag (ARDL) model is adopted to establish relationship among variables. The ARDL model is used because it allows us to describe the existence of an equilibrium and existence of long-run and short-run dynamics.

Before model estimation, we avoided spurious regression by testing for unit root. To this end, we first establish the variables order of integration. In brief, a variable is integrated of order ‘d’ written (d) if it required differencing d-times before it achieves stationary. To test for the integration properties of the variables concerned we employ standard unit root tests, the augmented Dickey-Fuller (ADF)

tests, Dickey and Fuller, (1979, 1981); Banerjee et. al.(1993). The results of these tests for each variable are provided in Table 3 and it can be seen that the ADF tests suggest non-stationary variables when expressed in levels. These tests indicate that the variables under consideration are integrated of order I. The finding that the variables contain a unit root raises the possibility of a long run relationship among them. We therefore proceed to evaluate their multivariate temporal property using co-integration analysis. The variables are said to be co-integrated or share a long run equilibrium if their linear combination, although they are individually non-stationary is stationary. What is implied by this is that the co-integrated variables will not drift further away from each other arbitrarily, (Johansen and Juselius 1990, 1992; Pesaran et. al. 1996; Persian and Shin, 1999).

Table 4 : ADF Unit Root Test Results

Variable	ADF Levels			ADF First Differences		
	Intercept and trend	Prob. Value	Lags	Intercept and trend	Prob. Value	Lags
GDP	1.811	0.000	2	8.412**	0.002	2
GFCF	1.138	0.004	2	8.753**	0.004	2
FD	3.723	0.111	1	7.512*	0.001	1
FS	1.4	0.002	1	5.321*	0.003	1

** Indicates stationary at 5% significance level

Unit root test results in table 3 reveal that all variables are non stationary in levels but stationary when differenced.

It is seen in the results presented in Table 3 that the variables are I (1) in levels but I(0) in first differences. We thereafter test for co integrating relationship between GDP, financial structure and financial development. The Johansen and Juselius (1990, 1992) approach is utilized. The approach is essentially a vector auto regression based test, treating all variables as potentially endogenous. The test is also capable of identifying multiple co- integrating vectors. The test statistics have been developed by Johansen and Juselius (1990) to enable one determine the number of co integrating vectors, the trace and the number of maximum Eigen value statistics. In the procedure, the lag length of the tests is selected such that the residuals are serially

uncorrelated. The results of these tests are reported in Table 5.

The results presented in Table 5 indicate the presence of a unique co- integrating vector, for the basic 3 variable model. The null hypothesis of no co- integration (r=0) is rejected at the 5 percent significance level while the null hypothesis of almost one co- integrating vector cannot be rejected. The trace value statistic is above the 5% critical value (35.13 against 31.17). Similarly the null of r=1 and r=3 are both rejected. The results suggest that there was co-integration among economic growth, fixed capital formation, financial structure and financial development during the period of study.

Table 5: Johansen- Juselius Co-integration test results

Hypothesis	HA	Eigen Value	Trace T		Prob. Value	Maximum Eigen Value				Prob.
			Trace	Critical Value 5%		HO	HA	Trace	Critical Value	
r<0	r>0	0.645	35.13	31.17	0.001	r=0	r>0	30.13	29.12	0.002
r<1	r>1	0.392	28.51	23.32	0.002	r=1	r>1	20.22	18.30	0.005
r<2	r>2	0.338	12.85	9.01	0.004	r=2	r>2	14.32	11.50	0.008
r<3r	r>3	0.053	5.39	4.31	0.007	r=3	r>3	4.75	4.51	0.002

4.3 Error Correction Model

It has become a tradition to follow the approach in Johansen and Juselius (1990, 1992) in determining short-run and

long-run relationships among variables. The framework uses a model of co-integration and vector error correction

(VECM) but in our case we follow the autoregressive distributed lag model (ARDL), as in equation (1).

$$\Delta y_t = \gamma_0 + \sum_{i=1}^n \beta_i \Delta FD_{t-1} + \sum_{i=1}^n \delta_i \Delta X_{t-1} + \gamma_1 FD_{t-1} + \gamma_2 X_{t-1} + vt \dots \dots \dots (1)$$

Where,

Δy_t is real GDP growth, FD is an indicator of financial development or financial structure, and X is a set of control variables. Having established existence of a long-run relationship among the variables an error correction model (ECM) is estimated following equation (2).

$$\Delta y_t = \alpha + \Phi (ECM)_{t-1} + \sum_{i=1}^n \beta_i \Delta FD_{t-1} + \sum_{i=1}^n \delta_i \Delta X_{t-1} + \gamma_1 FD_{t-1} + \gamma_2 X_{t-1} + vt \dots \dots \dots (2).$$

Following Barneje (1994) an Error Correction Model was estimated as specified in equation 1 after including separate measures of financial development and financial structure, and investment as a control variable

$$\Delta y_t = \alpha + \beta_0 \Delta y_t (-1) + \beta_1 \Delta GFCE + \beta_2 \Delta FD + \beta_3 \Delta FS + \beta_4 \eta CE (-1) + vt \dots \dots \dots (3)$$

Where,

Δy_t is defined as above, $\Delta GFCE$ is annual change gross fixed capital formation which proxies investment; ΔFS change in the measure of financial structure, ΔFD is change in the measure of financial development, CE is the error correction term and vt is the error term.

Equation(3) assists us in evaluating the extent to which financial development and structure that has occurred in the country during the study period has influenced economic

growth and also gives guidance on whether financial development and financial structure is necessary for economic growth to increase in Tanzania.

According to theory, a high value of FS means a system that is more of a market –based matters, while a lower FS means more of a bank-based system. In this analytical framework as posited by Lal et.al, (2009), we are interested in the significance of the coefficient β_3 rather than its sign. A significant β_3 implies that financial structure matters. A positive and significant β_3 signifies a market-based financial system while a negative and significant β_2 supports the bank-based system.

The bank-based view of financial services predicts a negative and significant β_2 coupled with a positive and significant β_3 . The market-based view, on the other hand, predicts both positive and significant β_2 and β_3 , as suggested by Lal et.al op.cit.

5. ESTIMATION RESULTS AND DISCUSSION

The results of the error correction model estimation presented in Table 5 suggest a long-run relationship between financial structure, financial development and economic growth. Both financial structure and financial development matter for economic growth as they have positive and significant coefficients. Capital formation has also been influencing growth as a positive and significant coefficient from the estimation testifies. The error correction term, CE, is negative and significant, supporting the existence of co-integration among the variables. Our conclusions are consistent with the findings of Levine and Zevros, (1991), and Beck and Levine (2004); Beck et. al. (2000).

Table 6: Error Correction Model Results

Variables	Coefficient	Standard Error	t-Value	Prob. Value
c	0.0143	0.041	0.3488	0.025
$\Delta y_t (-1)$	0.0312	0.012	2.6000	0.000
ΔFD	0.1316	0.0150	1.400	0.0243
ΔFS	0.0271	0.0861	1.5855	0.0164
$\Delta GFCE$	0.0611	0.027	2.2629	0.0573
CE-1	-0.0421	0.014	-3.0071	0.0453
R-Squared	0.8714	Adj. R-Squared		0.6713
S-E of Regression	0.0143	Akaike Criteria		-5.5367
Log Likelihood	67.9	Schwarz Criterion		-3.9862
Durbin Watson	1.81	F-Statistic		24.1174

According to the two views, it is seen that the market view is supported by the data as both β_2 and β_3 are positive and significant at 5% level of significance. There is stronger influence of financial development than financial structure on economic growth as suggested by the larger coefficient of financial development. This can be explained by the underdeveloped stage of the financial market existing in Tanzania. Our findings indicate that there is a long-run

relationship between financial development and financial structure and economic growth.

6. CONCLUSION

The study findings show that to date, both market-based and bank-based financial systems have been influencing in the economy’s economic performance with a stronger influence coming from financial development as it has a larger

coefficient. In addition, physical capital formation has also contributed to economic growth. The findings of the study suggest that both the capital market and bank market need to be promoted in order to enhance their contribution in economic growth. This translates to the financial services and law and finance views that call for financial innovation and development of a legal system that will promote both markets and banks.

The findings also reiterate the importance of sound institutions that put in place

an enabling environment for foreign banks to enhance financial depth. This is in line with the findings of the broader literature on international financial openness and financial development which emphasized the need for host economies to be equipped with sound institutional infrastructure in order to benefit from international financial openness.

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