

ENTREPRENEURIAL ACTIVITY AND FINANCIAL DEVELOPMENT IN AFRICA

ABSTRACT

The paper explores whether entrepreneurial activity could influence financial development in 12 African countries. Two estimation techniques are employed: Fully Modified Ordinary Least Squares and Generalized Method of Moments (GMM) techniques. The results from the two estimation techniques show that entrepreneurial activity positively explains the variations in the financial development of the study countries. To the extent that entrepreneurial activity positively explains variations in financial development in the study countries, we strongly submit that African countries could develop their financial systems by vigorously promoting entrepreneurship.

KEYWORDS: Entrepreneurial activity, Financial Development, Africa

INTRODUCTION

The theoretical as well as empirical prognosis that financial development is instrumental in the growth process of an economy has given birth to the towering interest in empirically identifying the significant determinants of financial development. The intuition is that by identifying the significant predictors of financial development, policy interventions could be directed at them so as to promote economic growth. Mention can be made of studies such as Voghouei *et al.* (2011); Beck *et al.* (2003); Rajan and Zingales (2003); Stulz and Williamson (2003); and La Porta *et al.* (1997, 1998) which shed light on the predictors of financial development. However, rummaging through the plethora of empirical investigations into the significant predictors of financial development reveals that these investigations have not addressed the issue of whether the level of entrepreneurial activity significantly explains the variations in the development of the financial sector.

Consequently, the current study has been designed to address this murky area of the empirical literature. The significance of the current study is predicated on its expansion of the frontiers of the empirical literature on the determinants of financial development as well as on its African setting where most financial systems are bogged down in the quagmire of underdevelopment. It is contemplated that the findings of the current will inform policy direction regarding financial development in Africa in particular and the world in general.

The rest of the paper is sectionalized as follows. The next section reviews the extant literature followed by the methodology of the study. Estimation results section is next in line followed by conclusion and policy implication section.

REVIEW OF EXTANT LITERATURE

Voghouei *et al.* (2011) show from their survey of the literature on the determinants of financial development that institutions, openness of trade and financial markets, legal tradition, and

political economy are factors that promote the financial system. However, political factors are the most significant predictors of financial development (Voghouei *et al.*, 2011).

The effect of institutional quality on financial development has received some attention. La Porta *et al.* (1997, 1998) contend that the origins of the legal code substantially influence the treatment of creditors and shareholders, and the efficiency of contract enforcement. Porta *et al.* (1997, 1998) indicate that countries with French Civil Law tend to have comparatively inefficient contract enforcement and higher corruption, and less well-developed financial systems, while countries with British legal origin attain higher levels of financial development. Huang (2005) delves into the effect of economic institutions on financial development. Corruption, rule of law, bureaucratic quality, government repudiation of contracts, and risk of expropriation are used to measure institutional quality. The study reports that institutional quality has a positive influence on the level of financial development. Baltagi *et al.* (2009) also investigate the impact of institutional quality on financial development and show that institutional quality promotes private credit and that improvements in institutional quality promote liquid stock markets. Herger *et al.* (2007) also investigate the impact of institutional quality on financial development. They measure institutional quality with constraints on executive, legal formalism, procedural complexity, number of procedures, risk of expropriation, and property rights and find that constraints on executive consistently and significantly promote relative size of capital market.

Inflation is one of the significant determinants of financial determinants. Ghazouani (2004) uses dynamic panel technique to show that inflation has a negative impact on financial development for 11 Middle East and North African countries over the period of 1979-1999. The negative impact of inflation on financial development has been confirmed by Bittencourt (2008) who reports from Brazil that inflation impedes financial development.

Openness to external trade has been found to promote financial development (Do and Levchenko, 2004; Huang and Temple, 2005). Claessens *et al.* (1998) show that opening banking markets enhances the functioning of national banking systems and boosts the quality of financial services which augur well for banking customers. Law and Demetriades (2006) use a dynamic panel data analysis for 43 developing countries from 1980-2001 and report that trade openness and institutions are key determinants of financial development. Their study also shows that liberalisation of both trade and capital flows is effective in facilitating financial development in middle income countries, but less effective in low income countries. However, Yu and Gan (2010) report that trade openness is not a statistically significant determinant of the banking sector development in Malaysia. Bekaert *et al.* (2002) demonstrate that opening up the stock market to foreign investors makes stock returns more volatile and more highly correlated with the world market return.

The geographical view of financial development has three strands of literature. The first strand of literature addresses the relationship between latitude and economic development and categorizes countries into two: those closer to the equator and those not closer to the equator. The thesis is that countries closer to the equator have tropical conditions which may affect their economic development (Diamond, 1997; Gallup *et al.* 1999; and Sachs, 2003a,b). The second group of studies concentrates on the location of a country and its proximity to large markets or having only limited access to coasts and ocean-navigable rivers (Sachs and Warner, 1995a,b; Easterly and Levine, 2003; Malik and Temple, 2005). The main thesis is that geographic circumstances

may impede a country from entering a large economic market and exploit economies of scale for development. The third strand of literature relates to the relationship between resource endowment and economic development (Diamond, 1997; Isham *et al.*, 2002). The contention is that resource-endowed countries develop faster than their counterparts.

Economic growth, income level, population level, religion, language and ethnic characteristics have also been identified as significant determinants of financial development (Dutta and Mukherjee, 2012; Yu and Gan, 2010; Levine 2005, 2003; Jaffee and Levonian, 2001; Stulz and Williamson, 2003; Saint-Paul, 1992; and Greenwood and Jovanovic, 1990). Regarding GDP as a significant determinant of financial development, Yu and Gan (2010) undertake a study that explores the determinants of banking sector development in Malaysia using three models of banking sector development (liquid liability, private sector credit and domestic credit) and report that higher GDP promotes banking sector development and that financial liberalization appears to destabilize banking sector development. Evidence on economic growth preceding financial development has been reported in Africa (Esso, 2010; Odhiambo, 2010; Quartey and Prah, 2008). On culture-financial development connection, Dutta and Mukherjee (2012) pose a question, “Is culture a determinant of financial development?” They consider multiple dimensions of culture, identified in the literature by Tabellini (2008), to test their hypothesis. The thesis is that as culture develops in the form of greater trust, control and other traits, the attitudes of individuals towards financial market change positively, and they get into greater financial transactions. This results in better financial development. The study uses quantile estimation technique for a cross section of 90 countries and finds that culture significantly influences the level of financial development. The robustness of this finding is tested using Hofstede’s cultural dimension – ‘Uncertainty Avoidance Index’ (UAI) – as an alternative measure for culture and the result holds for multiple measures of financial development.

METHOD

Financial development is the dependent variable and is represented by the natural logarithm of total domestic credit provided to the private by the banking sector as a share of GDP (*LCPS*). The independent variable is entrepreneurial activity which is proxied by the natural logarithm of the number of new businesses registered in a fiscal year (*LENTREACT*). The control variables are domestic investment proxied by the natural logarithm of gross capital formation as a share of GDP (*LCFORM*); inflation proxied by natural logarithm of GDP deflator (*LINFL*); economic openness represented by imports plus exports as a share of GDP (*LOPEN*) and economic growth represented by GDP per capita (*LEGROWTH*). Two estimation techniques are used for estimation: Fully Modified Ordinary Least Squares (FMOLS) and Generalized Method of Moments (GMM) techniques. The latter is used as a control measure to ascertain the robustness or otherwise of the results obtained from the former. GMM has been widely used in recent empirical work, particularly in macroeconomics and finance (Liang, 2005) due to its superiority over other estimation techniques. According to Saca *et al.* (2009), GMM controls for unobserved country-specific effects, first-difference non-stationary variables, overcome the endogeneity of the explanatory variables by using instruments and test for the presence of autocorrelation.

Our panel regression model is generally stated as:

$$y_{it} = \beta_1 + \beta_2 F_{it} + \mu_i + \varepsilon_{it} \quad (2)$$

Where y is the natural logarithm of GDP per capita; F represents the explanatory variables, $\mu_i + \varepsilon_{it}$ represent the unobserved country-level effects and the error term, respectively. Our GMM estimation uses the lagged variables as well as the first-differenced variables as instrumental variables.

We use eight-year data (2004-2011) from purposively selected twelve African countries (Ghana; Algeria; Botswana; Egypt; Gabon; Lesotho; Mauritius; Senegal; South Africa; Togo; Zambia; and Nigeria). Selection of countries has been informed by availability of the metrics required for the study. Thus, every African country with the required number of metrics has been included in the sample. The study period (2004-2011) has been dictated by the limited data on the number of new businesses registered in a fiscal year which is our proxy for entrepreneurial activity. Data have been gathered from the World Development Indicators (www.worldbank.org) of the World Bank.

ESTIMATION RESULTS

To ascertain the presence or otherwise of multicollinearity problem in our model we first perform correlation analysis with the independent variables. The results are reported in Table 1. From the table it can be observed that the highest correlation is between entrepreneurial activity and economic growth. Generally, the correlations among the variables are within acceptable limits suggesting that multicollinearity may not be present in our model (Bryman and Cramer, 1997).

Table 1 Correlation Matrix

	LCFORM	LENTREACT	LINFL	LEGROWTH	LXM
LCFORM	1.000000	0.215432	0.036978	0.372357	0.331194
LENTREACT	0.215432	1.000000	0.324440	0.659551	-0.184527
LINFL	0.036978	0.324440	1.000000	0.024945	-0.182671
LEGROWTH	0.372357	0.659551	0.024945	1.000000	0.078427
LXM	0.331194	-0.184527	-0.182671	0.078427	1.000000

The results of the FMOLS estimation are reported in Table 2. The Adjusted R^2 of 0.98 indicates that the independent variables jointly explain about 98% variation in the dependent variable. This coupled with F -Statistic of 226.1537 significant at .0000000 suggests the appropriateness of our model.

Evidence in Table 2 demonstrates that there is a positive statistically significant relationship between entrepreneurial activity and financial development. This implies that in the long-run an increase in entrepreneurial activity is likely to facilitate financial development in the study countries. As entrepreneurs intensify their entrepreneurial activities, all things being equal, their

demand for financial services increases. And as they fall on the banking sector for financial assistance the sector experiences expansion in its lending activities.

Domestic investment proxied by Gross capital formation (CFORM) shows a positive statistically significant with financial development. Investment in fixed assets for production usually requires huge capital which one's personal sources may not be able to support. Seeking financial assistance from financial intermediaries is, therefore, predictable. Thus, as capital formation increases we expect it to catalyze the growth of the financial sector.

Evidence on demand-following hypothesis (i.e. economic growth preceding financial development) has been reported in Africa (Esso, 2010; Odhiambo, 2010; Quartey and Prah, 2008). However, the results in Table 2 indicate that contrary to this evidence, economic growth appears to undermine financial development in the study countries. The implication is that as the economies of these study countries grow demand for financial services reduces. This may be attributed to low propensity to rely on financial intermediaries for entrepreneurial exploits motivated by high costs of borrowing from financial intermediaries in the study countries.

Inflation is documented in the literature as having a negative impact on financial development (Ghazouani, 2004; and Bittencourt, 2008). The contention is that inflation stalls financial development by making intermediation more expensive. Evidence in Table 2 confirms this. Inflation has a negative statistically significant relationship with financial development, meaning an increase in inflation is likely to undermine financial development.

Claessens et al. (1998) show that opening banking markets enhances the functioning of national banking systems and boosts the quality of financial services which augur well for banking customers. Law and Demetriades (2006) show that liberalisation of both trade and capital flows is effective in facilitating financial development in middle income countries, but less effective in low income countries. Evidence in Table 2 suggests that openness to trade has a strong, negative statistically significant relationship with financial development, implying that as the economies of the study countries become more open to the rest of the world in terms of trade their financial systems are undermined. This may be attributed to the lop-sided international trade conventions and laws that tend to disadvantage African economies.

Table 2: FMOLS Regression Results

Dependent Variable: LCPS				
Variable	Coefficient	Std. Error	t-Statistic	p-value
C	6.493747	1.314815	4.938907	0.0000***
LENTREACT	0.094531	0.041425	2.281952	0.0262**
LCFORM	0.317798	0.109706	2.896807	0.0053***
LEGROWTH	-0.320360	0.123717	-2.589469	0.0121**
LINFL	-0.127473	0.031764	-4.013079	0.0002***
LOPEN	-0.589229	0.172385	-3.418105	0.0012***
R ² =0.99, Adjusted R ² =0.98 F-statistic=226.1537				
Prob.(F-statistic)=0.000000 N=82				

This table presents the FMOLS regression results . * Figures in parentheses are probability values. Note: ***, ** and * represent 1%, 5% and 10% levels of significance

ROBUSTNESS CHECK

To test the robustness of our findings from FMOLS, our regression model is re-estimated with GMM estimator. This has been to deal with perceived weaknesses in FMOLS such as endogeneity problem that might have biased our results. The results of the GMM estimation are reported in Table 3. The results confirm the results from the FMOLS underscoring the robustness of our findings.

Table 3: GMM Estimation Results				
Dependent Variable: <i>LCPS</i>				
Variable	Coefficient	Std. Error	t-Statistic	p-value
C	6.060569	1.541915	3.930547	0.0003***
<i>LENTREACT</i>	0.096293	0.052669	1.828254	0.0745*
<i>LCFORM</i>	0.412047	0.131496	3.133525	0.0031***
<i>LEGROWTH</i>	-0.312406	0.157971	-1.977611	0.0544**
<i>LINFL</i>	-0.157424	0.040268	-3.909418	0.0003***
<i>LOPEN</i>	-0.559155	0.201223	-2.778782	0.0081***
R ² =0.99, Adjusted R ² =0.98 N=66				

Instrument List: LCPS (-1), LENTREACT (-1), LCFORM (-1), LEGROWTH (-1), LINFL (-1), LOPEN (-1), ALCPS, ALENTREACT, ALCFORM, ALEGROWTH, ALINFL, ALOPEN. Figures in parentheses are probability values. Note: ***, ** and * represent 1%, 5% and 10% levels of significance

CONCLUSION AND POLICY IMPLICATION

The study is focused on testing whether entrepreneurial activity is a significant determinant of financial development in 12 African countries using Fully Modified Ordinary Least Squares (FMOLS) and Generalized Method of Moments (GMM) estimation techniques. The estimation results indicate that entrepreneurial activity has a positive statistically significant relationship with financial development in the study countries. This finding provides grounds for us to conclude entrepreneurial activity supports financial development in Africa. The policy implication is that to the extent that entrepreneurial activity promotes financial development, implementation of policies and programmes that promote entrepreneurial activity may translate into financial development.

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