

# THE FINANCE AND GROWTH DEBATE IN AFRICA: WHAT ROLE FOR FINANCIAL INCLUSION?

Prof Sylvanus I Ikhide

November 2015

*THE FINANCE AND GROWTH DEBATE IN AFRICA: WHAT ROLE FOR FINANCIAL INCLUSION?*

Inaugural lecture delivered on 26 November 2015

Prof Sylvanus I Ikhide  
University of Stellenbosch Business School  
Faculty of Economic and Management Sciences  
Stellenbosch University

Editor: SU Language Centre  
Printing: SUN MeDIA  
ISBN: 978-0-7972-1599-3  
Copyright © 2015 Sylvanus I Ikhide



## ABOUT THE AUTHOR

Sylvanus Ihenyen Ikhide is professor of Economics and Head of the Doctoral Programme in Development Finance at the University of Stellenbosch Business School, Bellville, South Africa. Prior to holding these positions, he was Nedbank chair in Economics at the University of Fort Hare (2008–2011). He also served as economic advisor to the Bank of Namibia in Windhoek (1998–2004), and taught at universities in Nigeria, Botswana and Namibia. He has undertaken consultancy assignments with the UN Economic Commission for Africa, the African Development Bank, the World Bank, UNDP, NEPAD, SADC, SACU and MEPMI. He is a member of several networks including the African Economic Research Consortium (AERC), and the Poverty and Economic Policy networks (PEP).

A Nigerian by birth, Professor Ikhide attended the University of Ibadan at Ibadan in Nigeria from 1975 to 1978, where he graduated with a Bachelor's degree in Economics and Education. He then continued to study for his MSc degree in Economics from 1980 to 1982 at the University of Ife (now Obafemi Awolowo University) in Nigeria, where he was also the recipient of a Federal Government of Nigeria Scholarship. He returned to the University of Ife to study for his PhD in Economics from 1983 to 1987. On completion of his PhD, he joined the Economics Department of the Obafemi Awolowo University in 1988 as lecturer and rose to the position of reader (associate professor) in 1995. He joined the University of Botswana as full professor in 2007 after a six-year stint with the Central Bank in Namibia. He also holds an MSc in Financial Management from the University of London (2001–2002).

Professor Ikhide has held numerous fellowships, including the Postdoctoral Fellowship of the UN Economic Commission for Africa, Addis Ababa, Ethiopia (1991–1992), a Visiting Research Fellowship at the Institute of Developing Economies in Tokyo, Japan (February 1995 – September 1995) and Visiting Fellow at the Institute of Development Studies, University of Sussex (April 1996 – July 1996). Professor Ikhide has authored numerous journal articles and monographs, and co-authored books.



# THE FINANCE AND GROWTH DEBATE IN AFRICA: WHAT ROLE FOR FINANCIAL INCLUSION?

---

## ABSTRACT

**F**inancial development has been widely acknowledged as a contributor to economic growth. Recent evidence however reflects a dwindling of this relationship, especially in economies with high financial depth ratios. This paper reviews the author's work in this field dating back 30 years. Although most literature supports the link between finance and growth, the robustness of the evidence seems to have waned mainly in response to financial instability occasioned by financial liberalisation and excessive credit growth. While financial depth may no longer be strongly correlated with economic growth, we provide evidence of the crucial role that access to finance could play in promoting financial development and bootstrapping economic growth in Africa. In particular, we emphasise the role of microfinance in enhancing access to finance by individuals and SMMEs. Properly designed, microfinance institutions would help promote economic growth and reduce poverty in Africa.

## INTRODUCTION

**I**t is with deep gratitude and thanks to God that I stand before this venerable assembly to present this inaugural address this evening. Expectations are very high on what academic research should achieve. We expect that academic research should enable us to understand the world and possibly change the world by impacting on policy. This address focuses on the role of finance in economic growth especially in developing African countries, a subject that has formed the core of my intellectual journey in the past 30 years. It is a subject that has been deliberated upon and hotly debated in academic literature for many years. In simple terms, does the level of financial development in a country matter for economic growth to take place? Does finance, like other factors of production such as labour, capital, land and technology have an independent, causal effect on economic growth? Why, in spite of the huge developments in the financial sectors of many African countries in the past three decades, has growth remained abysmal? To what extent is this growth outcome related to financial sector policies implemented in these countries or to structural impediments that have in themselves frustrated financial development? What is the implication of recent findings for financial sector policy in Africa? We do not expect

to provide all the answers in this short space, but we do hope our contributions will help us reconsider the way we view financial sector policies in Africa.

The discussion this evening will focus on three key areas: first, we will attempt to revisit empirical evidence on the relationship between financial development and economic growth in the past and how this evidence has changed through the years. Second, we will attempt to unravel some of the factors that may have accounted for the results we have provided earlier. Specifically we will focus on financial liberalisation as canvassed in the 1980s and early 1990s and how they have modified the expected outcomes of the impact of finance on economic growth with dire consequences for banking stability and inefficiency in the banking system. Finally, we will provide evidence to support the role of financial inclusion in the growth process. Given the poor performance in many African countries on access to finance, our focus here will be to try and answer the question: Will financial inclusion be a game changer and redefine the role of finance where financial deepening has failed?

## I. FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH: NEW EVIDENCE

**C**ontemporary discussions on the role of finance in economic growth build on the endogenous growth theory. The main thrust in these models identifies at least two channels through which finance affects the real economy. Financial development is assumed to occur as a result of increased financial intermediation, and to a lesser extent through financial innovation and government policies. The first channel involves the efficiency with which savings are allocated to investment. As banks engage in increased intermediation, they are likely to become more efficient at what they do, and thus the spread between their lending and borrowing rates falls. Second, an increase in financial intermediation can affect growth if it improves the allocation of capital. An important function of a financial intermediary is to allocate funds to those projects where the marginal product of capital is highest. Thus, an improvement in the allocation of capital translates into higher growth, because it increases the overall productivity of capital. As summarised in Levine (2005), the main channels through which finance is expected to influence growth include: producing information; allocating capital to

productive uses; monitoring investments and exerting corporate control; facilitating trading, diversification, and management of risk; mobilising and pooling savings; and easing the exchange of goods and services.

The theoretical explanation of the linkage between finance and economic growth has followed four main patterns. First, there is the supply-leading hypothesis which posits that the direction of causality runs from the financial sector to the real sector (King & Levine, 1993; Levine & Zevros, 1998; Demirgüç-Kunt & Maksimovic, 1998; Levine, Loayza and Beck, 2000; Calderón and Liu, 2003). Second, there is the demand-following hypothesis which postulates that economic growth leads to financial development. The growth in the real economy induces increased demand for financial services (Robinson, 1952; Patrick, 1966; Demetriades & Hussein, 1996). Third, there is the bi-directional causality hypothesis which is a combination of the supply-leading and demand-following hypothesis (Demirgüç-Kunt & Levine, 2001; Luintel & Khan, 1999). Finally, there is the independent hypothesis which maintains that financial deepening and economic growth are causally independent (Habibullah & Eng 2006; Atje & Jovanovic, 1993).

Empirical evidence on the relationship between finance and growth has been mixed. The variety in results stem from a number of factors ranging from the methodology adopted by researchers (cross-sectional versus time series studies, dynamic panel data, etc.), the definition of financial depth (credit/GDP, M3/GDP, liquid liabilities/GDP, stock market/GDP, etc.), and the time frame of the study (pre-liberalisation/post liberalisation of financial markets, pre-financial crisis and post crisis), etc.

Of particular interest to us are studies conducted in sub-Saharan Africa. Financial systems in Africa are mostly underdeveloped and to a large extent dominated by the banking sector. For a greater part of the 1980s and 1990s, growth performance in these economies was abysmal. A positive outcome for the role of finance will go a long way in shaping policy prescription and outcomes. The results in support of finance-led growth have mostly been lukewarm. While most studies have supported a demand-following outcome (Akinboade, 1998; Odhiambo, 2005, 2007, 2008; Aziakpono, 2011), other studies (Odedokun, 1996; Agbetsiafa, 2003; Ghirmay, 2004; Adjasi & Biekpe, 2006; Enisan & Akinlo, 2007) found strong support for the supply-leading phenomenon.

This author in most of his works that predated most of the aforementioned studies has investigated not only the relationship between financial development and growth in sub-Saharan Africa (Ikhide, 1987, 1991) but also the relationship between financial development and the sources of growth in terms of private savings rates (Ikhide, 1993, 1996), physical capital accumulation (Ikhide, 1988), and efficiency of investment (Ikhide,

1992). The primacy of the efficiency of the banking system for economic growth has also been subjected to substantial investigation by this author (Ikhide, 2008, Ikhide and Yinusa, 2012; Maredza and Ikhide 2013a, b).

From these investigations, though the debate on the direction of causation continues to generate controversies, there is undoubtedly substantial evidence of a strong correlation between the exogenous components of financial development and long-run economic growth. These findings accord with the claims that well-developed financial systems enhance economic growth.

## Financial sector reforms in Africa and their consequences for the finance-growth nexus

In the 1980s and early 1990s, many countries in Africa embarked upon International Monetary Fund (IMF)/World Bank-sponsored economic reform programmes in response to severe economic downturns in these economies. A major component of these reforms was the reform of the financial sector in what was dubbed financial liberalisation. First, the financial sector in many of these countries was coterminous with the banking sector and, given their low savings rates, the mobilisation of savings to bridge the gap between savings and investment was seen as a natural sequel to economic growth. Second, the structure of the financial sector can affect macroeconomic performance (Gertler, 1988). The poor performance of exports, fiscal outcomes and FDI was perceived as not unconnected with the performance of the financial sector. Third, the IMF/World Bank embarked on stabilisation policies such as exchange rate reforms and fiscal consolidation whose performance hinged critically on the financial system. The speed, sequence and timing of specific components of financial sector reforms were seen as a major determinant of the outcomes of stabilisation policies. Thus, financial sector reforms aimed at increasing the size, improving the efficiency and raising the diversity of the financial system of reforming economies became a necessity. In its earlier stages, financial liberalisation was conceived mainly in terms of moving towards market-determined interest rates, as well as market-determined prices on all classes of financial products, banking systems characterised by symmetric entry and exit conditions to all participants, increasing internationalisation or the opening up of domestic markets to international competition and limited barriers to the introduction of new financial products.

In most of Africa, financial liberalisation was operationalised through allowing market-determined interest rates to prevail during the reform period. Financial liberalisation was expected to bring about a number of benefits. First, higher real deposit rates

## Evolution of Nominal deposit rate in selected African Countries during Financial Repression

Evolution of Real Deposit rate in selected African Countries									
	1983	1985	1986	1987	1988	1989	1990	Mean	Deviat.
Botswana	1.4	0.4	-2.3	0.4	-3.8	-2.1	-5.8	-1.8	2.3
Egypt	-6	-2.1	-13.9	-9.7	-7.6	-10.3	4.8	-7.8	3.6
Gambia	-2.1	-2.6	-54.2	-6.6	5.8	4.9	-2.8	-8.2	19.1
Ghana	-111.8	8.1	-6.1	-18.3	-12.2	4	N/A	-20.9	37.9
Kenya	-2	0.3	5.3	4.4	0.7	1.8	0.2	1.3	2.4
Malawi	0.7	-0.7	-0.7	-9.6	-18.0	-3	0.3	4.6	6.2
Nigeria	-15.8	4	4.1	1.8	12.95	-9.4	19.78	-2.2	7
Tunisia	-4.4	-2.6	0.9	0	1	0.7	N/A	-0.8	1.8
Zimbabwe	-5.3	-2.2	-2.2	-2.7	2.6	-2.5	-6.2	-2.6	2.6

Figure 1: Evolution of Nominal deposit rate in selected African Countries during Financial Repression  
Source: Author's computation

were expected to stimulate financial savings and deposit mobilisation (see Figure 1). Second, higher lending rates should encourage a more efficient allocation of loanable funds by reducing opportunities for borrowing at low or negative real interest rates. Third, liberalisation should eliminate the distortions arising from a variety of other administrative controls, such as those which segmented financial markets between banks and non-bank financial institutions induce, and should promote greater competition in financial markets. High interest rates by promoting financial deepening could help in the expansion of domestic capital formation and hence stimulate economic growth (Brownbridge & Harvey, 1998).

A survey undertaken by Brownbridge (1998) and Daumont, Gall, and Leroux (2004) shows that systemic banking crises occurred in many countries in sub-Saharan Africa (Nigeria 1991–1995; Kenya 1993–1995; Uganda 1990) after they embarked on financial liberalisation policies. Other countries such as Cameroon (1987–1993), Côte d'Ivoire (1988–1991), Ghana (1982–1989) and Senegal (1988–1991) embarked upon liberalisation in the middle of banking crises. The severity of these crises was high in some countries like Cameroon, Côte d'Ivoire, Ghana, Senegal, Nigeria and Uganda, where the share of nonperforming loans in total bank loans exceeded 40%, whereas crises were less severe in Kenya with the share of nonperforming loans less than 20% (Fowowe, 2013; Also see Figure 2).

Financial liberalisation had some positive spin-offs. Deposits in commercial banks grew as a result of the “financialisation of savings” (Ikhide, 1992, 1993). The

snag was the less than expected performance of credit. Credit grew but not by as much as the growth in deposits. This was attributed in most cases to the growth in government borrowing and central bank debt. Post-crisis bank restructuring as described later, including replacing weak bank credits and government deficit financing, curtailed growth in credit to the private sector (given the limited performance of private sector credit which is pivotal to economic growth, it is not surprising that many countries in Africa did not witness rapid growth during the period). Thus the growth expectations from financial liberalisation were not realised.

With the benefit of hindsight, financial liberalisation may have increased financial deepening but at very high cost. The exact role of deposit interest rates in the process of financial deepening, the supply of loanable funds and the enhancement of the efficiency of investment was not properly investigated in some of these economies prior to the adoption of sweeping economic reform measures. The policy of financial liberalisation was introduced when most countries of sub-Saharan Africa were undergoing severe macroeconomic adjustments occasioned by strong macroeconomic imbalances. If high deposit rates are inflationary, the mobilisation of financial savings through a policy of high deposit rates may be self-defeating as an unstable price level may serve as a disincentive to holding financial assets, thus impeding financial deepening and, hence, economic growth. Alawode and Ikhide (1997) and Ikhide and Alawode (2002) argued that improper sequencing of financial sector reforms was a major factor in the failure of policy reforms in Nigeria in the 1990s. Appropriate sequencing



## Banking Crises Episode in African Countries

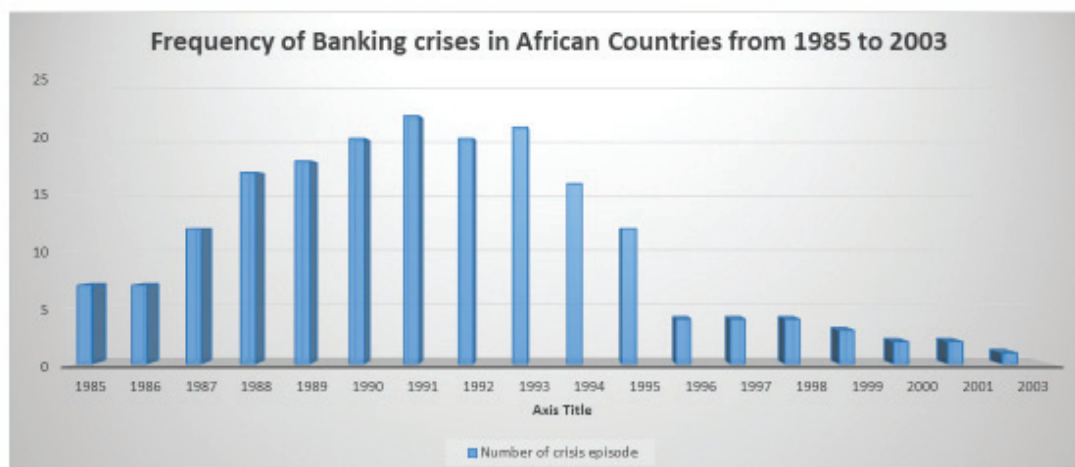


Figure 2: Bank Crisis Episode in African Countries  
Source: Laeven and Valencia (2008)

would have been, first, that financial sector reforms be preceded by stabilisation policies and, second, that financial liberalisation itself be sequenced and properly timed. In the first case, huge fiscal deficits, persistent depreciation of the exchange rate and tight credit policies may worsen an existing inflationary situation and make a realistic level of interest rates difficult to achieve. In the second case, the restructuring or liquidation of defunct financial institutions and the strengthening of regulatory and supervisory activities should precede the chartering of new banks. Arguing in a similar vein, Brownbridge and Harvey (1998:217) concluded, after a critical review of financial sector policies in 11 sub-Saharan African countries, that the impact of financial liberalisation has “undoubtedly been disappointing”.

### The finance-growth nexus and financial fragility in sub-Saharan Africa

Our first encounter with how financial liberalisation can induce financial crisis started with a review of the liberalisation experience of selected developing countries in the early 1990s (Alawode & Ikhide, 1997). This study predates the thrust of the literature on financial development and financial fragility which became popular at the beginning of the current decade. In the wake of liberalisation, many countries have suffered sharp increases in interest rates, bankruptcies of financial institutions, and worsening inflation. Governments have been compelled to rescue failing banks and re-impose controls. We argued that these problems can be traced to the failure to revamp the bank prudential regulatory and supervisory framework before commencing deregulation, plus poor timing and sequencing, and the lamentably slow speed of financial reforms. It is contended that these factors are powerful

determinants of whether financial liberalisation succeeds or fails. Liberalisation increased capital inflows and deposits, which allowed rapid growth in credit to weak public and private enterprises and the government, as well as to real estate. Over time, the quality of the lending deteriorated (Demirgüç-Kunt & Detragiache, 2002). Eventually, corporate bankruptcies, banking problems, and runs on banks and currencies developed, particularly when the rapid credit growth and inflows slowed. Real growth fell and real interest rates rose. This was compounded by a weak and unsustainable fiscal stance in many of these countries. Principally, it is observed that for financial liberalisation to be a success, it must be gradual and preceded by the strengthening of the bank supervisory and regulatory framework. When it proceeds too fast, deepening financial institutions can lead to economic and financial instability. It encourages greater risk-taking and high leverage, if poorly regulated and supervised. In other words, when it comes to financial deepening, there are speed limits. This puts a premium on developing good institutional and regulatory frameworks as financial development proceeds. It is instructive that after the global financial crisis the relationship between financial deepening and financial stability remains a virile discussion in policy circles, to which we will allude briefly later. This strand of literature focuses on the channels through which a high ratio of private sector credit to GDP is associated with a higher probability of future systemic banking crises (World Bank, 2015)

Finance and economic growth: What are the emerging issues?

From our discussions so far, it would appear that the finance-growth nexus is fairly well established in the literature in spite of the nuances created by poor financial liberalisation process. Recently however, the posited



relationship between finance and growth has been called into question by an emerging body of research showing that the previously documented positive relationship disappears or becomes reversed over time. (Dabs & Guttman, 2010; Arcand, Berkes & Panizza, 2012, Rousseau & Wachtel, 2011; Chen, 2012). These studies show that the effect of financial development on economic growth is bell-shaped: it weakens at higher levels of financial development. The increased incidence of banking crises has been identified as contributing to a “disappearing” empirical link between finance and growth (Rousseau & Wachtel, 2011). Recent studies also show that there is a point beyond which additional deepening could actually reduce growth – the so-called “too much finance” effect (Arcand, Berkes & Panizza, 2012); they point to nonlinearities related to financial depth. Some new studies find that the contribution of financial development to growth differs across regions, countries, and income levels (Barajas, Chami & Yousefi, 2013; Nili & Ras 2007; Khan). Aizenman, Jinjarak and Park (2015), having examined sector-level data in 41 economies, also found that finance increases growth, but only up to a point, in addition to having heterogeneous effects across income levels.

This weakening effect stems from financial deepening, rather than from greater access or higher efficiency. The empirical evidence also suggests that this weakening effect primarily reflects the impact of financial deepening on total factor productivity growth, rather than on capital accumulation.

This new body of literature has not been well investigated in relation to sub-Saharan Africa. To test the emerging body of literature, we used a dynamic panel-data methodology to estimate a cross-country growth regression for 21 selected sub-Saharan African countries for which we have complete sets of data. This methodology makes it possible to control for country-specific effects and to account for the potential endogeneity of the explanatory variables. Our results do not confirm the existence of a positive relation between financial development and growth, be it through savings mobilisation or through the quality of its allocation. We thereafter used a multiple equilibria model to show that there are threshold effects. Our results show that the finance/per capita GDP relationship does not hold for the period prior to 1980 or for the period after 2005 in our sample of countries. The observable behaviour for 1970–1980 is understandable given that most countries in our sample suffered from financial repression during this period. The results for the period 2005–2013 are attributable to the fact that, under a certain level of financial development, growth is lower and the catching up is more difficult (see Appendix 1a and 1b).

Our results in this analysis are in sync with the findings of the IMF (2015). The IMF study establishes a

cut-off point (0.7) on its Financial Development Index which is a composite of financial sector growth at which financial development begins to have a negative influence on economic growth. It is not very clear how this occurs, but a number of explanations have been offered. First, it is possible that too much finance increases the frequency of booms and busts and leaves countries ultimately worse off and with lower real GDP growth. Also, too much finance could lead to the diverting of talent and human capital away from productive sectors and towards the financial sector. It has also been argued that a very large financial sector may be particularly susceptible to moral hazard or rent extraction from other sectors, both of which would lead to a misallocation of resources. It is possible for this negative impact of finance on growth to be experienced even in well-regulated financial markets (see diagram).

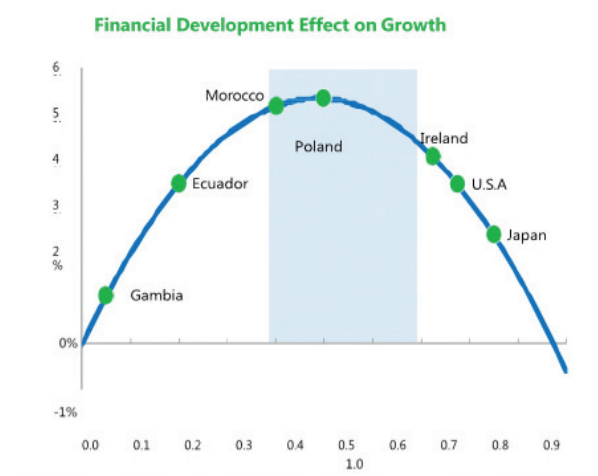


Figure 3: Financial Development Effect on Growth: Selected Economies.

Source: Rethinking Financial deepening (IMF, 2015)

The evolution of the credit/GDP ratio for a couple of African economies calls for caution in this regard. Two strands of such trends can be identified. There are countries where credit/GDP ratios have evolved naturally and surpassed the cut-off point identified earlier (0.7). These include South Africa, Namibia, Seychelles, Mauritius and Tunisia (see Figure 4).

The second strand consists of countries where there has been very rapid credit growth in the last decade: In Benin and Swaziland, credit/GDP growth almost doubled. Malawi, Mali, Niger, Nigeria, São Tomé and Príncipe, Sierra Leone, Sudan, Tanzania and Uganda credit to GDP increased threefold and more. In Angola, private credit grew by a factor of more than 15 fold, or 1500% (Griffith-Jones and Ewa Karwowski and Nshlati Hlungwane, 2013). A key dimension of financial efficiency is the extent to which the financial system channels resources to productive sectors of the real economy. In South Africa and Mauritius, the greater proportion of the increase in credit finances mortgages or household debt.

## Financial Depth Indicators for some selected Advanced Financial Economies

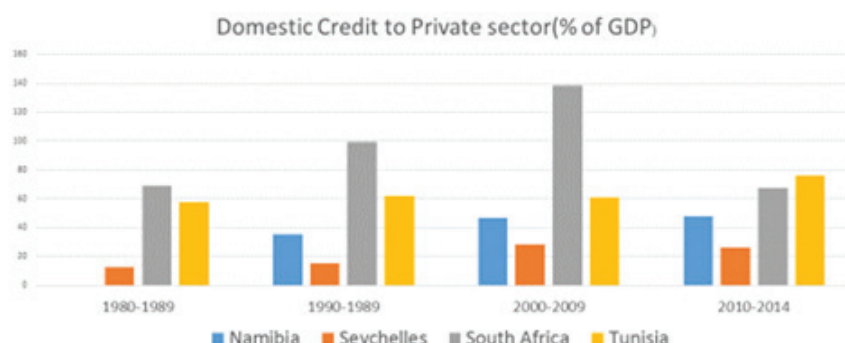


Figure 4: Financial Depth Indicators for some selected Advanced Financial Economies.  
Source: Author's computation

One finding of this study which is of interest to us is that the negative effect of finance on growth at high levels of financial development only affects the depth component and not the access component of financial development. While access has a strong linear relationship with growth, efficiency which is a function of depth of financial markets does not. This implies that countries that may have reached the maximum benefits in terms of growth from deepening financial institutions and markets may still reap further growth benefits from better access. This result points to a major factor for financial market development in sub-Saharan Africa.

## 2. FINANCIAL INCLUSION: IMPLICATION FOR DEPTH AND ACCESS

We repeated our estimation on finance and growth reported earlier by including a measure of financial inclusion in our set of explanatory variables. The financial inclusion variable is not only significant but also more noteworthy in that, when it is included with the financial depth variable in our sample for the advanced financial markets, it boosts the significance of the depth variable (see Appendix 2).

The World Bank (2006) identifies a two-fold problem that financial institutions have in reaching difficult markets. This is “the difficulty experienced by intermediaries to deliver their products to poor or remote customers let alone adapt product design to the needs of customers at an affordable cost and difficulties in assessing credit worthiness and enforce contracts”. The first constraint is connected to the low geographic density of population, pronounced economic isolation especially in rural areas, and lack of competition. These impose avoidable cost penalties on consumers. The second constraint is attributable to the poor quality

and scarcity of information about individual risks, high incidence of shocks (weather, health, social disruption, etc.), and weak legal, judicial and other information and contract enforcement infrastructure.

Financial development is defined as a combination of depth (size and liquidity of markets), access (ability of individuals to access financial services), and efficiency (ability of institutions to provide financial services at low cost and with sustainable revenues). While the issue of depth has received substantial attention by policy makers in Africa, the record on financial inclusion, particularly usage, has not. The number of adults with at least one account in financial institutions has increased, credit and debit cards have become more popular, and the number of enterprises with check and savings account facilities has also improved. However, actual usage is still low and costs are high. Less than 20% of the adult population with bank accounts have access to credit in formal financial institutions.

Large amounts of credit do not always correspond to broad use of financial services as credit may be concentrated among the largest firms and highest income individuals. In South Africa, for instance, only 35 percent of adults in the poorest 20 percent of income earners have a formal account, while 78 percent of those in the richest 20 percent do. Young adults and the poor were much less likely to hold an account in a formal institution. The former were also much less likely to hold a formal loan. Only 25 % of small companies, with less than 20 employees, held a bank loan or a line of credit in 2010, as against 72% of large firms (World Bank, 2013). Disparities in financial access are one potential explanation for persistent income inequality.

In a pooled study of five countries, Ghana, Kenya, Ethiopia, Tanzania and Nigeria, we provided evidence to the effect that a 10% point reduction in the population per bank branch will lead to close to a 7.7% increase in

aggregate domestic savings (Ikhide, 1992). A reduction in the population per branch increases financial savings by helping to mobilise idle cash balances circulating outside the banking system. Banking infrastructure is still grossly underdeveloped in most of Africa. For instance, one bank office still caters for about 250 000 people in Uganda, 67 000 in Kenya, 76 923 in Benin and 60 000 people in Nigeria. Related to this to some degree is the lopsided nature of the distribution of the available bank offices. Most of the bank offices are located in the urban areas. In Nigeria, for example, about 60% of the bank branch network is located in urban centres. The population per bank branch is about 24 960 for the urban areas and 138 200 for the rural areas. The situation is worse in Tanzania where about 61 451 and 198 030 persons share one bank in the urban and rural areas respectively.

There is ample evidence that limited access to credit poses a substantial obstacle to entrepreneurship and firm growth, especially among small and young firms (Banerjee & Duflo, 2007; Beck, Demirgüç-Kunt & Maksimovic, 2005; Beck and Dermiguc-Kunt, 2006; Evans & Jovanovic, 1989). The vast majority of firms around the world are microenterprises. About 75% of formal microenterprises and SMEs in developing economies are microenterprises – mostly in agriculture. Finance is often touted as a major constraint to microenterprise development, especially in developing countries. The financing gap is most acute for firms that seek to expand from micro level to small-scale level. These enterprises are usually too large to make use of informal lenders and too small for formal banks. Most of these enterprises are in the informal sector of the economy which contributes more than 50% to total output and up to 75% to employment in many developing countries.

Given the importance of SMEs in creating employment, the lack of financial infrastructure supporting their activity in African financial systems is a major drawback for development. International financial indicators show that African businesses in general are disadvantaged owing to less access to finance than competitors in other regions. Concurrently, SMEs enjoy particularly poor access to sources of finance, leaving them with internal cash flow as the main source for investment finance. As a consequence, enabling African SMEs to better access financing sources has the potential to strengthen and accelerate growth, if done on sustainable grounds under adequate regulation.

Using data from the World Bank Enterprise Surveys (WBES), which cover more than 130 000 firms in 127 countries, African Development Bank (AfDB) (2013), reported that, on average, the percentage of enterprises with a bank account (across all firm size groups) in sub-Saharan African countries is comparable to or greater than the percentage of enterprises with a bank account in all other developing economies. Eighty-three per cent of small-sized enterprises and 94% of medium-sized

enterprises in Africa report having a bank account, compared to 87% of small-sized and 93% of medium-sized enterprises in other developing economies. Yet, firms in sub-Saharan Africa have notably limited access to external funding. WBES data show that, on average, only 22% of enterprises have a loan or a line of credit. In comparison, the average of enterprises with a loan or a line of credit in other developing economies excluding Africa is 43%. The obstacles African SMEs experience in their domestic financial systems are mainly concentrated around insufficient support by financial and banking institutions lacking development of equity and bond markets and alternative sources of finance. Therefore, recent developments of deepening African financial markets might help SME growth if successfully and sustainably channelled into this segment. International indicators such as the capital access index and domestic analysis via enterprise surveys, indicate that between 60% and 70% of SMEs in sub-Saharan Africa need loans, however only 17% of small and 31% of medium-sized firms actually have access to finance. As a consequence, firms in sub-Saharan Africa have to finance a high proportion of investment through internally generated cash flows.

## Financial inclusion: What type?

From the foregoing, financial inclusion is an important consideration for economic growth because it plays a dual role. While creating access especially to operators in the informal sector, it will enhance financial deepening thus embracing both breadth and depth dimensions of financial development. However, in concluding, we need to sound a cautionary note in view of the failures of well-conceived policies in the financial sector in Africa in the past.

Financial inclusion, to be relevant for economic development, must focus on the core elements of financial intermediation such as savings mobilisation, and asset transformation, risk mitigation and enhancing efficiency in the corporate sector by monitoring management and exerting corporate control. Policies of financial inclusion that rely mainly on transactions rather than on the whole gamut of intermediation while creating access may not translate into usage and may not necessarily lead to financial deepening and hence economic growth.

While different strategies may exist for increasing access to finance in Africa, my obsession with microfinance both as a mechanism for reducing poverty and inequality, and promoting entrepreneurial finance must be understood against the background of my teaching and research in the past few years since I joined the University of Stellenbosch Business School. Although formal microfinance in Africa has increased during the last two decades through the expansion of the scope of formal institutions especially commercial banks

(downscaling, linkage programmes), emergence of new formal institutions focused on microfinance, reforms of state-owned financial institutions and the introduction of new microfinance programmes through governments, these institutions concentrate mostly on providing credit facilities. Savings mobilisation has yet to receive adequate attention. Government sponsored microloan programmes are very common in many sub-Saharan African countries because of the political attractions that such schemes hold more for vote catching in electioneering campaigns and less for poverty reduction. Microfinance programmes that target enterprise finance rather than consumption have better chances of reducing poverty through boosting employment. This is also why the present preoccupation with mobile phone banking in many parts of Africa must now begin to migrate to the next phase involving credit creation rather than the obsession with money transfers. Many mobile money users are not otherwise included in the formal financial system – in Kenya 43% of adults who reported having used mobile money in the past 12 months (prior to the survey in 2012) did not have a formal account and in Sudan 92% did not (AfDB, 2013). In the same vein, the present preoccupation with microloans in many sub-Saharan African economies might be misplaced. Microloans do not translate into microentrepreneurs.

In the African context specifically, microfinance presents a viable opportunity to drive financial inclusion for the unbanked and underserved, as most African financial systems are still nascent and incapable of addressing the more pressing challenges of rural poverty and unemployment. Microfinance, broadly defined to include microloans, microsavings, microinsurance and remittances/money transfers, should receive policy focus. It has been proved that microfinance, so defined, improves access and enables the poor to manage and build their asset base gradually. Microfinance institutions are critical providers of finance to small and microenterprises that are unable to raise credit from commercial lenders owing to information asymmetry and the high costs associated with lending. Micro-, small- and medium-scale enterprises are the biggest job creators and contributors to economic growth in many developing countries; and finding alternative ways to finance them has placed microfinance in the epicentre of the financial inclusion debate (Robinson, 2001).

With the general trend in microfinance placing emphasis on financial sustainability, microfinance institutions can fully recover costs and make profits. Such commercially oriented microfinance institutions should finance their loan portfolios through savings mobilisation, commercial debt and retained earnings, and should charge interest rates that will enable cost recovery from income generated “from the outstanding loan portfolio, and to reduce these costs as much as

possible” (Hermes, N., Lensink, R. & Meesters, 2008:2), and in this manner “generate a profit” (Robinson, 2001). Literature supports the view that sustainable microfinance will have outreach and impact, hence the push towards sustainable, commercially oriented microfinance institutions (Conning, 1999:51; Cull & Morduch, 2007:F107; Manos & Yaron, 2009:101; Robinson, 2001). Quayes (2012:3432) takes this argument further by concluding that “attainment of financial sustainability is not an impediment to outreach efforts, and may actually facilitate greater depth of outreach.

When microfinance institutions that leverage on deposits are regulated, they are generally sustainable and do expand outreach (Bayai & Ikhide, 2015). An enabling regulatory environment not only makes microfinance institutions sustainable but also enables them to grow.

### 3. CONCLUSION

First, the analysis in this paper confirms the positive relationship between financial development and growth. However, the linear relationship between economic growth and financial development breaks down at higher levels of financial development. A similar non-linear relationship arises for economic stability. Second, the effects of financial development on growth and stability show that there are trade-offs, since at some point the costs outweigh the benefits. Most sub-Saharan African economies, however, are still in a favourable region where further financial development promotes both higher growth and stability. Interestingly, the weakening effect on growth at higher levels of financial development stems from financial deepening, rather than from higher access or greater efficiency. South Africa, Mauritius and Tunisia stand out as countries with high credit/GDP ratios, depth and efficient financial institutions, but could gain from greater access to both institutions and markets. Other middle-income African economies have room for developing both markets and institutions. One factor that stands out clearly is that sub-Saharan African economies will greatly benefit from expanding access to both individuals and firms, especially SMEs. Greater financial market access will boost financial deepening.

Third, there is an avenue for pursuing financial development that entails very few or no trade-offs with financial stability. Indeed, effective regulation and supervision promote financial development and financial stability. And fourth, there is no ‘one-size-fits-all’ in the sequencing of institutions and markets, but, as economies evolve, the relative benefits from institutions decline and those from markets increase. The importance of commercially sustainable, well regulated microfinance institutions in a market that is dominated by an informal financial sector cannot be overemphasised in the context of Africa.



Financial sector policies in many African countries emphasise financial inclusion with little reference to the role of microfinance. The informal sector contributes substantially to output and employment in these economies and microenterprises constitute major actors in this sector. Efforts to bootstrap growth in these economies must address the issue of finance for micro-, small- and medium-scale enterprises given that traditional forms of finance such as commercial banks and equity markets would not be able to operate in this segment of the economy because of issues with scale, population density, risk resulting from asymmetric information, collateral requirements, and the opacity of information. Recent developments in the regulatory sphere especially prudential regulation regarding risk-weighted assets and regulatory capital requirements (Basel II and III), the prospect for a massive turn around in bank financing for microenterprises do not look attractive.

Microfinance institutions have emerged in Africa largely to meet the unfulfilled financing needs of the self-employed and of micro-, small- and medium-scale enterprises. For such endeavours to develop, fledgling entrepreneurs must have long-term access to capital. In most of the surveys on this sector, access to finance and energy feature prominently on the list of SMME's needs. Microfinance institutions have been able to fill this demand because they focus their loan analysis on clients' character, cash flow, and commitment to repay the proposed loan, rather than on collateral or business experience. In this way, microfinance institutions take into account the special characteristics of the new private sector in this region. Commercial banks either do not know or cannot practice the economics of lending to the poor. What this calls for is a well-articulated microfinance strategic framework in these economies to complement overall financial sector development.

Let me end this inaugural address the way I started. The Almighty God has been my all in all these past years. I give him my heartfelt thanks today as always. I am deeply appreciative to my loving wife, Dr Priscilla Ikhide who through the years has borne without complaints all my excesses in my bid to reach the pinnacle of my career. And to our daughter, Ososeno Ikhide, I hope after this inaugural lecture you will stop to doubt my status as a Professor because I am unable to answer your many questions. I owe a debt of gratitude to my students past and present. The subject matter of this inaugural address began with my first graduate student in 1988 who co-authored most of my earlier publications in this field. It is no surprise therefore that the topic resonated in a PhD colloquium in August this year. Finally, I sincerely appreciate the contributions of all the institutions that have molded me through the years. My first tooth at research was cut at the Department

of Economics, Obafemi Awolowo University, Ile-Ife, Nigeria. The Bank of Namibia and the Macroeconomic and Financial Management Institute of Eastern and Southern Africa (MEFMI) taught me to do research that has policy relevance. The University of Stellenbosch where I have taught Microfinance in the past five years provided closure to my enquiries of 30 years on what type of finance can lead to economic growth and reduce poverty. And to my listeners today, I am eternally grateful to you all for finding time to come. God bless.

## References

- Adjasi, C.K. & Biekpe, N.B. 2006. Stock market development and economic growth: The case of selected African countries. *African Development Review*, 18(1):144–161.
- African Development Bank (AfDB) (2013); Financial Inclusion in Africa, edited by Thouraya Triki Issa Faye AfDB, Abidjan.
- Agbetsiafa, D.K. 2003. The finance growth nexus: Evidence from sub-Saharan Africa. *International Advances in Economic Research*, 9(2):172–172.
- Aizenman, J., Jinjarak, Y. & Park, D. 2015. *Financial development and output growth in developing Asia and Latin America: A comparative sectoral analysis* (No. w20917). National Bureau of Economic Research, Cambridge, Massachusetts.
- Akinboade, O.A. 1998. Financial development and economic growth in Botswana: A test for causality. *Savings and Development*, 3(22):331–348.
- Alawode, A.A. & Ikhida, S.I. 1997. Why should financial liberalisation induce financial crisis? *Savings and Development*, 261–274.
- Arcand, J.L., Berkes, E. & Panizza, U. 2012. Too much finance? IMF Working Paper. WP/12/161. International Monetary Fund, Washington DC
- Atje, R. & Jovanovic, B. 1993. Stock markets and development. *European Economic Review*, 37(2):632–640.
- Aziakpono, M.J. 2011. Financial development and economic growth: Theory and a survey of evidence. *Studies in Economics and Econometrics*, 35(1):15–43.
- Banerjee, A.V. & Duflo, E. 2007. The economic lives of the poor. *The American Economic Association's Journal of Economic Perspectives*, 21(1):141.
- Barajas, M.A., Chami, M.R. & Yousefi, M.R. 2013. *The finance and growth nexus re-examined: Do all countries benefit equally?* (No. 13-130). International Monetary Fund., Washington DC
- Bayal and S Ikhida 2015. “Financing and financial sustainability of microfinance: Review of Literature” paper presented at the 5th CIRIEC International Research Conference on Social Economy, July 15-18, 2015, Portugal
- Beck, T. & Demirgüç-Kunt, A. 2006. Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking & Finance*, 30(11):2931–2943.
- Beck, T., Demirgüç-Kunt, A.S.L.I. & Maksimovic, V. 2005. Financial and legal constraints to growth: Does firm size matter? *The Journal of Finance*, 60(1):137–177.
- Brownbridge, M. & Harvey, C. 1998. *Financial liberalization in difficult circumstances in Banking in Africa* ed. by Martin Brownbridge and Charles Harvey. Africa World Press, Inc.
- Calderón, C. & Liu, L. 2003. The direction of causality between financial development and economic growth. *Journal of Development Economics*, 72(1):321–334.
- Chen, P.F., Lee, C.C. & Lee, C.F. 2012. How does the development of the life insurance market affect economic growth? Some international evidence. *Journal of International Development*, 24(7):865–893.
- Conning, J. 1999. Outreach, sustainability and leverage in monitored and peer-monitored lending. *Journal of Development Economics*, 60(1):51–77.
- Cull, R. & Morduch, J. 2007. Financial performance and outreach: A global analysis of leading microbanks. *The Economic Journal*, 117(517):F107–F133.
- Roland Daumont, Françoise Le Gall, and François Leroux (2004): Banking in sub-Saharan Africa: What went wrong? IMF Working Paper, WP/04/55

- Demetriades, P.O. & Hussein, K.A. 1996. Does financial development cause economic growth? Time-series evidence from 16 countries. *Journal of Development Economics*, 51(2):387–411.
- Demirgüç-Kunt, A. & Levine, R. 2001. *Financial structures and economic growth: A cross-country comparison of banks, markets and development*. Cambridge, MA: MIT Press.
- Demirgüç-Kunt, A. & Detragiache, E. 2002. Does deposit insurance increase banking system stability? An empirical investigation. *Journal of Monetary Economics*, 49(7):1373–1406.
- Demirgüç-Kunt, A. & Maksimovic, V. 1998. Law, finance, and firm growth. *Journal of Finance*, 2107–2137.
- Enisan Akinlo & Olufisayo, Akinlo (2007): Financial Development, Money, public Expenditure and national Income in Nigeria. *Journal of Social and Economic Development*, Vol 9 Issue 1
- Evans, D.S. & Jovanovic, B. 1989. An estimated model of entrepreneurial choice under liquidity constraints. *The Journal of Political Economy*, 808–827.
- Fowowe, B. 2013. Financial liberalization in sub-Saharan Africa: What do we know? *Journal of Economic Surveys*, 27(1):1–37.
- Gertler, M.L. 1988. Financial structure and aggregate economic activity: An overview, *Journal of Money, Credit and Banking*, Vol. 20, No. 3, pp. 559-588.
- Ghirmay, T. 2004. Financial development and economic growth in sub-Saharan African countries: Evidence from time series analysis. *African Development Review*, 16(3):415–432.
- Griffith-Jones S., E Karwowski and N Hlungwane, 2013. Policy and research issues on finance and growth for sub-Saharan Africa. Paper prepared for UNDESA (March).
- Habibullah, M.S. & Eng, Y.K. 2006. Does financial development cause economic growth? A panel data dynamic analysis for the Asian developing countries. *Journal of the Asia Pacific Economy*, 11(4):377–393.
- Hermes, N., Lensink, R. & Meesters, A. 2008. Outreach and efficiency of microfinance institutions. *World Development*, 39(6):938–948.
- Ikhide, S.I. 1987. Financial growth and economic development: A Nigerian case study. *The Nigerian Journal of Economic and Social Studies*, 29(3):269–286.
- Ikhide, S.I. 1988. Financial development and domestic capital formation in Nigeria. *Benin Journal of Social Sciences*, 13(1 & 2):15–26.
- Ikhide, S.I. 1990. Commercial banking structure in Nigeria – The rural–urban dichotomy. *Ife Social Sciences Review*, 11(2):98–112.
- Ikhide, S.I. 1991. Making a leading sector of the banking system: The Nigerian experience. *International Journal of Development Banking*, 10(1), January:16–29.
- Ikhide, S.I. 1992. *Financial deepening, credit availability, and the efficiency of investment: Evidence from selected African countries*. Development Research Paper Series, Research Paper no 2, Addis Ababa: United Nations Economic Commission for Africa.
- Ikhide, S.I. 1993. Positive interest rates: Financial deepening and the mobilisation of savings in Africa. *Development Policy Review*, 11(4), December:367–382.
- Ikhide, S.I. 1993. Financial liberalisation and inflation: Is there a link in adjusting developing countries? *Revista Internationale*, XL(2), June:157–174.
- Ikhide, S.I. 1996. Bank offices and the mobilisation of private savings. Evidence from selected African countries. *Journal of Development Studies*. 33(1), October:117–132.
- Ikhide, S.I. 1997. Financial liberalisation and the growth of the capital market in Nigeria. *African Review of Money, Finance and Banking* (Supplementary issues of Savings and Development), 1–2/1997:5–38.



- Ikhide, S. I & Alawode, A. 2001. *Financial sector reforms, macroeconomic instability and the order of economic liberalisation: The evidence from Nigeria*. Research Paper 112, African Economic Research Consortium, Nairobi, Kenya..
- Ikhide, S.I. & Alawode, A. 2002. On the sequencing of financial liberalisation in Nigeria. *South African Journal of Economics*, 70(1):95–127,03.
- Ikhide, S. I. 2008. Measuring the operational efficiency of commercial banks in Namibia. *South African Journal of Economics*, 73(4), December.
- Ikhide, S. I & Y O Olalekan 2012. Why is the cost of financial intermediation rising in Botswana. *Journal of Developing Areas*, 46(1), Spring.
- IMF (International Monetary Fund). 2015. *Global Financial Stability Report, April*. Washington, DC.
- IMF (International Monetary Fund). 2015. *Rethinking Financial Deepening: Stability and Growth in Emerging Markets*, IMF, Washington, DC.
- Khan, M.S. & Senhadji, S.A. 2001. *Threshold effects in the relationship between inflation and growth*, International Monetary Fund Staff Papers, 48(1).
- King, R.G. & Levine, R. 1993. Finance, entrepreneurship, and growth: Theory and evidence. *Journal of Monetary Economics*, 32:513–542.
- Laeven L and Fabian Valencia. 2013. *Systemic Banking Crises: A New Database*. IMF Working Paper WP/08/224. IMF, Washington, DC.
- Levine, R. 2003. More on finance and growth: More finance, more growth? *Federal Reserve Bank of St. Louis Review*, July:31–46.
- Levine, R. 2005. Finance and growth: Theory and evidence. *Handbook of Economic Growth*, 1:865–934.
- Levine, R., Loayza, N. & Beck, T. 2000. Financial intermediation and growth: Causality and causes. *Journal of Monetary Economics*, 46(1).
- Levine, R. & Zervos, S. 1998. Stock markets, banks, and economic growth. *American Economic Review*, 88(3):537–58.
- Luintel, K.B. & Khan, M. 1999. A quantitative reassessment of the finance–growth nexus: Evidence from a multivariate VAR. *Journal of Development Economics*, 60(2):381–405.
- Manos, R. & Yaron, J. 2009. Key issues in assessing the performance of microfinance institutions. *Canadian Journal of Development Studies*, 29(1–2):101–122.
- Maredza Andrew and Sylvanus Ikhide (2013a): Dealing with the challenge of generating employment in South Africa; Does banking sector efficiency matter? *International Business and Economics Research Journal*, Vol. 12, no 11, November
- Maredza Andrew and Sylvanus Ikhide (2013b): Measuring the Impact of the Global financial Crisis on Efficiency and Productivity of the banking Sector in South Africa. *Mediterranean Journal of Social Sciences*, Special Issue, vol.4 No 6, July
- Nili, M. & Rastad, M. 2007. Addressing the growth failure of the oil economies: The role of financial development. *The Quarterly Review of Economics and Finance*, 46:726–740.
- Odedokun, M.O. 1996. Alternative econometric approaches for analyzing the role of the financial sector in economic growth: Time-series evidence from LDCs. *Journal of Development Economics*, 50 (1):119–146.
- Odhiambo, N.M. 2005. Financial development and economic growth in Tanzania: A dynamic causality test. *African Finance Journal*, 7(1):1.

- Odhiambo, N.M. 2007. Supply-leading versus demand-following hypothesis: Empirical evidence from three SSA countries. *African Development Review*, 19(2):257–280.
- Odhiambo, N.M. 2008. Financial depth, savings and economic growth in Kenya: A dynamic causal linkage. *Economic Modelling*, 25(4):704–713.
- Patrick, H.T. 1966. Financial development and economic growth in underdeveloped countries. *Economic Development and Cultural Change*, 174–189.
- Quayes, S. 2012. Depth of outreach and financial sustainability of microfinance institutions. *Applied Economics*, 44(26):3421–3433.
- Robinson, J. 1952. The generalization of the general theory. In: *The rate of interest and other essays*” London: MacMillan.
- Robinson, M.S. 2001. *The microfinance revolution: Sustainable finance for the poor*. World Bank Publications.
- Rousseau, P.L. & Wachtel, P. 2011. What is happening to the impact of financial deepening on economic growth? *Economic Inquiry*, 49(1):276–288.
- The World Bank Group (2013): South Africa Economic Update: Focus on Financial Inclusion. Issue 4 May 2013
- World Bank. 2015. *World Development Indicators*. [Data file] retrieved from <http://www.worldbank.org/data/wdi>.<http://dm-edms.imf.org/cyberdocs/4048116>.

Appendix 1a: Finance and growth nexus panel regression (1970–2014)

VARIABLES	Dependent variable: log of per capita GDP		
	GLS	Fixed effects	Fixed effects
Domestic credit to private sector to GDP	0.00888*** (0.00128)	0.00646*** (0.00192)	0.00658*** (0.00191)
Log of secondary school enrolment	0.435*** (0.0487)	0.144*** (0.0503)	0.152*** (0.0496)
Export to GDP	0.000827*** (6.55e-05)	9.78e-06 (4.86e-05)	1.81e-05 (4.88e-05)
Log of government expenditure	0.126*** (0.0219)	0.226*** (0.0489)	0.221*** (0.0459)
Log of gross investment	0.496*** (0.0655)	-0.00636 (0.0424)	-0.00569 (0.0435)
Inflation	-6.57e-06 (2.70e-05)	1.24e-05*** (1.97e-06)	1.22e-05*** (1.98e-06)
Financial liberalisation dummy	-0.0832 (0.0610)	-0.108 (0.107)	-0.110 (0.107)
Constant	0.445 (0.453)	1.581* (0.924)	1.546* (0.840)
Observations	609	609	609
R-squared		0.649	
Number of country_id	31	31	31
Country FE		YES	YES
Year FE			YES

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

VARIABLES	Dependent variable: Log of per capita GDP			
	1970–1980 Fixed effects	1981–1990 Fixed effects	1991–2000 Fixed effects	2001–2014 Fixed effects
Domestic credit to private sector to GDP	-0.00524 (0.00507)	0.000616 (0.00314)	0.00290*** (0.000806)	0.00170 (0.00231)
Log of secondary school enrolment	0.275** (0.0997)	0.169* (0.0897)	0.286*** (0.0546)	0.169** (0.0748)
Export to GDP	-0.00550 (0.00603)	0.00359 (0.00233)	0.00133 (0.00115)	0.00291 (0.00198)
Log of government expenditure	0.192** (0.0791)	0.0853 (0.0859)	0.0998** (0.0362)	0.197*** (0.0355)
Log of gross investment	0.0325	0.191***	-0.0192	0.00477

Appendix 1b: Finance and growth nexus threshold panel regressions

	Dependent variable: Log of per capita GDP			
	1970–1980	1981–1990	1991–2000	2001–2014
VARIABLES	Fixed effects	Fixed effects	Fixed effects	Fixed effects
Domestic credit to private sector to GDP	-0.00524 (0.00507)	0.000616 (0.00314)	0.00290*** (0.000806)	0.00170 (0.00231)
Log of secondary school enrolment	0.275** (0.0997)	0.169* (0.0897)	0.286*** (0.0546)	0.169** (0.0748)
Export to GDP	-0.00550 (0.00603)	0.00359 (0.00233)	0.00133 (0.00115)	0.00291 (0.00198)
Log of government expenditure	0.192** (0.0791)	0.0853 (0.0859)	0.0998** (0.0362)	0.197*** (0.0355)
Log of gross investment	0.0325 (0.0708)	0.191*** (0.0578)	-0.0192 (0.0311)	0.00477 (0.0609)
Inflation	0.000137 (0.00210)	0.00129 (0.00119)	2.03e-06*** (6.65e-07)	0.00147 (0.00205)
Constant	2.389* (1.323)	3.831** (1.737)	3.875*** (0.758)	1.901*** (0.675)
Observations	86	153	133	237
R-squared	0.573	0.375	0.609	0.629
Number of country_id	14	20	23	31
Country FE	YES	YES	YES	YES
Year FE				

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Appendix 2: Finance and growth nexus panel regression with financial inclusion variable (1970–2014)

VARIABLES	Dependent variable: Log of per capita GDP		
	GLS	Fixed effects	Fixed effects
Domestic credit to private sector to GDP	0.00389** (0.00179)	0.000839 (0.00229)	0.00115 (0.00232)
Log of secondary school enrolment	0.576*** (0.106)	0.105* (0.0612)	0.113* (0.0638)
Export to GDP	0.000833*** (0.000124)	1.82e-05 (2.07e-05)	2.71e-05 (2.22e-05)
Log of government expenditure	0.197*** (0.0317)	0.120*** (0.0395)	0.131*** (0.0376)
Log of gross investment	-0.0707 (0.119)	0.0993*** (0.0306)	0.0942*** (0.0285)
Inflation	-0.0353*** (0.00831)	0.000763 (0.00106)	0.000411 (0.00108)
Financial liberalisation dummy	0.0368 (0.0872)		-0.158 (0.330)
Commercial bank branches per 1 000 adults	0.0493*** (0.0106)	0.0119** (0.00532)	0.0119** (0.00592)
Constant	-0.127 (0.786)	3.520*** (0.755)	3.322*** (0.775)
Observations	168	168	168
R-squared		0.651	
Number of country_id	29	29	29
Country FE		YES	YES
Year FE			YES

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

*Appendix 3: Finance and growth nexus panel regression for advanced financial economies (South Africa, Seychelles, Mauritius, Tunisia and Namibia)*

VARIABLES	Dependent variable: Log of per capita GDP		
	GLS	Fixed effects	Fixed effects
Domestic credit to private sector to GDP	0.00462*** (0.00152)	-0.00199* (0.000552)	-0.00199* (0.000552)
Log of secondary school enrolment	1.158*** (0.159)	0.134 0.0794	0.134 0.0794
Export to GDP	-0.0082 (0.00553)	-0.000689 (0.00193)	-0.000689 (0.00193)
Log of government expenditure	-0.139* (0.0760)	-0.000689 (0.00193)	-0.000689 (0.00193)
Log of gross investment	-0.332** (0.131)	0.173* (0.0448)	0.173* (0.0448)
Inflation	0.0502** (0.0114)	0.173* (0.0448)	0.173* (0.0448)
Constant	7.064*** (1.356)	-3.851 (1.656)	-3.851 (1.656)
Observations	46	46	46
R-squared	0.931	0.956	0.956
Number of country_id		3	3
Country FE	YES	YES	YES
Year FE			YES

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Appendix 4: Finance and growth nexus for advanced economies  
(with financial inclusion) robust

	Dependent variable: Log of per capita GDP		
VARIABLES	GLS	Fixed effects	Fixed effects
Domestic credit to private sector to GDP	-0.00485** (0.00189)	0.00109*** (0.000107)	0.00109*** (0.000107)
Log of secondary school enrolment	-0.672 (0.528)	0.0344 (0.0892)	0.0344 (0.0892)
Export to GDP	0.00856 (0.00525)	0.00645** (0.00104)	0.00645** (0.00104)
Log of government expenditure	0.109 (0.0901)	0.136 (0.154)	0.136 (0.154)
Log of gross investment	-0.917** (0.305)	0.0221 (0.128)	0.0221 (0.128)
Inflation	0.0297* (0.0131)	-2.15e-05 (0.00423)	-2.15e-05 (0.00423)
	(0.00521)	(0.00796)	(0.00650)
Constant	10.42*** (0.839)	0.00686 (0.00538)	0.00686 (0.00538)
Observations	16	16	16
R-squared	0.977	0.980	0.980
Number of country_id		3	3
Country FE	YES	YES	YES
Year FE			YES

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1