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Financial development dynamic thresholds of financial globalization: evidence from Africa

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Abstract

Purpose – The issue of which financial initial conditions are necessary to materialize the benefits of financial globalization remains open to debate in the literature. In this paper, we try to put some empirical structure on the concept of financial threshold conditions in order to give policymakers guidance on the Kose et al. (2011) and Henry (2007) hypothesis. Its object is to assess if financial benefits of financial globalization are questionable until greater domestic financial development has taken place in African countries.

Design/methodology/approach – In framing the financial dimension in a more concrete and tractable manner, we examine the concerns of how domestic financial initial dynamics of depth (economic and financial systems), efficiency (banking and financial systems), activity (banking and financial systems) and size, play out in the financial development benefits of financial globalization. The estimation approach consists of assessing the impact of financial globalization through-out the conditional distributions of domestic financial development dynamics.

Findings – The introduction of previously missing financial dimensions into the debate generates a number of important findings. Only financial initial (threshold) conditions of size are necessary to materialize the benefits of financial globalization. While financial depth only partially validates the hypothesis, dynamics of efficiency and activity (credit) do not confirm the hypothesis.

Practical implications – Addressing the issue of surplus liquidity in African financial institutions could improve the benefits of financial size and potentially reverse the trends of financial efficiency and activity. Depending on the context of sampled countries, the appropriate role of policy has always been either to stem the tide of capital flows or encourage them. Policymakers who have been viewing their challenges exclusively from the latter perspective for benefits in growth (finance) might be getting the financial dynamics badly wrong.

Originality/value – Blanket financial development policies may not reap the financial benefits of financial globalization until domestic financial dynamics of depth, efficiency, activity and size

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are critically considered. The introduction of the last three previously missing components in the literature sheds more light on the globalization-development nexus.

JEL Classification: F02; F21; F30; F40; O10
Keywords: Banking; International investment; Financial integration; Development

1. Introduction

Recent advances in the theoretical and empirical literatures indicate that the benefits of financial integration may be questionable until greater domestic financial and institutional developments have taken place. A new framework for analyzing financial globalization highlights the tension between the indirect benefits of financial integration and the potential risks if a country opens up to capital flows without the right initial conditions in place (Kose et al., 2011). From a practical perspective, a reasonable evaluation of the cost-benefit trade-off requires a better insight into what these initial conditions are and how exactly they matter. This is an essential component of an analytical framework that can take account of country-specific features and initial conditions in designing a pragmatic approach to capital account liberalization at the advent of globalization (Prasad & Rajan, 2008).

The financial crisis has re-ignited the fierce debate about the merits of financial globalization and its implications for financial development especially in developing countries. The worldwide financial crisis has dramatically driven home the downside of financial globalization, as many emerging markets and developing economies had to grapple with surges in capital flows earlier in the last decade and then experienced a sharp reversal of those inflows at the height of the crisis (Kose et al., 2011). Financial linkages have served as a channel for the global financial turmoil and economic downturn to reach their shores. This has re-ignited the fierce debate about the merits of financial globalization and its implications for growth and

volatility, especially for developing countries. In theory, however, financial globalization should facilitate efficient international allocation of capital and promote international risk sharing. Though these benefits should be much greater for developing countries[2], the issues of which financial initial conditions are necessary to materialize the benefits of financial globalization remains open to debate in the literature (Henry, 2007).

The recent wave of financial globalization started in the mid-1980s with rising cross-border financial flows among industrial economies and between developing countries. This was spurred by liberalization of capital controls in many of these countries, in anticipation of the benefits that cross-border flows would bring in terms of better global capital allocation and improved possibilities of international risk-sharing. The strong presumption was that these benefits ought to be large, especially for developing countries that tend to be relatively capital-poor and have more volatile income growth (Kose et al., 2006). With the surge in financial flows, came a spate of currency and financial turmoils in the late 1980s and 1990s. There is a widely held perception that developing countries opening-up to capital flows have been more vulnerable to these crises (and more adversely affected) than industrial countries. These developments have sparked a fierce debate among both academics and practitioners on the costs and benefits of capital account openness. The debate has intensified and become more polarized over time; in contrast to the debate on trade liberalization, which has more or less tilted towards a consensus (Kose et al., 2006).

Some proponents view increasing capital account liberalization and unfettered capital flows as a serious impediment to global financial stability (Rodrik, 1998; Bhagwati, 1998;

[2] Developing countries are relatively capital scarce and labor rich, so access to foreign capital should help them increase investment and growth. More so, developing countries have more volatile output than advanced industrial economies, which makes their potential welfare gains from international risk sharing much greater (Kose et al., 2011).

Stiglitz, 2000), leading to calls for capital controls and the imposition of frictions, such as "Tobin taxes" on international asset trade. Others argue that, increased openness to capital flows has to a great extent proven essential for countries aiming to upgrade from lower to middle-income status, while significantly enhancing stability among industrialized countries (Fischer, 1998; Summers, 2000). This is evidently a matter of considerable policy relevance, especially with major economies like China and India recently taking steps to open-up their capital accounts. Thus, this lends credit to the view that empirical literature is gradually tilting towards supporting a significant positive role for financial globalization, though there are many unanswered questions about how a country should organize and pace its move.

In this paper, we try to put some empirical structure on the concept of financial threshold conditions in order to give policymakers guidance on the issue. We assess the concerns of how financial dynamic initial conditions of depth, efficiency, activity and size play out in the benefits of financial globalization. Thus, for each financial dynamic we investigate if the benefits (ills) of financial globalization are different across the conditional distributions of financial development. Our main contribution is the introduction of previously missing financial components in the liberalization-finance debate. Therefore, we examine the Kose et al., (2011) and Henry (2007) hypotheses[3] in the light of new financial dimensions. Threshold initial conditions from our findings could ease policy guidance on the debate. Particularly on the issue of which financial initial conditions are necessary to materialize the benefits of financial globalization, a concern open to debate in the literature (Henry, 2007)[4]. The rest of the paper is organized as follows. We

[3] "*In this paper we develop a unified empirical framework for characterizing such threshold conditions. We find that there are clearly identifiable thresholds in variables such as financial depth and institutional quality: the cost-benefit trade-off from financial openness improves significantly once these threshold conditions are satisfied*" (Kose et al., 2011, p.1).

[4] "*Whereas the Indian current account has been opened fully though gradually in the 1990s, a more calibrated approach has been followed in the opening of the capital account and subsequently the financial sector. This approach is consistent with the weight of available empirical evidence on the benefits of capital account*

begin in Section 2 by reviewing some conflicts in existing literature. We position the current paper in the context of the debate in Section 3. In Section 4, we tackle the measurement and methodological issues. Empirical analysis and discussion are covered in Section 5. Section 6 concludes.

2. Conflicts in the literature

The decision to move from a closed account regime (where capital may not move freely in and out of the country) and liberalize capital accounts (in which capital can enter and leave at will) is not without controversy. From a broad perspective, there are two starkly different views about the wisdom of capital account liberalization as a policy choice for developing countries.

In the first strand, 'allocation efficiency' draws heavily on the predictions of the standard neoclassical growth model pioneered by Robert M. Solow (1956). In the neoclassical model, liberalizing the capital account eases a more efficient international allocation of resources and produces all kinds of salubrious effects. Resources flow from capital abundant developed countries where the return of capital is low, to capital-scarce developing countries where the return of capital is high. The flow of resources into the developing countries reduces their cost of capital, triggering a temporal increase in investment and growth that permanently raises their living standards (Fischer, 1998; Obstfeld, 1998; Rogoff, 1999; Summers, 2000). Partially motivated by the prospective gains from incorporating allocating efficiency arguments into their economic policies, dozens of developing countries from Santiago to Seoul implemented some form of financial liberalization during the past quarter century.

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liberalization for acceleration of economic growth, particularly in emerging economies. Evidence suggests that the greatest gains are obtained from openness to foreign direct investment followed by portfolio investment. Benefits resulting from external debt flows are questionable until greater domestic financial market development has taken place" (Henry, 2007).

The alternative strand view's 'allocation efficiency' as a fanciful attempt to extend the results on the gains from international trade in goods to international trade in assets. The predictions of 'allocation efficiency' stand ground only when the economy suffers from no distortions other than barriers to free capital flows. Owing to many distortions in developing countries, skeptics argue that the theoretical predictions of the neoclassical model bear little resemblance to the reality of capital account policy. Provocative titles like "Who Needs Capital-Account Convertibility?" (before the turn of the century) and "Why Did Financial Globalization Disappoint?" (a decade after) by Rodrik (1998) and Rodrik & Subramanian (2009) respectively, best characterize this view. Rodrik (1998) find no correlation between the openness of countries' capital accounts and the amount they invest or the rate at which they grow. He concludes that the benefits of open capital account (if indeed they exist) are not really apparent, but that the costs are manifestly evident in the form of recurrent emerging-market crises. Sodrik & Subramanian (2009) conclude that, in the wake of the sub-prime financial crisis, the claims that recent financial engineering has generated large gains are sounding less plausible. Hence, domestic finance maybe under closer scrutiny.

On the international front, even leaving financial crises aside, it appears increasingly clear that the benefits of financial globalization are hard to find[5]. Financial globalization has not generated increased investment or higher growth in emerging economies. Economies that have grown most rapidly have been those that rely less on capital inflows. Financial globalization has felt short of smoothing consumption or/and reducing volatility. They further advocate that evidence based on financial globalization today is indirect, speculative and in their view:

[5] This hypothesis is still object of hot debate. Leung (2003) has concluded that, increase in external debts flows in least developed countries is worsening business cycles. Kholdy & Sohrabian (2008) establish that, FDI may jump-start financial development in developing countries; especially in countries which experience a higher level of corruption in the forms of excessive patronage, nepotism, job reservations, "favor-for-favors", secret party funding, and suspiciously close ties between politics and business. At the industry level in some developing countries, liberalization has not been found to exert a significant impact on efficiency and productivity (Mulwa et al., 2009).

ultimately unpersuasive. According to them, it is time for a new paradigm on financial globalization and one that recognizes that more is not necessarily better[6].

3. Positioning of the current paper

Before the Asian financial crisis of 1997 hit the headlines, there was an emerging consensus among leading macroeconomists that it was time for developing countries to embrace the liberalization of their capital accounts (Rodrik & Subramanian, 2009). In a famous speech during the IMF's Annual Meetings in 1997, Stanley Fischer presented the case for financial globalization and advocated an amendment to IMF's articles, the object of which would allow the Fund to promote the orderly liberalization of capital movements (Fischer, 1997). There were risks associated with opening-up to capital accounts but Fischer was of the opinion that these could be offset by the potential benefits. Dornbusch (1996) who had advocated the usefulness of financial transactions taxes[7] before Fischer (1997), declared capital controls "*an idea whose time is past*" and posited "*the correct answer to the question of capital mobility is that it ought to be unrestricted*" (Dornbusch, 1998, 20). After Fischer's prophesy, there has been an explosion in empirical works on the consequences of financial globalization. However, far from clinching the case for capital account liberalization, these studies paint quite a paradoxical and mixed picture (Rodrik & Subramanian, 2009). Perhaps the most detailed review of the literature conclude that, the cross-country evidence on the growth benefits of capital-account openness is inconclusive and lacks robustness (Kose et al., 2006).

[6] "*As long as the world economy remains politically divided among different sovereign and regulatory authorities, global finance is condemned to suffer from deformation far worse than those of domestic finance. Depending on the context and country, the appropriate role of policy will be as often to stem the tide of capital flows as to encourage them. Policymakers who view their challenges exclusively from the latter perspective will get it badly wrong*" (Rodrik & Subramanian, 2009, 16-17).

[7] Such taxes according to Schmidt (2001) are more efficient than capital controls that are often relatively easy to evade, often complex and obscure, and supported by large corruptible bureaucracies.

Kose et al. (2006) have surveyed an extensive literature and proposed an alternative framework for analyzing the macroeconomic implications of financial globalization in order to pull together existing strands and evidence. These authors postulate that, in theory financial globalization should catalyze domestic financial market development, improve corporate and public governance, provide incentives for greater macroeconomic policy discipline. Such indirect benefits may be more important than the traditional financial channel emphasized in previous analyses. Findings from a much recent study inspired by the phenomenon of global current imbalances suggest that, developing countries that are more open to certain types of financial flows but overall are less reliant on foreign capital (and finance more of their investment through domestic savings) have on average experienced better growth performance (Kose et al., 2011).

A major debate however is that, there seem to be certain 'threshold' levels of financial and institutional developments that an economy needs to attain before it can get the full indirect benefits and reduce the risks of capital account liberalization. It has been generally framed that, industrial countries which typically have better institutions, more stable macroeconomic policies and deeper financial markets than developing countries have been the main beneficiaries of financial globalization. This has led many authors to argue that developing countries should focus on institutional capacity building and strengthening of their financial markets before opening-up their capital accounts (Rodrik & Subramanian, 2009). How to balance these considerations against the potential benefits to be gained from financial integration is a pressing policy question now that developing countries again are facing the difficult choices of whether and how to liberalize capital account transactions further.

This paper contributes to existing literature by putting some empirical structure on the concept of financial threshold conditions in order to give policymakers guidance on the Kose et al. (2011)[8] and Henry (2007)[9] hypotheses. In framing the financial dimension in a more concrete and tractable manner, we examine the concerns of how financial dynamic initial conditions of depth, efficiency, activity and size play out in the benefits of financial globalization. In plainer terms, we focus on the financial dimension of the 'initial conditions' debate and assess if the financial benefits of financial globalization are questionable until greater domestic financial development has taken place. In contrast to existing literature, this article introduces previously missing financial development components into the debate. We argue that, the concept of financial development should not be restricted to financial depth (deepening); as financial components of efficiency, activity and size have become increasingly relevant in the finance-development nexus.

4. Data and Methodology

4.1 Data

We examine a sample of 15 African countries for the period 1996-2009 with data from African Development Indicators (ADI) and the Financial Development and Structure Database (FDSD) of the World Bank. Our restrictions to 15 countries and a 14 year time-span respectively are constrained by data availability and the focus on findings with updated policy implications.

[8] "*In this paper we develop a unified empirical framework for characterizing such threshold conditions. We find that there are clearly identifiable thresholds in variables such as financial depth and institutional quality: the cost-benefit trade-off from financial openness improves significantly once these threshold conditions are satisfied*" (Kose et al., 2011, p.1).

[9] "*Whereas the Indian current account has been opened fully though gradually in the 1990s, a more calibrated approach has been followed in the opening of the capital account and subsequently the financial sector. This approach is consistent with the weight of available empirical evidence on the benefits of capital account liberalization for acceleration of economic growth, particularly in emerging economies. Evidence suggests that the greatest gains are obtained from openness to foreign direct investment followed by portfolio investment. Benefits resulting from external debt flows are questionable until greater domestic financial market development has taken place*" (Henry, 2007).

Summary statistics (Appendix 1), correlation analysis with presentation of countries (Appendix 2) and variable definitions (Appendix 3) are detailed in the appendices.

Financial intermediary dynamics include measures of depth (money supply)[10], efficiency (banking system efficiency)[11], activity (banking system activity)[12] and size[13]. For robustness purposes, we use different measures of each financial intermediary dynamic. In accordance with mainstream literature (Henry, 2007; Rodrik & Subramanian, 2009), financial globalization and trade liberalization are measured with Foreign Direct Investment (FDI) and trade openness respectively. Since the main focus of the paper is financial globalization, we use Private Capital Flows (PCF) as another measure of financial globalization for robustness checks. Control variables include trade openness, economic prosperity (at macroeconomic and microeconomic levels), population growth, inflation, public investment and development assistance. These control variables have been substantially documented in the financial development literature

[10] Borrowing from the FDSD, this paper measures financial depth both from overall-economic and financial system perspectives with indicators of broad money supply (*M2/GDP*) and financial system deposits (*Fdgdp*) respectively. While the former denotes the monetary base plus demand, saving and time deposits, the later indicates liquid liabilities. Since we are dealing exclusively with developing countries, we distinguish liquid liabilities from money supply because a substantial chunk of the monetary base does not transit through the banking sector. The two indicators are in ratios of GDP (see Appendix 3) and both can robustly cross-check each other as either account for over 98% of information in the other (see Appendix 2).

[11] By financial intermediation efficiency here, this study neither refers to the profitability-oriented concept nor to the production efficiency of decision making units in the financial sector (through Data Envelopment Analysis: DEA). What we seek to highlight is the ability of banks to effectively fulfill their fundamental role of transforming mobilized deposits into credit for economic operators (agents). We adopt proxies for banking-system-efficiency and financial-system-efficiency (respectively 'bank credit on bank deposits: *Bcbd'* and 'financial system credit on financial system deposits: *Fcfd'*). Like with financial depth, these two financial allocation efficiency proxies can cross-check each other as they represent more than 86% of variability in one another (see Appendix 2). Locational choice of foreign direct investment is inter alia, determined by allocation efficiency (Chen, 1996).

[12] By financial intermediary activity here, the work highlights the ability of banks to grant credit to economic operators. We proxy for both banking intermediary activity and financial intermediary activity with "private domestic credit by deposit banks: *Pcrb*" and "private credit by domestic banks and other financial institutions: *Pcrbof*" respectively. The later measure cross-checks the former as it represents more than 90% of information in the former (see Appendix 2).

[13] With respect to the FDSD we measure financial intermediary size as the ratio of "deposit bank assets" to "total assets" (deposit bank assets on central bank assets plus deposit bank assets: *Dbacba*).

(Greenwood & Jovanovic, 1990; Saint Paul, 1992; Huyben & Smith, 1999; Boyd et al., 2001; Huang, 2005, 2011; Do & Levchenko, 2004; Fielding, 2004; Huang & Temple, 2005; Levine, 1997, 2003, 2005; Aggarwal et al., 2011).

Some major national macroeconomic policies such as maintaining lower inflation and higher investment have been documented to be conducive to financial development (Huybens & Smith, 1999; Boyd et al., 2001; Huang, 2011). Huybens & Smith (1999) theoretically and Boyd et al. (2001) empirically investigate the effects of inflation on financial development and find that economies with higher inflation rates are likely to have smaller, less active and less efficient banks (and equity markets). Huang (2011) empirically investigates the relation between investment and financial development and confirms a positive incidence of investment on financial development. Some studies support the view that policies which encourage openness to external trade tend to boost financial development (Do & Levchenko, 2004; Huang & Temple, 2005). Many studies have also documented the positive link between growth and financial development. Greenwood & Jovanovic (1990) and Saint-Paul (1992) show that, as the economy grows, the cost of financial intermediation decreases because of intensive competition; inducing a larger scale of funds available for productive investment. The importance of income levels for financial development has been well addressed in Levine (1997, 2003, 2005). In taking into account banking sector development in transition economies, Jaffee & Levonian (2001) demonstrate that the level of GDP per capita has a positive effect on the banking system structure. Huang (2005) has established a positive link between population growths as a determinant of financial development. Like remittances (Aggarwal et al., 2011) foreign aid not tainted by corrupt practices and effectively used at the micro economic level could improve financial development.

4.2 Methodology

Borrowing from Billger & Goel (2009), to determine if existing levels of financial development affect how financial globalization comes into play, we use quantile regression. This technique enables us to investigate if the relationship between each financial dynamic (depth, efficiency, activity and size) and the exogenous variables differ throughout the distribution of the dependent variable (Keonker & Hallock, 2001). The research question of this paper which is to assess if the financial benefits of financial globalization are questionable until greater domestic financial development has taken place, is compatible with the quantile estimation approach. Therefore, based on this technique we are able to carefully assess how financial globalization plays-out throughout the conditional distribution (with particular emphasis on countries with the highest and lowest levels of financial development).

Some studies on the determinants of financial development are based on Ordinary Least Squares (OLS) estimation, which report parameter estimates at the conditional mean of the financial dependent variable. While mean effects are certainly important, one of the underlying assumptions of OLS regression is that the error term and the dependent variable are normally distributed. However, quantile regression does not require a normally distributed disturbance term. Quantile regression (QR) yields parameters estimated at multiple points in the conditional distribution of the dependent variable (Koenker & Bassett, 1978) and has gained attention in recent development literature (Billger & Goel, 2009; Okada & Samreth, 2012).

The θth quantile estimator of the endogenous variable is obtained by solving for the following optimization problem.

$$\min_{\beta \in R^k} \left[\sum_{i \in \{i: y_i \geq x_{i'}\beta\}} \theta \left| y_i - x_{i'}\beta \right| + \sum_{i \in \{i: y_i \geq x_{i'}\beta\}} (1-\theta) \left| y_i - x_{i'}\beta \right| \right] \quad (1)$$

Where $\theta \in (0, 1)$. Contrary to OLS which is based on minimizing the sum of squared residuals, with QR we minimize the weighted sum of absolute deviations. For instance the 10^{th} or 90^{th} quantiles (with θ=0.10 or 0.90 respectively) by approximately weighing the residuals. The conditional quantile of y_i given x_i is :

$$Q_y(\theta / x_i) = x_{i'}\beta_\theta \quad (2)$$

where unique slope parameters are estimated for each θth quantile of interest. This formulation is analogous to $E(y / x) = x_{i'}\beta$ in the OLS slope though parameters are estimated only at the mean of the conditional distribution of the dependent variable. For the model in Eq. (2), the dependent variable y_i is a financial development dynamic while x_i contains a constant term, GDP growth, GDP per capita growth, population growth, inflation, public investment and development assistance. The quantile estimation technique is more robust than the OLS approach in the presence of outliers when the distribution of the dependent variable is a highly non-normal pattern (Okada & Samreth, 2012). We also report results for Least Absolute Deviations (LAD) which should correspond to those of the 0.5^{th} quantile.

5. Empirical analysis

5.1 Summary of findings

The results presented in Tables 1-4 include OLS, LAD and QR estimates. OLS estimates provide a baseline of mean effects and we compare these to estimates of LAD and separate quantiles in the conditional distributions of the dependent variable. In the interpretation of estimated coefficients, note should be taken of the fact that smaller values (in conditional

distributions) of the dependent variable denote less financial development. Table 1, Table 2, Table 3 and, Table 4 show the results for financial depth, financial efficiency, financial activity and financial size respectively.

The use of two specifications with different control variables is consistent with recent 'quantile regression'-oriented threshold literature. Okada & Samreth (2012, p. 242) have used several specifications, Asongu (2013a) has used five, Billger, & Goel, (2009, p. 302) have used three while Asongu (2013b) has used two.

Table 1: Determinants of Financial Depth: OLS, LAD and Quantile Regressions

	Dependent variable: Economic Financial Depth (Money Supply :M2)						
	OLS	**LAD**	**Q 0.1**	**Q 0.25**	**Q 0.50**	**Q 0.75**	**Q 0.90**
				Specification 1			
Constant	**1.019*** **	**1.169*** **	**0.610*** **	**1.048*** **	**1.169*** **	**1.341*** **	**1.498*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Foreign Direct Investment	-0.001	-0.001	**-0.002** **	**-0.003*** **	-0.001	0.002	**0.013*** **
	(0.503)	(0.629)	**(0.046)**	**(0.001)**	(0.625)	(0.382)	**(0.000)**
Trade	0.0006	-0.0003	-0.000	-0.0001	-0.0003	**-0.0008** **	**-0.0006*** **
	(0.126)	(0.630)	(0.850)	(0.400)	(0.534)	**(0.017)**	**(0.005)**
Economic Prosperity	0.001	-0.000	-0.001	-0.001	-0.000	**-0.004***	**-0.006*** **
	(0.742)	(0.986)	(0.364)	(0.296)	(0.985)	**(0.092)**	**(0.000)**
Inflation	**-0.000***	-0.000	-0.000	-0.000	-0.000	-0.000	**-0.000** **
	(0.088)	(0.952)	(0.603)	(0.401)	(0.590)	(0.339)	**(0.010)**
Population growth	**-0.279*** **	**-0.313*** **	**-0.157*** **	**-0.302*** **	**-0.313*** **	**-0.329*** **	**-0.369*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Observations	210	210	210	210	210	210	210
				Specification 2			
Constant	**0.283*** **	**0.180*** **	**0.239*** **	**0.190*** **	**0.180*** **	**0.233*** **	**0.487*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Foreign Direct Investment	-0.004	-0.003	**-0.002** **	**-0.008*** **	-0.003	**0.008***	0.008
	(0.243)	(0.657)	**(0.019)**	**(0.000)**	(0.166)	**(0.073)**	(0.253)
Trade	**0.002*** **	**0.002*** **	**-0.0003** **	**0.0003**	**0.002*** **	**0.003*** **	**0.003*** **
	(0.000)	**(0.000)**	**(0.024)**	**(0.171)**	**(0.000)**	**(0.000)**	**(0.002)**
Per capita Economic Prosperity	-0.000	0.010	**-0.006*** **	-0.003	**0.010*** **	**0.018*** **	0.009
	(0.993)	(0.196)	**(0.000)**	(0.148)	**(0.000)**	**(0.001)**	(0.302)
Public Investment	**0.019*** **	**0.025*** **	**0.006*** **	**0.022*** **	**0.025*** **	**0.033*** **	**0.019***
	(0.000)	**(0.001)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.051)**
Development Assistance	**-0.016*** **	**-0.019*** **	**-0.004*** **	**-0.009*** **	**-0.019*** **	**-0.027*** **	**-0.022*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Observations	210	210	210	210	210	210	210

Notes. Dependent variable is the financial depth *,**,***, denote significance levels of 10%, 5% and 1% respectively. Lower quantiles (e.g., Q 0.1) signify nations where financial depth is least. P-values in brackets. OLS: Ordinary Least Squares. LAD: Least Absolute Deviations.

The findings in Table 1 do not confirm the research hypothesis, implying the financial depth benefits of financial globalization are not necessarily contingent on domestic financial depth attaining a certain threshold. This result is consistent across specifications. Most control

variables are broadly significant with the right signs. For instance, public investment (foreign-aid) increases (decreases) financial depth (or economic growth): broadly consistent with recent African growth literature (Asongu, 2012a). Ultimately, the research hypothesis is not validated with respect to financial depth: contrary to Kose et al. (2011) and Henry (2007). A down-to-earth elucidation of this finding does not reflect the benefits from financial liberalization for countries with high levels of domestic savings (deposits) in the globalization process.

Based on the results in Table 2, the research hypothesis is not valid for financial intermediary efficiency. This is true across specifications and implies, the allocation efficiency benefits of financial liberalization are not contingent on existing levels of domestic financial intermediary development efficiency. The negative effect of financial liberalization on financial efficiency is consistent with recent African finance literature (Asongu, 2012b).

Table 2: Determinants of Financial Efficiency: OLS, LAD and Quantile Regressions

	Dependent variable: Banking System Efficiency (Bank credit on Bank deposits)						
	OLS	**LAD**	**Q 0.1**	**Q 0.25**	**Q 0.50**	**Q 0.75**	**Q 0.90**
				Specification 1			
Constant	**1.116*** **	**1.054*** **	**0.771*** **	**1.062*** **	**1.054*** **	**1.238*** **	**1.603*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Foreign Direct Investment	**-0.013*** **	**-0.012** **	**-0.017*** **	**-0.017*** **	**-0.012*** **	**-0.015*** **	**-0.019*** **
	(0.000)	**(0.026)**	**(0.000)**	**(0.000)**	**(0.004)**	**(0.000)**	**(0.005)**
Trade	**-0.001*** **	-0.000	**-0.002*** **	**-0.001*** **	-0.0009	-0.001	-0.001
	(0.001)	(0.245)	**(0.004)**	**(0.007)**	(0.135)	(0.100)	(0.234)
Economic Prosperity	**-0.017*** **	**-0.017*** **	-0.0006	-0.003	**-0.017*** **	**-0.021*** **	**-0.028*** **
	(0.000)	**(0.008)**	(0.913)	(0.489)	**(0.000)**	**(0.000)**	**(0.000)**
Inflation	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.294)	(0.914)	(0.973)	(0.739)	(0.319)	(0.203)	(0.304)
Population growth	**-0.071*** **	**-0.072** **	**-0.064***	**-0.139*** **	**-0.072** **	**-0.078*** **	**-0.145*** **
	(0.003)	**(0.022)**	**(0.053)**	**(0.000)**	**(0.010)**	**(0.008)**	**(0.001)**
Observations	210	210	210	210	210	210	210
				Specification 2			
Constant	**1.022*** **	**0.935*** **	**0.688*** **	**0.874*** **	**0.935*** **	**1.187*** **	**1.488*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Foreign Direct Investment	**-0.010*** **	**-0.017*** **	**-0.011** **	**-0.013*** **	**-0.017*** **	**-0.009***	**0.009***
	(0.004)	**(0.000)**	**(0.031)**	**(0.000)**	**(0.000)**	**(0.071)**	**(0.068)**
Trade	**-0.001*** **	-0.0005	**-0.002*** **	**-0.001*** **	-0.000	**-0.001** **	**-0.004*** **
	(0.000)	(0.460)	**(0.000)**	**(0.000)**	(0.339)	**(0.048)**	**(0.000)**
Per capita Economic Prosperity	**-0.013*** **	**-0.022*** **	-0.002	**-0.011** **	**-0.022*** **	**-0.013** **	-0.009
	(0.002)	**(0.003)**	(0.752)	**(0.012)**	**(0.000)**	**(0.041)**	(0.131)
Public Investment	-0.004	-0.005	0.004	-0.003	-0.005	**-0.014** **	-0.007
	(0.365)	(0.440)	(0.512)	(0.474)	(0.250)	**(0.037)**	(0.242)
Development Assistance	**-0.011****	**-0.007** **	**-0.012*** **	**-0.010*** **	**-0.007*** **	**-0.006***	**-0.017*** **
	(0.000)	**(0.046)**	**(0.000)**	**(0.000)**	**(0.005)**	**(0.062)**	**(0.000)**
Observations	210	210	210	210	210	210	210

Notes. Dependent variable is financial efficiency *,**,***, denote significance levels of 10%, 5% and 1% respectively. Lower quantiles (e.g., Q 0.1) signify nations where financial efficiency is least. P-values in brackets. OLS: Ordinary Least Squares. LAD: Least Absolute Deviations.

Findings in Table 3 relative to financial activity do not confirm the research hypothesis too. This assertion is valid across specifications and the negative sign implies financial globalization decreases the amount of private credit allocated to economic operators (or agents) by domestic banks. A logical explanation for this negative relationship is that, with financial globalization foreign banks have a comparative advantage in the service sector, thus decreasing the proportion of private credit from domestic banks (Asongu, 2012b).

Table 3: Determinants of Financial Activity: OLS, LAD and Quantile Regressions

	Dependent variable: Banking System Activity (Private credit from deposit banks)						
	OLS	**LAD**	**Q 0.1**	**Q 0.25**	**Q 0.50**	**Q 0.75**	**Q 0.90**
				Specification 1			
Constant	**0.890*** **	**0.881*** **	**0.257*** **	**0.768*** **	**0.881*** **	**1.016*** **	**1.069*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Foreign Direct Investment	-0.002	-0.003	**-0.004*** **	**-0.004** **	**-0.003***	-0.003	**-0.004*** **
	(0.233)	(0.184)	**(0.000)**	**(0.026)**	**(0.100)**	(0.182)	**(0.004)**
Trade	**-0.001*** **	-0.000	-0.000	**-0.001*** **	**-0.0008** **	**-0.0009** **	**-0.0004** **
	(0.000)	(0.158)	(0.147)	**(0.000)**	**(0.017)**	**(0.011)**	**(0.039)**
Economic Prosperity	-0.001	-0.003	-0.001	0.001	-0.003	**-0.005***	**-0.011*** **
	(0.483)	(0.168)	(0.254)	(0.652)	(0.191)	**(0.078)**	**(0.000)**
Inflation	-0.000	-0.000	-0.000	0.000	-0.000	-0.000	-0.000
	(0.977)	(0.979)	(0.740)	(0.845)	(0.775)	(0.570)	(0.113)
Population growth	**-0.223*** **	**-0.235*** **	**-0.060*** **	**-0.213*** **	**-0.235*** **	**-0.258*** **	**-0.252*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Observations	210	210	210	210	210	210	210
				Specification 2			
Constant	**0.352*** **	**0.164*** **	**0.154*** **	**0.157*** **	**0.164*** **	**0.366*** **	**0.591*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Foreign Direct Investment	-0.003	-0.006	**-0.003*** **	**-0.005*** **	**-0.006*** **	**-0.007** **	-0.003
	(0.247)	(0.217)	**(0.000)**	**(0.001)**	**(0.000)**	**(0.046)**	(0.196)
Trade	-0.000	0.000	**-0.0003*** **	-0.0002	**0.0006*** **	0.0007	**0.001*** **
	(0.413)	(0.184)	**(0.000)**	(0.229)	**(0.000)**	(0.139)	**(0.000)**
Per capita Economic Prosperity	-0.000	0.003	**-0.005*** **	**-0.006*** **	**0.003***	**0.010** **	0.002
	(0.906)	(0.448)	**(0.000)**	**(0.002)**	**(0.050)**	**(0.019)**	(0.324)
Public Investment	**0.010*** **	**0.018*** **	**0.004*** **	**0.014*** **	**0.018*** **	**0.015*** **	-0.001
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.519)
Development Assistance	**-0.015*** **	**-0.013*** **	**-0.007*** **	**-0.009*** **	**-0.013*** **	**-0.021*** **	**-0.015*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Observations	210	210	210	210	210	210	210

Notes. Dependent variable is financial activity *,**,***, denote significance levels of 10%, 5% and 1% respectively. Lower quantiles (e.g., Q 0.1) signify nations where financial activity is least. P-values in brackets. OLS: Ordinary Least Squares. LAD: Least Absolute Deviations.

Table 4 results appear to validate the research hypothesis. Though the effect of financial liberalization bears a negative relationship with domestic financial system size, the negative effect appears to decrease across the distributions (from lower to higher quantiles): consistent across specifications. Therefore, domestic financial system size matters in the benefits of

financial globalization; as the negative magnitude is more pronounced in countries with smaller financial sizes (lower quantiles).

Table 4: Determinants of Financial Size: OLS, LAD and Quantile Regressions

	Dependent variable: Financial Size						
	OLS	**LAD**	**Q 0.1**	**Q 0.25**	**Q 0.50**	**Q 0.75**	**Q 0.90**
				Specification 1			
Constant	**0.965*** **	**1.026*** **	**0.961*** **	**0.918*** **	**1.026*** **	**1.051*** **	**1.056*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Foreign Direct Investment	**-0.012*** **	**-0.011*** **	**-0.032*** **	**-0.017*** **	**-0.011*** **	**-0.006*** **	**-0.001** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.021)**
Trade	0.0004	0.0001	-0.000	**0.0009*** **	0.0001	-0.0001	**-0.0004*** **
	(0.301)	(0.653)	(0.931)	**(0.005)**	(0.651)	(0.542)	**(0.000)**
Economic Prosperity	0.003	0.003	0.013	0.003	0.003	-0.0007	0.0005
	(0.370)	(0.367)	(0.197)	(0.273)	(0.323)	(0.585)	(0.478)
Inflation	**-0.0001** **	-0.0001	-0.000	**-0.000** **	**-0.0001** **	**-0.0001*** **	**-0.0001*** **
	(0.023)	(0.869)	(0.806)	**(0.016)**	**(0.011)**	**(0.000)**	**(0.000)**
Population growth	**-0.079*** **	**-0.079*** **	**-0.169*** **	**-0.101*** **	**-0.079*** **	**-0.040*** **	**-0.020*** **
	(0.000)	**(0.000)**	**(0.004)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Observations	210	210	210	210	210	210	210
				Specification 2			
Constant	**0.809*** **	**0.894*** **	**0.810*** **	**0.823*** **	**0.894*** **	**0.960*** **	**0.988*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Foreign Direct Investment	**-0.011*** **	-0.006	**-0.017*** **	**-0.017*** **	**-0.006** **	**-0.005*** **	**-0.004*** **
	(0.000)	(0.315)	**(0.000)**	**(0.000)**	**(0.028)**	**(0.000)**	**(0.000)**
Trade	0.0006	0.0002	0.0004	0.0006	0.0002	0.000	-0.0001
	(0.128)	(0.753)	(0.333)	(0.283)	(0.591)	(0.845)	(0.272)
Per capita Economic Prosperity	0.002	0.0003	0.0002	-0.0007	0.0003	0.0004	0.001
	(0.452)	(0.937)	(0.954)	(0.891)	(0.920)	(0.785)	(0.329)
Public Investment	0.001	-0.001	-0.004	-0.0003	-0.001	0.001	**0.002***
	(0.634)	(0.810)	(0.301)	(0.946)	(0.722)	(0.271)	**(0.087)**
Development Assistance	**-0.005*** **	-0.004	**-0.027*** **	**-0.016*** **	**-0.004** **	**-0.002*** **	0.0002
	(0.005)	(0.389)	**(0.000)**	**(0.000)**	**(0.021)**	**(0.004)**	(0.681)
Observations	210	210	210	210	210	210	210

Notes. Dependent variable is the financial size *,**,***, denote significance levels of 10%, 5% and 1% respectively. Lower quantiles (e.g., Q 0.1) signify nations where financial size is least. P-values in brackets. OLS: Ordinary Least Squares. LAD: Least Absolute Deviations.

5.2 Robustness checks

Robustness checks are performed at two levels. On the one hand, we use different proxies for financial development; on the other hand, since the main focus of the paper is financial globalization, we also use private capital flows as an alternative measure of financial globalization to check the consistency of the FDI-based findings. The second sets of regressions do not validate the hypothesis under investigation for financial development dimensions of depth (liquid liabilities), efficiency (financial system credit on financial system deposits) and activity (private domestic credit from domestic banks and other financial institutions). However, findings for financial size (based on private capital flows) validate the hypothesis; consistent with the

FDI-based regressions. Due to space constraints we report only the findings for financial size in Table 5 below.

Table 5: Determinants of Financial Size: OLS, LAD and Quantile Regressions

	Financial Size						
	OLS	**LAD**	**Q 0.1**	**Q 0.25**	**Q 0.50**	**Q 0.75**	**Q 0.90**
				Specification 1			
Constant	**0.986*** **	**1.038*** **	**0.982*** **	**0.972*** **	**1.038*** **	**1.072*** **	**1.047*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Private Capital Flows	**-0.010*** **	**-0.008** **	**-0.023** **	**-0.016*** **	**-0.008*** **	**-0.004*** **	**-0.002*** **
	(0.000)	**(0.027)**	**(0.031)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Trade	0.0002	0.000	-0.0003	0.0006	0.000	**-0.0003***	**-0.0003*** **
	(0.537)	(0.820)	(0.852)	(0.111)	(0.829)	**(0.052)**	**(0.000)**
Economic Prosperity	0.003	0.002	0.013	0.001	0.002	0.0001	**-0.0007***
	(0.395)	(0.378)	(0.368)	(0.678)	(0.396)	(0.930)	**(0.074)**
Inflation	**-0.0001** **	-0.0001	-0.000	**-0.000***	**-0.0001** **	**-0.0001*** **	**-0.0001*** **
	(0.028)	(0.882)	(0.883)	**(0.074)**	**(0.014)**	**(0.000)**	**(0.000)**
Population growth	**-0.085*** **	**-0.083*** **	**-0.180** **	**-0.113*** **	**-0.083** **	**-0.047*** **	**-0.015*** **
	(0.000)	**(0.000)**	**(0.024)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Observations	210	210	210	210	210	210	210
				Specification 2			
Constant	**0.818*** **	**0.906*** **	**0.785*** **	**0.866*** **	**0.906*** **	**0.979*** **	**1.003*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Private Capital Flows	**-0.009*** **	**-0.003**	**-0.015*** **	**-0.015*** **	**-0.003**	**-0.004*** **	**-0.003*** **
	(0.001)	**(0.492)**	**(0.000)**	**(0.000)**	**(0.262)**	**(0.000)**	**(0.000)**
Trade	0.0004	-0.0002	0.0005	0.0004	-0.0002	-0.0001	**-0.0004*** **
	(0.262)	(0.677)	(0.342)	(0.278)	(0.603)	(0.423)	**(0.000)**
Per capita Economic Prosperity	0.002	0.002	-0.003	-0.001	0.002	-0.0001	0.0005
	(0.454)	(0.542)	(0.578)	(0.619)	(0.520)	(0.897)	(0.479)
Public Investment	0.002	0.002	-0.002	-0.003	0.002	0.001	**0.004*** **
	(0.578)	(0.708)	(0.661)	(0.367)	(0.640)	(0.102)	**(0.000)**
Development Assistance	**-0.006*** **	-0.007	**-0.028*** **	**-0.018*** **	**-0.007*** **	**-0.003*** **	**-0.001** **
	(0.002)	(0.171)	**(0.000)**	**(0.000)**	**(0.002)**	**(0.000)**	**(0.026)**
Observations	210	210	210	210	210	210	210

Notes. Dependent variable is the financial size *,**,***, denote significance levels of 10%, 5% and 1% respectively. Lower quantiles (e.g., Q 0.1) signify nations where financial size is least. P-values in brackets. OLS: Ordinary Least Squares. LAD: Least Absolute Deviations

5.3 Discussion and policy recommendations

Before delving into the discussion of financial development thresholds, it is imperative to reconsider the intuition and hypothesis motivating this study. A hotly debated issue in the globalization literature is that, there seem to be certain 'threshold' levels of financial and institutional developments that an economy needs to attain before it can get full benefits and reduce the risks of capital account liberalization. It has generally been framed that industrial countries which typically have better institutions, more stable macroeconomic policies and deeper financial markets than developing countries have been the main beneficiaries of financial

globalization. This has led many authors to argue that developing countries should focus on institutional capacity building and strengthening of their financial markers before opening-up their capital accounts (Rodrik & Subramanian, 2009). How to balance these considerations against the potential benefits to be gained from financial integration is a pressing policy question now that developing countries again are facing the difficult choices of whether and how to liberalize capital account transactions further.

5.3.1 Higher initial levels of financial depth are not instrumental in financial globalization

Kose et al. (2011) find identifiable thresholds in variables such as financial depth and institutional quality in the cost-benefit trade-off from financial openness and postulate: financial benefits of globalization are substantial once these threshold conditions are satisfied (Kose et al., 2011, 1). This positioning in threshold requirements had earlier been emphasized by Henry (2007) who elucidated why the Indian current account was being opened in a calibrated manner[14]. Our results have not significantly confirmed this hypothesis from two main dimensions: financial depth from an overall economic standpoint (money supply) and financial deepening from a financial system perspective (deposits or liquid liabilities).

The relevance of existing levels of deposits (financial depth) points to the importance of the level of domestic savings in the financial globalization process. High domestic savings do not only improve financial depth upon globalization; they also serve as a cushion to external financial shocks in periods of financial crisis. According to Rodrik & Subramanian (2009),

[14] "Whereas the Indian current account has been opened fully though gradually in the 1990s, a more calibrated approach has been followed in the opening of the capital account and subsequently the financial sector. This approach is consistent with the weight of available empirical evidence on the benefits of capital account liberalization for acceleration of economic growth, particularly in emerging economies. Evidence suggests that the greatest gains are obtained from openness to foreign direct investment followed by portfolio investment. Benefits resulting from external debt flows are questionable until greater domestic financial market development has taken place (Henry, 2007)".

economies that have grown more rapidly in terms of investment and growth on the one hand, and affected less by global financial crises on the other hand, are those that rely less on capital inflows. This implies, economies that have a solid domestic savings base before opening up their capital accounts will benefit more from financial openness. However, this is only vaguely indicated in our findings.

If the hypothesis of consistency in positive change of magnitude across quantiles is relaxed, then it could also be concluded that, compared with countries of lower initial financial depth, countries with higher levels of financial depth enjoy higher benefits in terms of increased circulation of currency, with financial globalization. This is only a partial validation of the Kose et al. (2011) and Henry (2007) hypotheses. The positive incidence of financial globalization in higher quantiles has two implications: (1) it indicates an extensive use of currency which reflects a strengthening of economic activity and; (2) the extensive use of currency may either be the product of increased formal banking sector deposits or the effect of growth in non-formal and informal financial sector activities. The premise of this interpretation is that, unlike in the developed world, in developing countries, the informal financial sector has a substantial competitive advantage in financial sector competition. For example, fresh African finance literature has established that the burgeoning phenomenon of mobile banking, while negatively correlated with the formal financial sector, is positively correlated with the informal financial sector (Asongu, 2012c). This indicates that, FDI which targets mobile banking activities could result in an extensive use of currency that is not necessarily captured by the formal banking sector.

5.3.2 Existing levels of financial efficiency and activity do not matter in financial globalization

In the neoclassical models, liberalizing the capital accounts eases a more efficient international allocation of resources and produces all kinds of salubrious effects. Resources flow from capital abundant developed countries where the return of capital is low, to capital-scarce developing countries where the return of capital high. The flow of resources into developing countries reduces the cost of capital, triggering a temporal increase in investment and growth that permanently raises living standards (Fischer, 1998; Obstfeld, 1998; Rogoff, 1999; Summers, 2000).

While our analysis does not seek to confirm or refute whether higher levels of allocation efficiency and 'finance availability to economic agents' are characteristics of financial globalization, our findings however show that globalization substantially reduces the amount of deposits allocated to economic agents by domestic financial institutions. With this reduction in the amount of private domestic credit in proportion of deposit (savings), the surplus-liquidity problem is generated. The negative relationship with financial intermediary activity (or credit) confirms the heavy reliance on foreign credit (upon financial liberalization); as opposed to private domestic credit. From a 'comparative advantage' standpoint, these findings which are broadly consistent with recent African finance literature (Asongu, 2012b), confirm the relative lack of a comparative advantage in the service (bank) sector (by African financial institutions). This finding is consistent with the substantially documented issues of surplus liquidity in African financial institutions (Saxegaard, 2006; Fouda, 2009). The presence of surplus liquidity is an indication of financial intermediary allocation inefficiency and ultimately, a decrease in financial activity.

This assertion subscribes to the alternative strand of the globalization debate which views allocation efficiency as a fanciful attempt to extend the results on the gains from international trade in goods to international trade in assets. The predictions of allocation efficiency stand ground only when the economy suffers from no distortions other than barriers to free capital flows. This further highlights the skeptics' view that, owing to many distortions in developing countries the theoretical predictions of the neoclassical model bear little resemblance to the reality of capital account policy.

5.3.3 Existing levels of financial size count in financial liberalization

Financial intermediary size according to our definition reflects the ratio of deposit bank assets on central bank assets plus deposit bank assets. From our findings, the negative incidence of financial globalization appears to be decreasing across the distribution. That is, the negative magnitude decreases as one move from lower to higher quantiles of the distribution. Thus, countries with high initial financial size are more prone to have a less negative effect from capital account openness. This finding could best be explained from Henry (2007) where-in, capital account openness must be well calibrated and opened only in tandem with available empirical evidence on domestic financial (size) development.

A down to earth elucidation of this finding implies, the decreasing negative threshold effect could become positive if the surplus liquidity issues of African banks are addressed. Accordingly, an increase in banking sector assets (credit) will have a positive bearing on financial size (deposit bank assets/ total assets (deposit bank assets + central bank assets)). This interpretation unites the discussions on financial dynamics of efficiency and activity above. Hence, tackling the issue of surplus liquidity in African financial institutions could improve the benefits of financial size and potentially reverse the trends of financial efficiency and activity

5. 3.4 On the control variables

We now devote space to discussing the control variables. But for public investment in the second specification of most tables, determinants of financial development used as control variables have a negative relationship with financial development. The following could be retained for other determinants of financial development we have controlled for. (1) On the effect of inflation and public investment, major national macroeconomic policies maintaining lower inflation and higher investment are conducive to financial development (Huybens & Smith, 1999; Boyd et al., 2001; Huang, 2011). But for the financial efficiency regressions, while public investment has a positive incidence on financial development, inflation instead has the opposite effect. The explanation of the detrimental character of inflation is straight forward: inflation is too high (more than 32% in the mean from Appendix 1). (1) Economic prosperity (at macro and microeconomic levels) was expected to improve financial development (Greenwood & Jovanovic, 1990; Saint-Paul, 1992). The incidence of growth is mixed at best: positive in some thresholds, negative in some and insignificant in others. The insignificance of the relationship in most cases could be explained from the manner in which income-levels matter in financial development (Levine, 1997, 2003, 2005). Economic prosperity that doesn't trickle down to per capita income growth does not amount to any significant change in income-levels. In certain cases, when fruits of economic prosperity are siphoned and deposited in foreign accounts, economic prosperity may not translate into financial development through the wealth-effect. (3) Some studies support the stance that, policies which encourage openness to external trade tend to boost financial development (Do & Levchenko, 2004; Huang & Temple, 2005). The negative incidence of trade openness (for the most part) is consistent with recent African growth literature (Asongu, 2012b). Foreign financial institutions naturally have a higher

competitive advantage in the service sector. (4) Contrary to Huang (2005)[15], we argue from our findings that, population growth that is not accompanied by corresponding policies which encourage the creation of bank accounts may have a negative or insignificant incidence on financial development. (5) Like in the effects on formal institutions (Asongu, 2012a) and economic prosperity (Asongu, 2012b) documented in recent African development literature, if foreign-aid is not well managed, it could be detrimental to financial intermediary development.

5.3.5 Specific policy recommendations

Four main specific policy implications have resulted from the findings: addressing the issue of surplus liquidity; the need for financial development policies to be contingent on financial dynamics; opening-up of the capital account in tandem with the weight of available evidence on the effect of financial globalization on domestic financial development and; calibrating the neglected informal financial sector that is substantially contributing to financial system assets.

Firstly, as outlined above, a common policy that could potentially improve financial dynamics of efficiency, activity and size is the tackling of the surplus liquidity problem in African financial institutions. In the face of capital account openness, the following measures could be implemented to address the issue. (1) Voluntary holding of excess liquidity could be mitigated by: reinforcement of institutions that would favor interbank lending so as to ease borrowing between banks for contingency purposes; easing difficulties encountered by banks in tracking their positions at the central bank that may require them to hold reserves above the statutory limits and; improve infrastructure so that remote bank branches may not need to hold excess reserves due to transportation problems. (2) Involuntary holding of excess liquidity could

[15] In whose study population growth has a positive effect on financial development.

also be avoided by: decreasing the inability of banks to lend, especially in situations where interest rates are regulated[16]; stifling the unwillingness of banks to expand lending by reducing asymmetric information and lack of competition; creating conditions to sustain the spread between bonds and reserves so that, commercial banks can invest excess liquidity in the bond markets and; developing regional stock exchange markets to broaden investment opportunities for commercial banks.

Secondly, capital control policies targeting financial development should not be blanket, but contingent on the prevailing dynamics of depth, efficiency, activity and size. Contrary to mainstream literature, we have used all the four dimensions identified in the Financial Development and Structure Database (FDSD) of the World Bank. Hence, we have been able to establish that mixing-up these concepts could seriously limit the effectiveness of financial development policies.

Thirdly, the decision on whether to completely open the capital account should depend on the available weight of evidence on the effect of financial globalization on financial development dynamics. Accordingly, based on our findings, it will be grossly unwise to treat countries with low initial levels in financial development dynamics in the same manner as their counterparts with high existing levels. Put in plainer terms, the state of development in a given financial development dynamic must be taken into account in the capital account openness decision making process.

Fourthly, integrating financial assets of the informal financial sector in the conception and definition of the financial system and correspondingly in the appreciation of indicators proposed by the FDSD could substantially contribute to the financial development threshold

[16] For instance this is the case of the CEMAC region where the central bank sets a floor for lending rates and a ceiling for deposit rates above and below which interest rates are negotiated freely.

literature. The premise for this implication is that, the previously missing informal financial sector component in the financial system definition (by the FDSD) has a substantial financial sector competitive advantage in mobile banking (Asongu, 2012c).

5.3.6 Broad policy recommendations

The Fischer (1997) prophesy on financial globalization and the Dornbusch (1996) declaration that '*capital-controls is an idea of the past*' are not broadly justified in terms of financial development benefits to undeveloped countries. This reflects the need for an orderly and well calibrated liberalization of capital movements as were enshrined in the IMF articles before Fischer (1997). Therefore, the decision to move from a closed account regime (where capital may not move freely in and out of the country) and liberalize capital accounts (in which capital can enter and leave at will), should depend on country-specific macroeconomic financial fundamentals and not based on common-blanked policies. These broadly mean that, if the targeted interest of financial liberalization is directly or indirectly linked to financial development, some initial levels (thresholds) in financial size are important to discount targeted benefits.

Accordingly, based on the weight of above empirical evidence, the theoretical predictions of the neoclassical model bear little resemblance with the reality of capital account policy. Thus, financial benefits of open capital account are not really apparent (if they indirectly exist for domestic financial depth, efficiency and activity). Domestic financial depth, activity and efficiency rewards of financial globalization may hence be indirect or purely speculative. It is therefore time for a new paradigm of globalization, one that recognizes all dynamics of financial intermediary development in the financial benefits of financial liberalization. Depending on the context of sampled countries, the appropriate role of policy has always been either to stem the

tide of capital flows or encourage them. Policymakers who have been viewing their challenges exclusively from the latter perspective for benefits in development might be getting the financial dynamics badly wrong.

6. Conclusion

The issue of which financial initial conditions are necessary to materialize the benefits of financial globalization remains open to debate in the literature. With the recent financial crisis, developing countries are facing the difficult choices of whether and how to liberalize their capital accounts further. In response to the pressing policy questions about the potential benefits to be gained from financial integration, this paper has contributed to existing literature by putting some empirical structure on the concept of financial threshold conditions in order to give policymakers guidance on the Kose et al. (2011) and Henry (2007) hypotheses.

In framing the financial issue in a more concrete and tractable manner, we have assessed the concerns of how dynamic financial initial conditions of depth, efficiency, activity and size play out in the benefits of financial globalization. In plainer terms, we have assessed if the financial benefits of financial globalization are questionable until greater domestic financial development have taken place. The following findings have been established: (1) only financial initial (threshold) conditions of size are necessary to materialize the benefits of financial globalization and; (2) while financial depth only partially validates the hypothesis, dynamics of efficiency and activity (credit) do not confirm the hypothesis.

As a policy implication, addressing the issue of surplus liquidity in African financial institutions could improve the benefits of financial size and potentially reverse the trends of financial efficiency and activity. Depending on the context of sampled countries, the appropriate role of policy has always been either to stem the tide of capital flows or encourage them.

Policymakers who have been viewing their challenges exclusively from the latter perspective for benefits in growth might be getting the financial dynamics badly wrong.

Appendices

Appendix 1: Summary Statistics and Presentation of Countries

Panel A: Summary Statistics

	Variables	Mean	S.D	Min.	Max.	Observations
Financial Development	Economic Financial Depth (M2)	0.446	0.290	0.102	1.279	210
	Financial System Depth (Fdgdp)	0.383	0.267	0.054	1.054	210
	Banking System Efficiency (BcBd)	0.676	0.270	0.133	1.400	210
	Financial System Efficiency (FcFd)	0.753	0.501	0.137	2.606	210
	Banking System Activity (Pcrb)	0.260	0.212	0.011	0.869	210
	Financial System Activity (Pcrbof)	0.309	0.327	0.011	1.739	210
	Financial Size (Dbacba)	0.789	0.208	0.110	1.052	210
Globalization	Financial Openness (FDI)	3.996	5.340	-4.972	40.157	210
	Private Capital Flows (PCF)	4.082	5.755	-9.108	40.157	210
	Trade Openness (Trade)	77.636	40.871	30.044	255.01	210
Control Variables	Economic Prosperity (GDPg)	5.018	3.719	-7.617	20.613	210
	Per capita Economic Prosperity(GDPpcg)	2.738	3.568	-8.684	17.114	210
	Population Growth	2.208	0.799	-1.081	3.389	210
	Inflation	32.832	287.29	-2.477	4145.1	210
	Public Investment	7.016	3.725	1.369	25.008	210
	Development Assistance	7.915	7.735	-0.251	52.823	210

Panel B: Presentation of Countries

Angola, Benin, Cape Verde, Ivory Coast, Egypt, Kenya, Mauritius, Morocco, Mozambique, Senegal, Seychelles, South Africa, Uganda, Zambia, Tanzania

S.D: Standard Deviation. Min: Minimum. Max: Maximum. M2: Money Supply. Fdgdp: Financial deposits(liquid liabilities). BcBd: Bank credit on Bank deposits. FcFd: Financial credit on Financial deposits. Pcrb: Private domestic credit from deposit banks. Pcrbof: Private domestic credit from deposit banks and other financial institutions. Dbacba: Deposit bank assets on central bank assets plus deposit bank assets. FDI: Foreign Direct Investment. GDPg: GDP growth. GDPpcg: GDP per capita growth.

Appendix 2: Correlation Analysis

Financial Development Dynamics							Globalization Flows			Control Variables						
Financial Depth		Financial Efficiency		Financial Activity		Fin. Size										
M2	Fdgdp	BcBd	FcFd	Prcb	Pcrbof	Dbacba	FDIgdp	PCFgdp	Trade	GDPg	GDPpcg	Popg	Inflation	PubIvt	NODA	
1.000	0.981	0.039	0.040	0.719	0.496	0.342	0.059	0.099	0.418	-0.183	-0.006	-0.809	-0.106	0.107	-0.442	M2
	1.000	0.092	0.148	0.785	0.608	0364	0.063	0.105	0.429	-0.187	-0.002	-0.844	-0.110	0.113	-0.456	Fdgdp
		1.000	0.860	0.583	0.644	0.505	-0.388	-0.350	-0.304	-0.262	-0.239	-0.129	-0.160	-0.261	-0.320	Bcbd
			1.000	0.622	0.837	0.404	-0.299	-0.227	-0.249	-0.213	-0.175	-0.190	-0.096	-0.246	-0.325	FcFd
				1.000	0.907	0.503	-0.162	-0.115	0.071	-0.208	-0.054	-0.708	-0.108	-0.049	-0.493	Pcrb
					1.000	0.446	-0.160	-0.089	0.005	-0.203	-0.078	-0.577	-0.084	-0.119	-0.460	Pcrbof
						1.000	-0.251	-0.234	0.042	-0.024	0.038	-0.324	-0.158	-0.056	-0.271	Dbacba
							1.000	0.932	0.527	-0.047	-0.035	-0.064	0.040	0.091	0.103	FDIgdp
								1.000	0.487	-0.069	-0.051	-0.086	0.033	0.083	0.086	PCFgdp
									1.000	-0.074	0.024	-0.468	0.162	0.087	-0.289	Trade
										1.000	0.973	0.239	0.117	0.171	0.233	GDPg
											1.000	0.020	0.104	0.184	0.144	GDPpcg
												1.000	0.064	-0.050	0.415	Popg
													1.000	-0.039	-0.018	Inflation
														1.000	0.379	PubIvt.
															1.000	NODA

M2: Money Supply. Fdgdp: Financial deposits(liquid liabilities). BcBd: Bank credit on bank deposits. FcFd: Financial credit on Financial deposits. Pcrb: Private domestic credit from deposit banks. Pcrbof: Private domestic credit from deposit banks and other financial institutions. Dbacba: Deposit bank assets on central bank assets plus deposit bank assets. FDI: Foreign Direct Investment. PCF: Private Capital Flows. GDPg: GDP growth. GDPpcg: GDP per capita growth. Popg: Population growth. PubIvt: Public Investment. NODA: Net Official Development Assistance.

Appendix 3: Variable Definitions

Variables	Signs	Variable Definitions	Sources
Economic Financial Depth	M2	Money Supply (% of GDP)	World Bank (FDSD)
Financial System Depth	Fdgdp	Liquid Liabilities (% of GDP)	World Bank (FDSD)
Banking System Efficiency	BcBd	Bank credit on Bank deposits	World Bank (FDSD)
Financial System Efficiency	FcFd	Financial credit on Financial deposits	World Bank (FDSD)
Banking System Activity	Prcb	Private domestic credit from deposit banks (% of GDP)	World Bank (FDSD)
Financial System Activity	Prcbof	Private domestic credit from financial institutions (% of GDP)	World Bank (FDSD)
Financial Size	Dbacba	Deposit bank assets on Central bank assets plus Deposit bank assets	World Bank (FDSD)
Financial openness 1	FDI	Foreign Direct Investment (% of GDP)	World Bank (WDI)
Financial openness 2	PCF	Private Capital Flows (% of GDP)	World Bank (WDI)
Trade openness	Trade	Imports plus Exports in commodities (% of GDP)	World Bank (WDI)
Population growth	Popg	Average annual population growth rate	World Bank (WDI)
Public Investment	PubIvt	Gross Public Investment (% of GDP)	World Bank (WDI)
Inflation	Infl	Consumer Price Index (annual %)	World Bank (WDI)
Economic Prosperity	GDPg	GDP Growth (annual %)	World Bank (WDI)
Per Capita Economic prosperity	GDPpcg	GDP per capita Growth (annual %)	World Bank (WDI)

WDI: World Bank Development Indicators. FDSD: Financial Development and Structure Database.

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