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Financial globalisation uncertainty/instability is good for financial development

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Abstract

Purpose – This study assesses the effect of time-dynamic financial globalisation uncertainty on financial development in 53 African countries for the period 2000-2011.

Design/methodology/approach – Financial globalisation uncertainty is estimated as time-dynamic to capture business cycle disturbances while all dimensions identified by the Financial Development and Structure Database of the World Bank are employed, namely: financial depth (money supply and liquid liabilities), financial system efficiency (at banking and financial system levels), financial system activity (from banking system and financial system perspectives) and financial size. The empirical evidence is based on the Generalised Method of Moments with forward orthogonal deviations.

Findings- The following findings are established. First, financial globalisation uncertainty does not significantly affect money supply, financial system deposits and financial size. Second, the uncertainty increases banking system efficiency, banking system activity and financial system activity. Moreover, the positive effects are consistently driven by above-median uncertainty levels.

Practical implications- It follows that uncertainty in foreign capital flows may be a disguised advantage for domestic financial development, especially in dealing with the substantially documented issue of surplus liquidity in African financial institutions. Moreover, the sceptical view in the financial globalisation literature that 'allocation efficiency' is only plausible in the absence of uncertainty/instability is not substantiated by the findings. Justifications for the nexuses and other policy implications are discussed.

Originality/value- To the best of our knowledge this is the first study to assess the effects of financial globalisation uncertainty on financial development in Africa using time-dynamic measurements of financial globalisation uncertainty and all dimensions identified by the Financial Development and Structure Database of the World Bank.

1. Introduction

Developing countries that had been experiencing surges in foreign capital flows have had to also experience a decline in the same capital flows during the recent global financial crisis[1] (Kose et al., 2011). Uncertainty in financial flows has resurfaced the longstanding debate about whether the advantages of recent financial engineering far outweigh their development inconveniences (Rodrik & Subramanian, 2009). In essence, the rewards of financial globalisation to developing countries remain an open debate. While moderate consensus has been established on the rewards of trade globalisation (Asongu, 2014a), benefits from financial globalisation remain very conflicting, with a post 2007-2008 financial crisis strand of the literature substantially documenting the downsides of complete capital account openness, *inter alia:* Kose et al. (2011) on the risk of financial globalisation without solid domestic initial conditions; Prasad and Rajan (2008) on the imperative of incorporating country-specific features and Asongu and De Moor (2015) on the relevance of financial globalisation thresholds for positive domestic development outcomes.

Consistent with the theoretical underpinnings motivating recommendations for complete financial globalisation: (i) less developed countries which are labour-rich and capital-poor are rewarded with more access to foreign capital needed for investment and growth whereas (ii) developed countries benefit from less volatile output (Asongu & De Moor, 2015a). The theoretical basis argues that financial globalisation is a mechanism for risk sharing and capital allocation efficiency (Kose et al., 2006, 2011). Fischer (1998) and Summers (2000) are in accordance with the position that enhanced financial integration has benefited both developing nations and developed countries, notably by consolidating economic stability in the latter and enabling the former to make transitions for low- to middle-income.

Conversely, a stream of the literature has also documented the questionable economics of financial globalisation by arguing that the phenomenon fuels global financial instability which has substantial negative externalities on development outcomes (Stiglitz, 2000; Rodrik, 1998; Bhagwati, 1998). According to Asongu (2014a), some narratives are supportive of the view that the concept of financial globalisation is a hidden agenda to extend the benefits of international trade in commodities to trade in assets.

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[1] For simplicity, the terms 'financial crisis' 'financial crises', crisis and crises are used interchangeably throughout the study.

The above debate is relevant to Africa within the framework of financial globalisation in financial development outcomes for at least a fourfold reason: recent global poverty trends; surplus liquidity issues in African financial institutions; the need for foreign investment to finance Africa's growing needs/projects and gaps in the literature assessing the impacts of globalisation on the continent's development.

First, an April 2015 World Bank report on attainment of Millennium Development Goals (MDGs) has revealed that extreme poverty has been declining in all regions of the world with the exception of Africa (World Bank, 2015). Given that financial development is poverty-inhibiting (Efobi et al., 2015), the role of finance remains crucial for the post-2015 development agenda (Asongu & De Moor, 2015b). Second, a major concern in African financial development literature is the issue of surplus liquidity in financial institutions that is limiting financial access to households and corporations (see Saxegaard, 2006; Fouda, 2009; Asongu, 2014b). Third, African business literature is also consistent on the position that Africa's growing ambitions and projects require considerable external financial sources like foreign direct investment (see Bartels et al., 2009; Tuomi, 2011; Darley, 2012). Fourth, as far as we know, 2007-2008 financial crisis literature focusing on financial globalisation on the continent has failed to address the incidence of financial globalisation uncertainty on financial development.

To the best of our knowledge, the post-crisis literature on the nexus between financial globalisation and development outcomes has failed to address the highlighted concern of financial globalisation uncertainty. Accordingly, the extant literature has focused on, *inter alia*: financial flows in terms of aid, remittances and foreign direct investment (FDI) and other macroeconomic outcomes (see Massa & Te Velde, 2008; Allen & Giovannetti, 2010; Arieff et al., 2010); growth effects (see Brambila-Macias & Massa, 2010; Chauva & Geis, 2011; Price & Elu, 2014) and financial development (Massa & Te Velde, 2008; Asongu, 2014a; Motelle & Biekpe, 2015; Asongu & De Moor, 2015a). In essence, some inquiries have been positioned on: (i) examining the effects on remittances and foreign aid (e.g. Arieff et al., 2010);   (ii) employing trade (Allen & Giovannetti, 2010) and finance (Elu & Price, 2014) as mechanisms to growth externalities from the crisis; (iii) providing evidence from selected countries with globally-integrated financial markets (Massa & Te Velde, 2008); (iv) articulating the importance of FDI as a channel through which financial globalisation has influenced growth (Brambila-Macias &

Massa, 2010) and (v) investigating financial globalisation conditions/thresholds for rewards in domestic financial development (Asongu, 2014a; Asongu & De Moor, 2015a).

Noticeably, the above literature leaves room for improvement in three main areas. First, there is rare focus on financial development effects from financial globalisation. Moreover, studies on stock market development have limited policy implications because they are focused on a selected number of African countries with globally-integrated and well-functioning financial markets (see Massa & Te Velde, 2008). In essence, policy implications provided by studies focused on financial markets have limited relevance because most African countries do not have well-functioning and globally-integrated financial markets (Alagidede et al., 2011, p. 1333). The selective positioning of inquiries is not exclusively limited to 'stock market'-oriented investigations, but well extends to the financial intermediary sector (Elu & Price, 2014; Motelle & Biekpe, 2015). Moreover, Elu and Price (2014) have only engaged the financial intermediary sector as a channel between global financial instability and economic growth.

Second, as far as we have reviewed, with the exception of a study by Massa and Te Velde (2008) which has appreciated financial globalisation in terms of FDI (on selected countries though), there has been limited scholarly emphasis on FDI externalities to financial development in the post-crisis literature. Accordingly, in light of the discourse above, for the most part, remittances and foreign aid have been used to appreciate external flows. To put this point into perspective, an inquiry by Arieff et al. (2010) which has presented a comprehensive account of financial globalisation effects, does not engage FDI, in spite of the plethora of engaged institutional and macroeconomic outcomes, namely: fiscal and trade balances, foreign aid, remittances, political stability, poverty reduction and   fiscal balances. Third, to the best of our knowledge, extant literature has failed to engage uncertainty in financial globalisation. In essence, Asongu (2014a) and Asongu and De Moor (2015a) which are closest to the current inquiry have focused on investigating respectively financial development and financial globalisation thresholds for the materialisation of domestic financial development benefits from financial globalisation.

This study contributes to the literature by filling underlined gaps. It assesses the effect of financial instability/uncertainty[2] on financial development in 53 African countries for the period

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[2] Consistent with Lensink and Morrissey (2000) and Kangoye (2013), the terms instability and uncertainty are used interchangeably throughout the study.

2000-2011. For this purpose, it employs all dimension identified by the Financial Development and Structure Database (FDSD) of the World Bank[3]. Financial globalisation uncertainty is computed as time-dynamic[4]. At least two advantages are associated with this time-dynamic computation of uncertainty. First, the measure of FDI uncertainty is intended to be distinct from simple variations in order to capture unanticipated changes in FDI inflows. Second, the use of lengthy periodic data averages in main stream literature (e.g. Kangoye, 2013 with ten year averages) to compute uncertainty mitigates short-run or business cycle disturbances that are essential in the conception and measurement of uncertainty. Hence, the approach used to compute uncertainty by this study does not mitigate what it attempts to calibrate. The empirical evidence is based on 53 African countries and Generalised Method of Moments (GMM) with forward orthogonal deviations.

The rest of the study is structured as follows. Section 2 reviews relevant literature on the nexus between financial globalisation and development outcomes. The data and methodology are covered in Section 3. Section 4 discusses the results and some implications while Section 5 concludes with future directions and further implications.

2. Financial globalisation uncertainty and development

2.1 Conflicting views in the literature

The debate on whether the decision of complete capital account openness is rewarding or not for domestic development remains open in scholarly and policy-making circles. In accordance with Asongu (2014a), two main strands in the literature can be used to elicit the underlying debate in developing countries.

The first strand documenting potential benefits in terms of 'allocation efficiency' builds on the neoclassical growth theory for the most part (Solow, 1956). The neoclassical model is typically consistent with the assumptions that capital account liberalisation is a means to international risk sharing. Moreover, poor countries that are scarce in financial resources but wealthy in labour are provided more access to financial resources needed for investment, growth and catch-up with the developed world. Obstfeld (1998), Fischer (1998), Rogoff (1999),

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[3] Employed financial dimensions include: financial depth (overall money supply and financial system deposits); financial efficiency (at banking and financial system levels); financial activity (from banking and financial system perspectives) and financial size.
[4] Please see the methodology section for more insights.

Summers (2000) and Batuo and Asongu (2015) are consistent with the perspective that developing countries can benefit from higher investment, reduced cost of capital, higher standards of living and pro-poor growth as a result of financial globalisation. These arguments have been advanced by many developing countries to justify capital account liberalisation decisions over the past decades.

Another strand of the literature considers financial globalisation as a fanciful attempt to extend benefits from trade in international commodities to international trade in assets (Asongu, 2014a). According to this anti-thesis, the benefits of financial globalisation are increasingly being blurred by, *inter alia*: uncertainty, financial crisis, contagion as well as growing external debt dependence that is deteriorating business cycles (Leung, 2003), fuelling inequality (Azzimonti et al., 2014) and reducing productivity and efficiency (Mulwa et al., 2009).

2.2 The recent financial crisis, uncertainty and development in Africa

Consistent with Asongu et al. (2015), the recent financial crisis has provided yet more evidence of the uncertain/unstable character of financial globalisation. According to the authors, the relevant literature pertaining to African development can be discussed in three main strands, namely, uncertainty in: growth, financial flows (e.g. FDI, aid and remittances) and other macroeconomic outcomes and, financial development.

Brambila-Macias and Massa (2010) in the first strand have assessed the relationship between private capital flows and economic growth in 15 African countries between 1980-2008. The authors have concluded that due to uncertainty in financial flows, it was very likely that the financial crisis would engender negative externalities on the continent's economic performance. In another study, Chauva and Geis (2011) document a comprehensive analysis on a number of factors related to uncertainty and the crisis, notably: effects of the crisis on economic prosperity; importance of various transmission channels; monetary and fiscal policy challenges in responses; medium- and long-run issues related to sustainable recovery and hedges against future crises. The paper concludes that compared to a recent past, variations in the constituents of GDP are not significantly different from those witnessed as a result of the recent financial crisis. Price and Elu (2014) investigate whether macroeconomic shocks are amplified by regional currency integration in the face of uncertainty and financial crisis. Using the case study of the Central

African Franc Zone (CFAZ), the authors have established that growth-inhibiting credit contraction has been more apparent in countries within the CFAZ.

In the second strand on the impact on capital flows and other macroeconomic outcomes, Allen and Giovannetti (2010) have investigated channels through which the crisis has affected African fragile states to establish that remittances and trade have been important mechanisms. Arieff et al. (2010) emphasis that despite the initial optimism displayed in some academic and policy-making circles that Africa may not have been substantially affected by the crisis, it was estimated that average rates of growth would decline in 2009. The authors examine Africa's exposure to the crisis as well as implications for poverty alleviation, economic growth, political stability and fiscal balances. Massa and Te Velde (2008) investigate if eight successful countries run the risk of witnessing adverse effects in the wake of the financial crisis to establish that the crisis has been transmitted through strong reliance on: (i) tourism, remittances stock markets (e.g Kenya and Uganda); (ii) international reserves and deficits (in current and fiscal account) (e.g Ghana) and (iii) FDI and foreign-owned banks (e.g. Tanzania, Mozambique, Mali and Ghana).

In the third strand, to the best of our knowledge, uncertainty-related studies that have been oriented towards financial development have either been focused on selected African countries, positioned on stock markets or used financial development as a mechanism to other macroeconomic outcomes. Accordingly, whereas Elu and Price (2014) have used financial contraction as a channel to economic growth, Motelle and Biekpe (2015) have assessed and confirmed the hypothesis that financial sector instability is fuelled by enhanced financial integration in the Southern African Development Community (SADC). As highlighted above, the focus by Massa and Te Velde (2008) on financial markets has been limited to a selected few countries with well-functioning and globally-integrated stocks markets. They have established that the stock market of Kenya plummeted by about 40% due to uncertainty related to the crisis. How the present inquiry steers clear of discussed studies and contributes to extant literature have been discussed in the introduction.

3. Data and Methodology
3.1 Data

The study investigates a sample of 53 African countries for the period 2000-2011 using data from African Development Indicators (ADI) and the Financial Development and Structure

Database (FDSD) of the World Bank. The justification for positioning the inquiry on Africa has been provided in the introduction. The periodicity has a twofold motivation: (i) the need to provide results with more updated policy outcomes and (ii) the adopted empirical strategy requires that N(53)>T(12). Moreover, the latter is also for the purpose of restricting identification and limiting instrument proliferation, which can bias estimated results from Generalised Method of Moments (GMM).

Financial globalisation uncertainty is measured as the standard error corresponding to the first auto-regressive process of Net FDI inflows. Consistent with Asongu and De Moor (2015a), adopted dependent variable consists of all dimensions of the FDSD, namely: depth (at overall economic and financial system levels)[5], efficiency (banking and financial system efficiency)[6], activity (banking and financial system activity)[7] and size[8]. Therefore, with the exception of financial size, two indicators are used for each financial dimension for the purpose of robustness checks.

In accordance with Asongu and De Moor (2015a), five control variables are adopted, namely: public investment, inflation, GDP growth, trade openness and foreign aid. First, both empirical (Boyd et al., 2001) and theoretical (Huybens & Smith, 1999) literature support the view that higher levels of inflation are associated with smaller, less active and less efficient financial markets. Hence, low/stable inflation should be associated with higher levels of financial

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[5] "*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*" (Asongu, 2014a, p. 189).

[6] "*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')*" (Asongu, 2014a, pp.189-190).

[7] "*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*" (Asongu, 2014a, p. 190).

[8] According to the FDSD, financial intermediary size is measured as the ratio of "deposit bank assets" to "total assets" (deposit bank assets on central bank assets plus deposit bank assets: *Dbacba*).

development. Second, the positive relationship between financial development and investment has been established by Huang (2011) in an increasingly globalised world. Third, there is some consensus in the literature on the position that openness-friendly policies are conducive to financial development (Do & Levchenko, 2004; Huang & Temple, 2005). Fourth, a growing economy engenders rewards in financial development as a result of decreasing cost in financial intermediation, due to: more availability of funds for productive investments and enhanced competition (Levine, 1997). Fifth, foreign aid can either increase or decrease financial development depending on the allocated amount that is actually invested in recipient countries. In essence, whereas the effect is very likely to be positive if a substantial portion of allocated funds is invested in countries of destination, the effects may also be insignificant/negative if a great chunk of disbursed funds is either: spent in donor countries or siphon by corrupt officials in recipients countries and concealed in tax havens.

Sources and definitions of variables are disclosed in Appendix 1. The correlation matrix and summary statistics are provided in Appendix 3 and Appendix 2 respectively. According to the 'summary statistics': (i) variables can be compared on the basis of their means and (ii) reasonably estimated linkages can emerge given the substantial degrees of variations displayed by corresponding standard deviations. The objective of the correlation matrix is to reduce concerns about multicollinearity. These concerns are exclusively apparent among financial development variables which display high degrees of substitution. The underlying concerns do not pose specification issues because the financial development variables are exclusively employed as dependent variables in distinct specifications.

3.2 Methodology

3.1 Computation of uncertainty/instability

In accordance with Kangoye (2013) and Lensink and Morrissey (2000), GARCH (Generalized Auto-Regressive Conditional Heteroskedasticity) models are not appropriate for the estimation of uncertainties because they are better fit for high frequency data. They recommend the use of first-order autoregressive processes for the purpose when the frequency of employed data is annual. Hence, we use first-autoregressive processes of FDI inflows. Instead of using less dynamic standard errors associated with data averages, we compute time-dynamic standard

errors with the rollreg Stata command and save the RMSE[9] (Root-Mean Square Error) of each country as a measurement of uncertainty. The computation of uncertainty is time-dynamic because contrary to Kangoye (2013) which is based on ten year intervals, the process uses a moving window of four. Hence, more time-dynamic properties are accounted-for, in spite of the inevitable loss of four of degrees of freedom for each country[10].

The computation of uncertainty is summarised by the following equation.

$$FI_{i,t} = \alpha + \varphi FI_{i,t-1} + \kappa T + \upsilon_{i,t} \tag{1}$$

where $FI_{i,t}$ is net FDI inflows of country i at time t; $FI_{i,t-1}$ is net FDI inflows of country i at time $t-1$; T the time trend; α the constant ; φ the lagged parameter and $\upsilon_{i,t}$ the forecast error.

Uncertainty is measured by computing for each country the RMSE corresponding to Eq (1). Given that we have a four-year moving window and a time series of twelve years for each country, the regression output reveals eight RMSE for each country. Moreover at least two advantages are associated with this time-dynamic computation of uncertainty. First, the measure of FDI uncertainty is intended to be distinct from simple variations in order to capture unanticipated changes in FDI inflows. Second, the use of data averages (e.g. Kangoye, 2013) to compute uncertainty over a long period of time mitigates short-run or business cycle disturbances that are essential in the conception and measurement of uncertainty. Hence, the approach in this study does not mitigate what it attempts to calibrate.

3.2 Empirical approach

In accordance with Asongu and De Moor (2015a), the study adopts a GMM approach for five principal reasons. Whereas the first-two are requirements for adopting the empirical approach, the last-three are advantages associated with employing the empirical strategy. First, the estimation technique is a good fit because of persistence in the dependent variables. In essence, the rule of thumb threshold of 0.800 required for persistence is confirmed from Appendix 4 in which the lowest correlation between the dependent variables and their

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[9]Consistent with Kitagawa and Okuda (2013), the RMSE (Root-Mean-Square Error) can be used to measure uncertainty or standard deviation of residuals.

[10] It is important to note that in the computation of time-dynamic uncertainty, the specification is such that we lose four degrees of freedom for each country because, consistent with the Stata rollreg command, the rolling window should be higher than the independent variables by at least one degree of freedom. We have three independent variables in the autoregressive process, namely: a constant, a time trend and the lagged FDI variable.

corresponding lagged values is 0.9282. Second, N>T because: the number of countries (N) and years per country (T) are respectively 53 and 12. Third, the approach controls for endogeneity in all regressions. Fourth, the technique accounts for cross-country variations. Fifth, potential concerns about small sample biases in the difference estimator are mitigated by the system estimator. It is principally for this fifth reason that Bond et al. (2001, pp. 3-4) have recommended the system GMM estimator (Arellano & Bover, 1995; Blundell & Bond, 1998) because it addresses the highlighted shortcoming in the difference estimator (Arellano & Bond, 1991).

This study adopts the Roodman (2009ab) extension of Arellano and Bover (1995) which uses forward orthogonal deviations as opposed to differences. This approach has been documented to limit instrument proliferation and account for cross-sectional dependence (see Love & Zicchino, 2006; Baltagi, 2008). In the specification, a *two-step* approach is adopted because it accounts for heteroscedasticity. Accordingly, the *one-step* specification is homoscedasticity-consistent.

The following equations in levels (2) and first difference (3) summarize the standard system GMM estimation procedure.

$$FD_{i,t} = \sigma_0 + \sigma_1 FD_{i,t-\tau} + \sigma_2 FU_{i,t} + \sum_{h=1}^{5} \delta_h W_{h,i,t-\tau} + \eta_i + \xi_t + \varepsilon_{i,t} \qquad (2)$$

$$FD_{i,t} - FD_{i,t-\tau} = \sigma_0 + \sigma_1(FD_{i,t-\tau} - FD_{i,t-2\tau}) + \sigma_2(FU_{i,t} - FU_{i,t-\tau})$$
$$+ \sum_{h=1}^{5} \delta_h(W_{h,i,t-\tau} - W_{h,i,t-2\tau}) + (\xi_t - \xi_{t-\tau}) + \varepsilon_{i,t-\tau} \qquad (3)$$

Where: $FD_{i,t}$ is a financial development dynamic (depth, efficiency, activity or size) of country i at period t; α is a constant; τ represents tau ; FU, Financial globalisation uncertainty; W is the vector of control variables (*GDP growth, inflation, public investment, foreign aid* and *trade openness*), η_i is the country-specific effect, ξ_t is the time-specific constant and $\varepsilon_{i,t}$ the error term. In the specification, we prefer the *two-step* to the *one-step* procedure because it is heteroscedasticity-consistent.

4. Empirical results

4.1 Presentation of results

The findings corresponding to 'financial depth', 'financial efficiency', and 'financial activity and size' are provided in Tables 1, 2 and 3 respectively. Each of the tables consists of three specifications, corresponding to the: full sample; sub-sample with above-median FDI uncertainty (FDIUn>M) and sub-sample with below (or equal) median FDI (FDIUn≤M)[11]. The use of median as a sub-sampling criterion has a twofold motivation. First, it avails room for more policy implications by providing more dynamics in FDI uncertainty. In essence, the degree of uncertainty may also affect estimated coefficients. Second, for the underlying comparative purpose, a median enables sub-sampling symmetry.

In accordance with Asongu and De Moor (2015a), four main information criteria are used to examine the validity of estimated models. First, the alternative hypothesis of the second-order Arellano and Bond autocorrelation test (AR(2)) in difference for the presence of autocorrelation in the residuals should be rejected. Second, the alternative hypotheses corresponding to the Sargan and Hansen over-identification restrictions (OIR) tests should also be rejected because they are consistent with the position that the instruments are correlated with the error or not valid. It is important to note that the Sargan (Hansen) OIR test is not robust (robust) but not weakened (weakened) by instruments. It is in this light that the specifications are tailored to limit instrument proliferation (or restrict over-identification) by ensuring that the number of countries in every specification is higher than the associated number of instruments. Moreover, OIR tests are further assessed with the Difference in Hansen Test (DHT) for exogeneity of instruments in order to ascertain the validity of Hansen OIR results. Fourth, a Fischer test for the joint validity of estimated coefficients is also disclosed.

The following findings can be established from Table 1 on 'financial globalisation uncertainty and financial depth'. First, the effect of FDI uncertainty is neither significant on money supply on the left-hand-side (LHS), nor on financial system deposits on the right-hand-side (RHS). Second, with the exception of GDP growth which consistently displays an unexpected negative sign, the significant control variables have expected signs for the most part. The unexpected effect of GDP may be traceable to ongoing concerns about immiserizing growth

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[11] For simplicity in presentation and purpose of readability the 'sub-sample with below-median FDIUn' is used to refer to the 'sub-sample with below (or equal) median FDIUn'.

in Africa. In essence, despite of the continent enjoying over two decades of growth resurgence that began in the mid 1990s (Fosu, 2015, p. 44), a recent World Bank report on poverty for Millennium Development Goals (MDGs) targets has revealed that extreme poverty has been declining in all regions of the world with the exception of Africa (World Bank, 2015).

Table 1: Financial Depth and Financial Globalisation Uncertainty

	Financial Depth					
	Economic Depth (Money Supply)			**Financial System Depth (Deposits)**		
	Full Sample	FDIUn ≤M	FDIUn>M	Full Sample	FDIUn ≤M	FDIUn>M
Constant	-1.410	-0.072	**-2.594****	-1.274	-1.417	**-3.320*****
	(0.333)	(0.958)	**(0.012)**	(0.395)	(0.378)	**(0.001)**
Money Supply (-1)	**1.026****	**0.973****	**1.008****	---	---	---
	(0.000)	**(0.000)**	**(0.000)**			
Financial System Deposits (-1)	---	---	---	**1.039****	**1.022****	**1.032****
				(0.000)	**(0.000)**	**(0.000)**
FDIUn	-0.007	-0.398	0.0009	0.017	-0.271	-0.016
	(0.903)	(0.342)	(0.976)	(0.739)	(0.370)	(0.368)
GDP growth	**-0.209****	**-0.192***	**-0.136****	**-0.065***	-0.043	**-0.079****
	(0.000)	**(0.055)**	**(0.000)**	**(0.051)**	(0.357)	**(0.000)**
Inflation	**-0.021****	**-0.020****	0.021	**-0.017****	**-0.017****	0.019
	(0.000)	**(0.005)**	(0.367)	**(0.001)**	**(0.000)**	(0.301)
Public Investment	**-0.061***	0.024	0.046	0.003	0.050	0.034
	(0.065)	(0.580)	(0.103)	(0.884)	(0.182)	(0.209)
Foreign Aid	0.070	0.078	0.004	**0.061***	0.035	0.002
	(0.113)	(0.183)	(0.747)	**(0.098)**	(0.416)	(0.853)
Trade	**0.032****	**0.045****	**0.031****	0.020	**0.036****	**0.030****
	(0.021)	**(0.000)**	**(0.004)**	(0.155)	**(0.048)**	**(0.001)**
AR(1)	(0.013)	(0.041)	(0.040)	(0.001)	(0.003)	(0.002)
AR(2)	**(0.317)**	**(0.272)**	**(0.274)**	**(0.425)**	**(0.279)**	**(0.182)**
Sargan OIR	(0.011)	(0.009)	(0.000)	(0.000)	(0.006)	(0.000)
Hansen OIR	(0.079)	**(0.818)**	**(0.220)**	**(0.227)**	**(0.859)**	**(0.291)**
DHT for instruments						
(a)Instruments in levels						
H excluding group	**(0.134)**	**(0.409)**	**(0.285)**	(0.071)	**(0.311)**	**(0.158)**
Dif(null, H=exogenous)	**(0.142)**	**(0.888)**	**(0.249)**	**(0.560)**	**(0.963)**	**(0.482)**
(b) IV (years, eq(diff))						
H excluding group	(0.048)	**(0.808)**	**(0.100)**	**(0.100)**	**(0.534)**	**(0.180)**
Dif(null, H=exogenous)	**(0.426)**	**(0.576)**	**(0.679)**	**(0.697)**	**(0.976)**	**(0.586)**
Fisher	**854.74***	**806.18***	**11208.6***	**1198.98***	**869.68***	**2317.38***
Instruments	34	34	34	34	34	34
Countries	46	40	36	46	40	36
Observations	311	158	156	311	158	153

*,**,***: significance levels of 10%, 5% and 1% respectively. FDIUn: Foreign Direct Investment Uncertainty. FDIUn median = 1.0248. DHT: Difference in Hansen Test for Exogeneity of Instruments' Subsets. Dif: Difference. OIR: Over-identifying Restrictions Test. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Fisher statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(1) and AR(2) tests and; b) the validity of the instruments in the Sargan OIR test.

From Table 2 on the nexus between FDI uncertainty and financial development, the following are apparent. First, on the RHS, results corresponding to financial system efficiency are not valid because the null hypotheses of the AR(2) test are rejected. Second, FDI uncertainty increases banking system efficiency. This finding is driven by the above-median sub-sample. Third, the control variables are significant with expected signs because the dependent variables of Table 2 are conflicting with those of Table 1. Accordingly, financial allocation efficiency is the ability to transform mobilised financial system deposits into credit for economic operators. Hence, improving financial allocation efficiency is to the detriment of liquid liabilities or financial system deposits.

Table 2: Banking Efficiency and Financial Globalisation Uncertainty

	Financial Efficiency					
	Banking System Efficiency (BcBd)			**Financial System Efficiency (FcFd)**		
	Full Sample	FDIUn ≤M	FDIUn>M	Full Sample	FDIUn ≤M	FDIUn>M
Constant	**18.913*****	**16.333*****	**11.927*****	**7.646****	**35.611*****	-1.713
	(0.000)	**(0.006)**	**(0.001)**	**(0.017)**	**(0.000)**	(0.339)
Banking System Efficiency (-1)	**0.831*****	**0.838*****	**0.862*****	---	---	---
	(0.000)	**(0.000)**	**(0.000)**			
Financial System Efficiency (-1)	---	---	---	**0.944*****	**0.905*****	**0.965*****
				(0.000)	**(0.000)**	**(0.000)**
FDIUn	**0.420*****	-0.547	**0.484*****	**0.678*****	0.394	**0.386*****
	(0.007)	(0.654)	**(0.000)**	**(0.000)**	(0.829)	**(0.000)**
GDP growth	**0.252*****	**0.505*****	0.019	**0.293*****	**0.695*****	**0.287*****
	(0.001)	**(0.000)**	(0.652)	**(0.000)**	**(0.001)**	**(0.000)**
Inflation	**0.0005*****	**0.0007*****	0.001	**-0.058*****	**-0.033*****	**0.239*****
	(0.000)	**(0.000)**	(0.976)	**(0.000)**	**(0.001)**	**(0.000)**
Public Investment	**-0.355*****	**-0.379****	0.125	0.054	-0.346	**0.391*****
	(0.001)	**(0.029)**	(0.147)	(0.526)	(0.175)	**(0.000)**
Foreign Aid	**-0.365*****	0.004	-0.069	**-0.242***	**-0.993*****	**0.123*****
	(0.003)	(0.969)	(0.174)	**(0.052)**	**(0.000)**	**(0.000)**
Trade	0.010	-0.081	-0.030	**-0.059*****	**-0.257*****	**-0.067*****
	(0.798)	(0.124)	(0.147)	**(0.001)**	**(0.000)**	**(0.000)**
AR(1)	(0.003)	(0.010)	(0.005)	(0.088)	**(0.216)**	**(0.218)**
AR(2)	**(0.132)**	**(0.133)**	**(0.120)**	(0.004)	(0.031)	(0.009)
Sargan OIR	(0.161)	(0.055)	(0.078)	(0.000)	(0.002)	(0.001)
Hansen OIR	**(0.407)**	**(0.126)**	**(0.778)**	**(0.125)**	**(0.171)**	**(0.562)**
DHT for instruments						
(a)Instruments in levels						
H excluding group	**(0.120)**	**(0.509)**	**(0.480)**	**(0.255)**	**(0.155)**	**(0.775)**
Dif(null, H=exogenous)	**(0.721)**	(0.076)	**(0.803)**	**(0.142)**	**(0.286)**	**(0.364)**
(b) IV (years, eq(diff))						
H excluding group	**(0.465)**	**(0.312)**	**(0.715)**	(0.027)	**(0.114)**	**(0.461)**
Dif(null, H=exogenous)	**(0.330)**	(0.091)	**(0.630)**	**(0.871)**	**(0.469)**	**(0.587)**
Fisher	**281.05*****	**541.77*****	**2643.32*****	**631.34*****	**153.32*****	**2695.76*****

Instruments	34	34	34	34	34	34
Countries	46	40	36	46	40	36
Observations	318	161	157	311	158	153

*,**,***: significance levels of 10%, 5% and 1% respectively. FDIUn: Foreign Direct Investment Uncertainty. FDIUn median = 1.0248. DHT: Difference in Hansen Test for Exogeneity of Instruments' Subsets. Dif: Difference. OIR: Over-identifying Restrictions Test. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Fisher statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(1) and AR(2) tests and; b) the validity of the instruments in the Sargan OIR test.

The following findings can be established from Table 3. First, FDI uncertainty has no significant effect on financial size. Second, the FDI uncertainty increases financial activity and the results are driven by above-median FDI uncertainty levels. This narrative applies to banking system activity as well as financial system activity, especially if only significance levels of 5% and 1% are considered. Third, most of the significant control variables have expected signs.

Table 3: Financial Activity, Financial Size and Financial Globalisation Uncertainty

	Financial Activity						Financial Size		
	Banking System Activity (Pcrb)			Financial System Activity (Pcrbof)					
	Full Sample	FDIUn ≤M	FDIUn>M	Full Sample	FDIUn ≤M	FDIUn>M	Full Sample	FDIUn ≤M	FDIUn>M
Constant	**-5.425***	-2.401	**-2.416***	**-7.224***	-4.760	**-2.890***	**14.362***	**15.995***	0.887
	(0.003)	(0.256)	**(0.004)**	**(0.000)**	(0.145)	**(0.005)**	**(0.001)**	**(0.001)**	(0.649)
Banking Sys. Activity (-1)	**1.105***	**1.147***	**1.034***	---	---	---	---	---	---
	(0.000)	**(0.000)**	**(0.000)**						
Financial Sys. Activity (-1)	---	---	---	**1.132***	**1.222***	**1.071***	---	---	---
				(0.000)	**(0.000)**	**(0.000)**			
Financial Size (-1)	---	---	---	---	---	---	**0.795***	**0.854***	**0.910***
							(0.000)	**(0.000)**	**(0.000)**
FDIUn	0.062	**-0.672***	**0.053***	**0.086***	**-0.951****	**0.038****	-0.101	-0.132	0.024
	(0.210)	**(0.057)**	**(0.007)**	**(0.081)**	**(0.049)**	**(0.028)**	(0.170)	(0.822)	(0.551)
GDP growth	0.022	**0.123***	**-0.030***	0.025	0.108	**-0.026****	-0.044	0.186	-0.030
	(0.449)	**(0.058)**	**(0.006)**	(0.452)	(0.166)	**(0.025)**	(0.339)	(0.198)	(0.315)
Inflation	**-0.013***	**-0.007***	**0.071***	**-0.017***	**-0.011****	**0.058***	**-0.068***	**-0.058***	**0.072****
	(0.000)	**(0.058)**	**(0.000)**	**(0.000)**	**(0.013)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.018)**
Public Investment	**-0.013***	**0.140***	**0.103***	**0.108***	0.123	**0.110***	0.070	**0.225***	**-0.179****
	(0.000)	**(0.052)**	**(0.001)**	**(0.005)**	(0.219)	**(0.001)**	(0.289)	**(0.000)**	**(0.039)**
Foreign Aid	0.028	**-0.108***	0.008	0.016	**-0.108***	-0.014	-0.032	**-0.374***	-0.024
	(0.390)	**(0.000)**	(0.606)	(0.655)	**(0.008)**	(0.360)	(0.713)	**(0.002)**	(0.620)
Trade	**0.033***	0.013	0.009	**0.045***	0.025	**0.014***	**0.048***	-0.033	**0.085***
	(0.004)	(0.292)	(0.179)	**(0.000)**	(0.172)	**(0.063)**	**(0.031)**	(0.223)	**(0.000)**
AR(1)	(0.006)	(0.018)	(0.032)	(0.020)	(0.076)	(0.066)	(0.062)	(0.007)	**(0.110)**
AR(2)	**(0.198)**	**(0.238)**	**(0.159)**	(0.064)	**(0.166)**	(0.052)	**(0.640)**	**(0.279)**	**(0.922)**
Sargan OIR	(0.000)	**(0.161)**	(0.001)	(0.000)	(0.099)	(0.001)	(0.006)	**(0.388)**	**(0.109)**
Hansen OIR	**(0.352)**	**(0.308)**	**(0.281)**	**(0.253)**	**(0.508)**	**(0.431)**	**(0.422)**	**(0.418)**	**(0.400)**
DHT for instruments									
(a)Instruments in levels									
H excluding group	**(0.259)**	**(0.269)**	**(0.681)**	**(0.328)**	**(0.384)**	**(0.607)**	**(0.454)**	**(0.417)**	**(0.478)**
Dif(null, H=exogenous)	**(0.447)**	**(0.378)**	**(0.154)**	**(0.265)**	**(0.539)**	**(0.315)**	**(0.386)**	**(0.406)**	**(0.348)**
(b) IV (years, eq(diff))									
H excluding group	**(0.274)**	**(0.239)**	(0.099)	**(0.334)**	**(0.303)**	**(0.607)**	**(0.353)**	**(0.604)**	**(0.440)**
Dif(null, H=exogenous)	**(0.504)**	**(0.485)**	**(0.839)**	**(0.243)**	**(0.749)**	**(0.315)**	**(0.502)**	**(0.221)**	**(0.347)**
Fisher	**1080.12***	**1429.02***	**16649.9***	**1118.68***	**734.13***	**3599.74***	**696.32***	**848.64***	**6680.68***
Instruments	34	34	34	34	34	34	34	34	34

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Countries	46	40	36	46	40	36	46	40	36
Observations	311	158	153	313	158	155	313	159	154

*,**,***: significance levels of 10%, 5% and 1% respectively. FDIUn: Foreign Direct Investment Uncertainty. Syst: System. FDIUn median = 1.0248. DHT: Difference in Hansen Test for Exogeneity of Instruments' Subsets. Dif: Difference. OIR: Over-identifying Restrictions Test. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Fisher statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(1) and AR(2) tests and; b) the validity of the instruments in the Sargan OIR test.

4.2 Further discussion and policy implications

The findings are discussed in two main strands, notably: significant nexuses with financial development and insignificant relationships.

In the first strand, we have observed that financial globalisation uncertainty increases banking system efficiency, banking system activity and financial system activity. Moreover, the positive effects are consistently driven the above-median levels of uncertainty. The accordance of findings from dynamics of efficiency and activity is consistent with economic theory because financial activity (or credit) automatically increases with financial allocation efficiency: transformation of deposits into credit. It follows that uncertainty in foreign capital flows may be a disguised advantage for domestic financial development, especially in terms of dealing with the issue of surplus liquidity in African financial institutions. This inference on FDI is broadly consistent with recent foreign aid literature. Accordingly, the hypothesis suggests that in the absence of foreign aid, governments of recipient countries are more politically accountable has been formulated by Eubank (2012) on Somaliland an empirically verified in Africa (Asongu, 2015). A possible explanation behind the finding being discussed is this that when recipient countries are confronted with uncertainty in external flows, they are more likely to improve domestic institutions in order to hedge risks associated with the underlying uncertainty. Such improvements are not limited to the nexus between foreign aid and political institutions but as we have established, well extend to the relationship between FDI inflows and financial intermediary institutions. As a policy implication, the substantially documented concern about surplus liquidity in African financial intermediary institutions (Saxegaard, 2006; Fouda, 2009) which has partially motivated this inquiry can be addressed in the face of uncertainty in FDI inflows.

We devote the second strand to elucidating why effects of FDI uncertainty on financial depth (money supply and liquid liabilities) and financial size are not significant. First, the insignificant effects on financial system deposits and money supply may be partially traceable to the fact in that FDI uncertainty is associated fundamentally with reductions in capital flows since

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a substantial part of the sample captures the financial crisis and post-crisis periods. Accordingly, it is logical to expect decreases in financial system deposit and money supply, resulting from a reduced inflow of foreign capital. In essence, such inflows are traditionally deposited in domestic bank accounts. Corresponding money supply is improved because it is positively associated with financial system deposits. Moreover, the fact that most estimated FDI uncertainty signs are insignificantly negative also aligns with the positive effects on financial allocation efficiency and financial activity discussed above. Accordingly, financial system efficiency by conception and definition develops to the detriment of financial deposits (or liquid liabilities).

Second, elucidating the insignificant effect of financial size is not as straight forward because we are required to engage components of its definition. Financial size is defined as *deposit bank asset* on *total assets*. *Total assets* refer to *deposit bank assets* plus *central bank assets*. '*Deposit bank assets'* refers to: (i) money and property owned by banks and (ii) money that is owed the banks. While the former partially reflects *financial depth*, the latter mirrors *financial activity*. We have also observed from the findings that only financial activity is positively affected by FDI uncertainty. Hence, a possible explanation of *financial size* not being affected positively could be traceable to how FDI uncertainty affects the proportion of property owned by banks. We do not have this data on 'proportion of property' but from a logical inference, such property is not positively influenced by FDI uncertainty.

5. Concluding implications and future directions

This study complements extant literature by assessing the effect financial globalisation uncertainty on financial development in 53 African countries for the period 2000-2011. Financial globalisation uncertainty is estimated as time-dynamic to capture business cycle disturbances while all dimensions identified by the Financial Development and Structure Database of the World Bank are employed, namely: financial depth (money supply and liquid liabilities), financial system efficiency (at banking and financial system levels), financial system activity (from banking system and financial system perspectives) and financial size. The empirical evidence is based on the Generalised Method of Moments with forward orthogonal deviations. The following findings are established. First financial globalisation uncertainty does not significantly affect money supply, financial system deposits and financial size. Second, financial globalisation uncertainty increases banking system efficiency, banking system activity and

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financial system activity. Moreover, the positive effects are consistently driven by above-median levels of uncertainty. It follows that uncertainty in foreign capital flows may be a disguised advantage for domestic financial development, especially in dealing with the substantially documented issue of surplus liquidity in African financial institutions. Justifications for the nexuses have been discussed.

In light of ongoing debates, the findings can be further engaged in five main points that double as policy implications. First, from the perspective financial intermediary allocation efficiency, findings of the study do not support the sceptical view that the hypothesis of 'allocation efficiency' in financial globalisation is only plausible on the condition that domestic economies experience no volatilities (with the exception of barriers to the free movement of capital). The position on scepticism has been sustained by Rodrik (1998) and Rodrik and Subramanian (2009) with respectively provocative titles like '*Who Needs Capital-Account Convertibility?*' and '*Why Did Financial Globalization Disappoint?*'.

Second, the position of Rodrik and Subramanian (2009) that the cost of financial globalisation is increasingly apparent because of magnitudes and frequencies of financial crises is not partially supported by the results of this inquiry from a financial intermediary development stand point. This is essentially because the recent financial crisis period (2007-2008) is part of the sampled periodicity.

Third, the narrative by Asongu and De Moor (2015a) on the downsides of financial instability is not substantiated by our findings. Accordingly, in motivating their inquiry, they have argued that there is an inverse nexus between financial instability and, inter alia: quick mobilization of productive savings, mitigation of information asymmetry, consolidation of risk-sharing and efficient allocation of resources.

Fourth, given that financial globalisation has become an ineluctable process whose challenges can be neglected only by sacrificing the prosperity of nations, we may conclude that Dornbush and Fisher were partially right in their positions before the 21st century because, our findings demonstrate that domestic economies faced with uncertainty in financial globalisation can also take advantage of such uncertainties in boosting the transformation of domestically mobilised resources into credit for economic operators. For brevity and lack of space, the interested reader can refer to: (i) Stanley Fischer's famous speech during the International Monetary Fund (IMF)'s Annual Meeting in 1997 (Fischer, 1997) and (ii) Dornbusch's

advocacies which considered capital controls as "*an idea who's time had past*" (Dornbusch, 1996) and two years later reaffirmed that "*the correct answer to the question of capital mobility is that it ought to be unrestricted*" (Dornbusch, 1998, p. 20).

Fifth, the position by Kose et al. (2011) that developing countries that have depended less on foreign capital (due to greater reliance on mobilising domestic savings for investment purposes) have been performing comparatively better than their counterparts (of less domestic reliance), can be partially substantiated with findings of this study.

The inquiry leaves room for extension in a number fronts, notably, repositioning of the study with emphasis on *inter alia*: conditional distributions of financial development, financial sector competition and pre- and post-crisis dynamics.

Appendices

Appendix 1: 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 Globalization Uncertainty	FDIUn	Root Mean Square Error of the first autoregressive process of financial globalization.	Authors' computation
Economic Prosperity	GDPg	GDP Growth (annual %)	World Bank (WDI)
Inflation	Infl	Consumer Price Index (annual %)	World Bank (WDI)
Public Investment	PubIvt	Gross Public Investment (% of GDP)	World Bank (WDI)
Development Assistance	NODA	Total Net Official Development Assistance (% of GDP)	World Bank (WDI)
Trade openness	Trade	Imports plus Exports in commodities (% of GDP)	World Bank (WDI)

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

Appendix 2: Summary Statistics (2000-2011)

	Variables	Mean	S.D	Min.	Max.	Observations
	Economic Financial Depth (M2)	33.045	22.112	4.129	112.83	561
	Financial System Depth (Fdgdp)	26.882	20.888	1.690	97.823	561
Financial	Banking System Efficiency (BcBd)	68.032	29.020	14.106	171.85	606
Development	Financial System Efficiency (FcFd)	73.540	37.419	13.753	260.66	561
	Banking System Activity (Pcrb)	18.763	17.452	0.551	86.720	561
	Financial System Activity (Pcrbof)	20.635	23.495	0.010	149.77	563
	Financial Size (Dbacba)	74.276	22.454	2.982	99.999	602
Financial Globalization Uncertainty	FDI Uncertainty (FDIUn)	2.217	4.970	0.001	67.351	409
	Economic Prosperity (GDPg)	4.682	5.761	32.832	63.379	608
Control	Inflation	56.216	1020.10	-9.797	24411	574
Variables	Public Investment	7.457	4.437	0	43.011	546
	Development Assistance	10.576	12.608	-0.251	147.05	615
	Trade Openness (Trade)	78.672	35.101	22.353	209.87	599

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. FDIUn: Foreign Direct Investment Uncertainty. GDPg: GDP growth.

Appendix 3: Correlation Analysis (Uniform sample size : 321)

Financial Depth		Financial Efficiency		Financial Activity		Fin. Size	Other variables						
M2	Fdgdp	BcBd	FcFd	Prcb	Pcrbof	Dbacba	GDPg	Inflation	PubIvt	NODA	Trade	FDIUn	
1.000	0.975	0.075	0.088	0.819	0.653	0.385	-0.110	-0.079	0.048	-0.257	0.126	-0.168	M2
	1.000	0.110	0.197	0.880	0.751	0.436	-0.096	-0.064	0.062	-0.283	0.141	-0.167	Fdgdp
		1.000	0.864	0.487	0.490	0.243	-0.054	-0.128	-0.212	-0.088	-0.156	0.031	Bcbd
			1.000	0.570	0.730	0.240	-0.078	-0.087	-0.182	-0.140	-0.178	0.002	FcFd
				1.000	0.924	0.471	-0.098	-0.085	-0.072	-0.303	0.095	-0.119	Pcrb
					1.000	0.411	-0.098	-0.070	-0.071	-0.293	0.022	-0.100	Pcrbof
						1.000	-0.028	-0.140	0.169	-0.385	0.229	-0.102	Dbacba
							1.000	-0.155	0.152	0.078	0.081	0.327	GDPg
								1.000	-0.082	0.007	-0.015	-0.018	Inflation
									1.000	0.027	0.014	0.086	PubIvt
										1.000	-0.318	-0.074	NODA
											1.000	0.298	Trade
												1.000	FDIUn

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. FDIUn: Foreign Direct Investment Uncertainty. GDPg: GDP growth. PubIvt: Public Investment. NODA: Net Official Development Assistance. Fin: Financial.

Appendix 4: Persistence of the dependent variables

	Financial Depth		Financial Efficiency		Financial Activity		Fin. Size
	M2	Fdgdp	BcBd	FcFd	Pcrd	Pcrdof	Dbacba
M2(-1)	0.9819						
Fdgdp(-1)		0.9882					
BcBd(-1)			0.9282				
FcFd(-1)				0.9717			
Pcrd (-1)					0.9912		
Pcrdof(-1)						0.9940	
Dbacba(-1)							0.9338

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. M2(-1): Lagged value of Money Supply. Fin: Financial.

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