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Abstract

In the aftermath of the recent global financial crisis, the implication of financial liberalisation for stability and economic growth has come under increasing scrutiny. One strand of literature posits a positive relationship between financial liberalisation and economic growth and development. However, others emphasise that the link between financial liberalisation is intrinsically associated with financial instability which may be harmful to economic growth and development. In this study, we offer an empirical analysis assessing the relationship between financial instability, financial liberalisation, financial development and economic growth based on a dataset of 41 African countries spanning the years 1985-2010. The results suggest that the link between financial development and liberalisation has a positive and significant effect on financial instability but the latter has a harmful effect on economic growth, which are more pronounced in the pre- financial liberalisation periods than in the post-liberalisation.

Keywords: Economic Growth , Financial Development, Financial instability and Africa

JEL classifications: O16, O47,G23, O55

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1. Introduction

In Africa, by the late 1980s and early 1990s against an unfavourable background of rapidly deteriorating economic and financial conditions, many countries in Africa undertook far reaching economic reforms (see Aryeetey, 1994; Collier, 1993; Ekpenyony 1994; Kesekende and Atingi Ego, 1999; Khan and Reinhart, 1990). Within the framework of the structural adjustment programs supported by IMF and World Bank, these countries restructured their economies in order to achieve private sector led growth, through a market based system (the World Bank, 1994). Financial liberalisation was a significant component of these reforms, this enabled the deregulation of the foreign sector capital account, the deregulation of the domestic financial sector, and this also enabled the stock market sector to be viewed separately from the domestic financial sector (Kaminsky and Schmukler, 2003) . Overall, while the reform succeeded in easing financial repression, the impact on increasing growth, and investment has been patchy while the African financial system remains shallow and relatively underdeveloped (see Reinhart and Tokatlidis, 2003). Instead the liberalisation appeared to engender greater instability and crises, particularly in the financial sector (Demirguc- Kunt and Detragiache, 1999).

Financial instability, conversely, could manifest itself in banking failures, intense asset price volatility or a collapse in market liquidity and, ultimately, in a disruption in the payment and settlement system. Financial instability affects the real sector due to its links to the financial sector. It has the potential to cause significant macroeconomic costs, as it interferes with production, consumption, and investment, and, therefore, defeats the national goals of broader economic growth and development. Kaminsky and Reinhart's results in confirmed this assertion insofar as they found that financial instability was positively associated with financial development. Taken from this perspective it can be seen that safeguarding financial stability and identifying vulnerabilities within the financial system is essential to financial development. Some of these vulnerabilities have macroeconomic dimensions, such as changes in the conditions of household and corporation sector

balance sheets, and developments in credit and asset markets, all of which have the potential to affect the level and distribution of financial risk within the economy.

Many leading African economists thought that the 2008 financial crisis could not affect the continent because Africa's bank and capital markets are not strongly integrated with the global market, or thet thought that the impact of the crisis on Africa would be minimal, but the effect of the crisis on the financial sector of the large economies in Africa has been quite adverse and substantial, (see Murinde, 2010).

In this paper, we examined the effect of financial liberalisation, financial development and economic growth on financial instablity in Africa. In particular, we investigate whether financial instability has an impact on economic growth in African countries and whether the financial development and liberalisation that has been ongoing in Africa is associated with financial instability. In addition we examine whether the relationship between financial development and financial instability is more pronounced in the pre-liberalisation period or in the post-liberalisation period. These questions are not trivial , considering the fact that instability is an inherent feature of the financial system, and that there is clear evidence in economic literature that financial liberalisation also raises economic costs, in terms of inflated financial fragility due to the inefficient and underdeveloped banking sector in developing countries.

These issue are even more relevant given that the subject of preverving financial stability has become a very important one on the international financial institution agenda. These issues are also important for African countries, because their financial development is happening very quickly, and they need to integrate their economies into both the international financial structure, and international financial markets. We need to bear in mind the factor that can affect financial instability and stability , and we need to take particular note of how these factors interact with some other to promote further growth.

This paper adopts the dynamic panel method to illustrate the effect of the relationship between financial development, liberalisation and economic growth on the financial instability of a sample

of 41 African countries from 1985 to 2010. Our results show that financial development and liberalisation have a statistically significant effect on financial instability but the latter has a harmful effect on economic growth, which is more pronounced in the pre-financial liberalisation periods than in the post-financial liberalisation periods.

There are a few studies that directly link financial instability, financial development and Economic growth (Reinhart and Kamnsky (1998), Demirguc-Kunt and Detragiach (1988), Guillaumont and Kpodar (2004) and Loayza and Ranciere (2004). In this paper we restrict our focus to African countries only, which have been liberalising and developing their financial sectors in order to become efficient. With respect to the previous papers, we consider both financial development and financial liberalisation in the analyisi. We also verifty the effect in the pre and post-financial liberalisation periods and construct a continuous financial instability index by applying a principal component analysis on a number of financial instability indicators.

The paper proceeds as follows: Section 2 is an outline of the theoretical background and literature review, while in Section 3, we describe the methodology and data used. Section 4 presents the results and Section 5, summarises the main conclusions.

2. The Theoretical background and Literature Review

The role of the financial system is essential to the economy and channels funds to those agents in the economy that have productive investment prospects (see Schumpeter (1911)[1]. Earlier scholars such as Goldsmith (1969), Mckinnon (1973) and Shaw (1973) established the existence of a positive relationship between financial development and economic growth. Recently, similar results were also achieved by King and Livine (1992, 1993), Livine (1998), Rajan and Zingales (1998) and Shahbaz (2009). However, if the system does not perform at the optimum level, then the economy cannot operate efficiently and economic growth will be hindered. The main obstacle to

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[1] According to Schumpeter, financial services are necessary for the development of entrepreneurship, the improvement of technology, productivity, and the acceleration of growth.

the efficient functioning of the financial system is the asymmetric information (see, Stiglitz and Weiss, 1992), which leads to two simple problems in the financial system: adverse selection and moral hazard. There are ways to try to mitigate these problems. In the case of adverse selection, Akerlof (1970) proposes the lemons problem analysis which requires that governments must screen out good from bad credit risks. For moral hazard problem to be reduced, governments must impose restriction on borrowers so that borrowers do not engage in behaviour that makes it less likely that they can pay back loans.

Over the two last decades, the institutional structure of the financial system has been evolving try to alleviate the problem of asymmetric information and try to avoid financial instability difficulties. Financial instability occurs when shocks to the financial system interfere with information flows so that the financial system can no longer do its jobs of mobilising saving, facilitating exchange of goods and services, reducing risk, and allocating resources to productive sectors. Deprived of these savings, the productive sector cuts it's spending, causing a contraction of economic activity, which can sometimes be quite harsh. Without a doubt, fluctuations are associated with the volatility that is caused by a decision to invest, which not only affects aggregate demand and employment as Keynes (1936) suggests, but also affects the introduction of new products, processes and new management methods as Schumpeter (1911) suggested. If the financial crisis is harsh enough, it can almost lead to a complete breakdown in the functioning of financial markets, which can provoke financial instability.

A pioneer of this study was Hyman Minsky; who linked financial system fragility with speculative investment finance. His theory was that "the internal dynamics of capitalist economies leads, over a period dominated by the full successful operation of a capitalist economy, to the emergence of financial structures which are conducive to debt deflation, the collapse of asset values and deep depressions" (Minsky, 1992b). According to Minsky (1980:215), instability underlies the appearance of stability in the financial markets. During periods of stability, when stock prices are

rising higher than the interest rate, investors are lured into taking more risks, which leads them to borrow more and to over pay for assets.

Blejer (2006), points out three basic reasons for financial instability in the financial sector. Firstly, severe financial instability occurs when there is a dramatic growth in the volume of financial intermediation. Secondly, globalisation sees the whole world as a village, so integration of financial institutions seems to increase the systemic risk. The complexity of financial instruments is also a reason for financial instability and it is not easy to understand such financial instruments.

Eichengreen, (2004) indicated four causes of financial instability and crisis which are: unsustainable macroeconomic policies[2] ,the government and countries suffering of crises because they sustain inconsistent and unsustainable policies (see, Krugman, 1971). The next source indicated was the fragility of the financial system. Financial weakness [3] and the prevalence of currency mismatches in the financial system as pointed out by Goldstein and Turner, (2003) seemed to be the key font of financial fragility. Flaws in the structure of international financial markets were found by Keynes (1933), Nurkse (1944) and Brouwer (2001), who deduced from the great depression the destructive effects of destabilising international speculation. The final cause was found to be a weakness in institution framework, and also a weakness in domestic governance structures and corporate governances.

Eichengreen et al (2001) carried out a study, estimating the output losses due to crises on a sample of 21 middle and high income countries over the last 120 years. The study also covered a large sample of emerging markets for a shorter period starting in 1973. They found that the loss from the average crises was almost 9 per cent of GDP. It was less than one per cent per year than the estimate presented by Dobson and Hufbauer (2001) for emerging markets and developing countries in the 1980s and 1990s. Caprio and Klingebel, (1996) estimate that the banking crises cost 2.4 per cent of output per year for each of their duration. Goldstein et al. estimate that the currency crisis

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[2] Mussa's (2003) treatment of the recent Argentine case.
[3] A classic example is the case of South Korea, the banks dependence on short term debt rendered them vulnerable to investor panics.

cost 3 per cent of output per year of their duration in low inflation countries and 6 per cent of output per year of their duration in high inflation countries.

The general consensus is that policies that limit financial instability by restrictive financial transactions are likely to have costs as well as benefits (see, Bakaert and Harvey 2000; Levin, Henry, 2000). It's also noted that financial liberalisation has a positive aspect which is that it facilitates financial development and has a significant effect on economic growth as evidenced by Ranciere et al. (2006) who decompose the effect of financial liberalisation into two parts: a direct effect on growth (which has a positive effect) and an indirect effect through the crises model (which has a negative effect) with the positive effect on growth outweighing the negative effect of the crisis. On the other hand liberalised financial markets can be very volatile and extreme instances of volatility can result in a financial crisis which has a drastic impact on economic prosperity (see, Demirguc-Kunt and Detragiache, 1998, 2000; Caprio and Klingebiel, 1996, Kaminsky and Reinhart, 1999). In Martin and Rey (2005), stock market liberalisation and financial frictions in asset markets interact to generate either investment boom or financial crashes. In Dell'Arricia and Marquez (2004a, 2004b) financial liberalisation leads to less screening by banks, this gives rise to boom-bust credit cycles.

As regards to the economic literature, there are a few studies (see, Guillaumont and Kpodar (2004), Loayza and Ranciere (2004) and Eggoh C. (2008), that took into consideration financial instability by analysing the relationship between financial development and economic growth. Eggoh's empirical study revealed that financial instability has a negative impact on economic growth only as a short term phenomenon and financial development affects economic growth in the short and long term, while the negative impact of financial instability remains significant only in the short term.

Bonifigliol and Mendocine, (2004) came to the conclusion that financial instability is detrimental for economic performance and the effect of a financial crisis is more dangerous in less developed and closed economies due to the poor quality of the institutions compared to the liberalised and open economies of advanced countries.Meanwhile Loayza and Ranciere (2004) found a positive

relationship in the long run between financial development and growth against a negative nexus in the short run but they point out that the variation of the financial development effect on economic growth between the long and short run is strongly bound to financial fragility, which they measured through the occurrence of the systemic banking crisis.

3. Methodology and Data

Empirical specification

In this section we discuss the empirical model used to estimate the relationship between financial instability, financial development and economic growth. In particular, we are interested in identifying the impact of financial instability on economic growth, taking into account financial development and liberalisation. To examine this relationship further, we estimate a dynamic panel model based on a balanced panel data between 1985 to 2010. In order to test this hypothesis, our econometric specification is expressed as follows:

$$finst_{it} = \alpha + \beta_0 finst_{i,t-1} + \beta_1 flib_{i,t} + \beta_2 fdev_{i,t} + \beta_3 Gr_{i,t} + \sum_k \gamma_k X_{i,ik} + \mu_i + \epsilon_{i,t} \quad (eq.\,1)$$

Where i and t denote country and time period, respectively. *FInst* is the index of financial instability , *Flib* is the capital account openness index, $Gr.$ represents growth of GDP per capita, while *Fdev* is the aggregate index of financial development. As explained above, we use a composite index of financial development, using, M2, private sector credit, and liquid liabilities, all as ratios to GDP. The key reason for building composite indexes was to avoid the problem of multi-collinearity[4] that occurs when simultaneously introducing several financial variables that are highly correlated among them. The principal component and factor analysis which are methods for data reduction are ways that can be considered when dealing with multi-collinearity, even though there is the econometric theory which suggests that many other procedures could solve the problem. For this study, we preferred using the principal components method because it provides many advantages. Apart from helping to reduce multi-collinearity, improving parsimony and improving

the measurement of indirectly observed concepts, it makes economic sense by aiding the re-conceptualisation of the meaning of the predictor in our regression model.

X is a vector of control variables that include: inflation rate, change in terms of trade, output gap, and government expenditure. The terms μ_i and $\varepsilon_{i,t}$ respectively denote a country effect capturing unobserved country characteristics and an error term. Equation (1) poses a dynamics error component model. Substantial complications are arising in the estimation of this model using OLS. In both the fixed and random settings, the lagged dependent variable is correlated with the error term, even if the disturbances are not autocorrelated. Arellano and Bond (1991) develop a generalised method of moment (GMM) estimator that solves the problems using the first difference of the equation

$$\Delta finst_{it} = \alpha + \beta_0 \Delta finst_{i,t-1} + \beta_1 \Delta flib_{i,t} + \beta_2 \Delta fdev_{i,t} + \beta_3 Gr_{i,t} + \sum_k \gamma_k \Delta X_{i,ik} + \mu_i + \epsilon_{i,t} \qquad (eq.\,2)$$

The problems of possible endogeneity bias due to interaction between the financial instability and financial liberalisation and development, autocorrelation, individual specific heteroscedasticity, and omitted variable bias are overcome by employing the system GMM-estimator (Generalised method of moment) developed by Blundell and Bond (1998), which relies on using instrumental variables. The system GMM estimator combines equations in first difference with equation in levels, using lagged internal instruments in difference equations. Estimates in the next sub section are based on a one step system estimator, with robust standard errors. The consistency of the GMM estimators depends on whether lagged values of the explanatory variables are valid instruments in the financial instability regression. We address this issue by considering two specification tests suggested by Arellano and Bond (1991) and Arellano and Bover (1995). The first is a Sargan test of over-identifying restrictions, which tests the overall validity of the instruments by analysing the sample analogy of the moment conditions used in the estimation process. Failure to reject the null hypothesis gives support to the model. The second test examines the null hypothesis that the error term $\varepsilon i,t$ is not serially correlated. As in the case of the Sargan test, the model specification is

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supported when the null hypothesis is not rejected. In the system specification we test whether the differenced error term (that is, the residual of the regression in differences) is second-order serially correlated. First-order serial correlation of the differenced error term is expected even if the original error term (in levels) is uncorrelated, unless the latter follows a random walk. Second-order serial correlation of the differenced residual indicates that the original error term is serially correlated and follows a moving average process at least of order one. This would reject the appropriateness of the proposed instruments (and would call for higher-order lags to be used as instruments).

The Data Description

Our sample consists of the annual observation of 41 African countries selected on the basis of data availability during the period 1985-2010. The source of the data is primarily from the Africa Development indicator (World Bank,2010), and Chinn and Ito (2002).We would describe the various indexes used in the empirical analysis as the financial instability and financial development indexes, both built using the factoring analysis.

Index of financial instability

Recent studies, Gracia Herrero et al. (2003) and Cihak (2007) have used as a dummy the banking crises as a proxy of financial instability but there are problems in using this as an indicator because it is to accurately difficult identify the exact timing of a crises as indicated by Caprio and Klingebiel, (1996). Crises are taken into consideration only when they are severe enough to trigger market events but when they are successfully contained by prompt and corrective policies they are neglected, by only taking the banking crises into account, instability in other parts of the financial system is neglected.

To overcome these problems, authors such as Guillaumout and Kpodar (2004) and Loayza and Ranciere, (2004) constucted an indicator of financial instability by measuring of financial development, which is the standard deviation residual for each seven year period issued from the estimate of the financial development indicator trend over the period of study, which means that the

index of financial instability is calculated from the standard deviation of the residual of the financial development variable regressed on its delayed valued and a trend. Loayza and Ranciere, (2004) calculated as the standard deviation from financial development growth, whereas Eggoh Jude, (2008), measured financial instability through a cyclical component of the financial development index.

In this paper we follow the method proposed by Jeroen Klomp and Jakob de Haan, (2009) to construct a continous financial instability indicatore by applying factoring analysis on a number of financial stability indicators. The principal reason of building a composite index was to avoid the problem of multi-collinearity[5] that occurs when introducing simultaneously several financial instability variables that are highly correlated among them. The principal component analysis method involves a mathematical procedure that transforms a number of correlated variables into a small number of uncorrelated variables called principal components. The first principal component accounts for as much of the variability in the data as possible and each succeeding component accounts for as much of the remaining variability as possible. That is, the method generates those linear combinations of object measure (called eigenvectors), which express the great statistical variances over the entire object under consideration. This is particularly useful when they are hiding between different object measures.

Our data consists of commonly used financial instability indicators that are composites of variables taken from the banking system's balance sheet such as domestic credit provided by bank, credit provided to private sector, and liabilities liquidity (see Beck et al. 2006). Risk and return indicators such as real interest rate and interest rate spread are included to show if financial risk rises or decreases, thus possibly distressing the stability of the financial sector. Monetary authority indicators take into account variables such as money and quasi money (M2) as percent of GDP because huge changes in the supply of money may indicate the existence of problems (see Table 1).

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[5] Multi-collinearity refers to a situation in which two or more explanatory variables in a multiple regression model are highly correlated

The first principal component of the three variables accounts for 83% of their overall variance and, as expected, is highly correlated with each individual measure included. Specifically, the correlation between the first principal component and a change in the domestic credit provided by the banks is 0.90, the correlation between the change in credit to the private sector is 0.83, and the change in liquid liabilities is 0.77, and its correlation M2 is 0.67 (See Table 1). Figure 1 shows the scree plot of the eigenvalues that indicate the numbers of components that have to represent financial instability and according to the so-called Kaiser criterion, the component with the eigenvalues above one should be selected. In our case, the test suggested the selection of three components. In addition the first principal component was then used to derive weight (scores) for the financial instability index.

Index of financial instability = (Change in domestic credit by banks*0.52) + (Change in credit to private sector*0.50) + (Change in Liquid Liabilities* 0.49) + (Change in money and quasi money (M2) as % GDP*0.46) + (0.17* Change in real interest rate) + (Change in interest rate spread*0.10).

Where the financial instability index is the value of the aggregate financial instability measure and the score coefficient has been regarded as weights, the source of the various variables is World Development indicators (2010). For ease of analysis, in Table 2, we classified the countries in the sample into three categories depending on whether they have a high, a moderate, or a low financial instability index. More specifically, the classification depends on the range of periods from 1985-1990, 1991-2000, and 2001-2010. The first point to be made from this table is that for most countries in the sample, the instability pattern has changed significantly over time. For example, over the period 1985-1990, Nigeria had a low financial instability index, and from 1991-2000 it moved to a moderate instability. However, over the period 2001-2010 it had a low financial instability index. The second point to be made is that most countries in Africa are classified as highly or moderately unstable, meaning that the financial sector in these countries is very volatile.

Index of financial liberalisation

For the financial liberalisation index, we employed the index for capital account openness that was developed by Chinn and Ito (2007) and updated in 2010. They used the data reported in the Annual Report on Exchange Arrangements and Exchange Restrictions published by the IMF (2010) on the existence of multiple exchange rates, restrictions on current and capital accounts (where the latter is measured as the proportion of last five years without control) and the requirements to surrender export proceeds in order to capture the intensity of control on capital account transactions. Their index of openness is the first standardised principal component of these variables, and in practice it ranges from -2.0 in the case of the most control to 2.5 in the case of the most liberalisation. This data is available for 108 countries from 1970 to 2010.

Index of financial development

The aggregate financial development index was constructed using the principal component analysis from the main financial development indicators, which in Africa is the banking system: namely, liquid liabilities as a per cent of GDP, M2 as a per cent of GDP and domestic private credit to the banking sector as a per cent of GDP (See Enowbi and Mlambo, 2010). We expect these financial development variables to be positive and significantly correlated with the index of financial development while they are all positively correlated with the index of financial instability.

Following the suggestions of Demirguc-Kunt and Detragiache (1998), macroeconomic control variables are included such as inflation, a change in the term of trade and government expenditure. These could account for adverse and external shocks that affect the economy and which can increase the instability of the financial system, for example, by affecting the solvency of borrowers, by increasing uncertainty, or by unexpected and excessive exposure to foreign risk (Goldstein et al.2000). We also include GDP per capita and the growth of GDP per capital to control whether the detrimental effect of financial instability is channelled through the instability of economic prosperity. Table 3 presents descriptive statistics of the variables below.

3. Empirical Results

Table 4 reports the estimation results of the effect of financial instability on economic growth, financial developement and liberalisation. Column 1 provides an estimate of the impact of financial instability on economic growth, taking into account the effect of financial liberalisation. Findings suggest that financial instability has a postive affect on financial liberalisation meaning that liberalisation process tends to increase financial instablility. whereas it has an inverse effect on economic growth, confirming the results of Demrguc-Kunt and Detragiach (1998).

Column 2 takes into account financial development and the results show that its association with financial instability is positive and significant while the effect on economic growth is negative and significant. It is interesting to see that the marginal effect of financial development on financial instability is more pronounced (a positive sign) than that of financial liberalisation.

When the two variables (financial development and liberalisation) are both included in the estimation, (see column 3), the results concerning the effects of economic growth on financial liberalsiation and development on financial instability does not change dramatically. Financial development and liberalsiation has a favourable impact on financial instability with the effects of financial liberalisation greater than the effect of fianncial development while economic growth has an opposite effect. These results suggest how instability is intrinsically linked to the financial sector. It is noted that the positive link between financial instability and financial liberalisation and development tends to affect the nexus between finance and growth by damaging economic growth. The development and efficiency of the financial sector is riddled with continous financial instability which leads to lack of confidence in investors.

With regard to the other explanatory variables, the output gap has the right sign, and is positive and significant in all the columns. The real income per capita, government size and inflation has mixed results and the terms of trade shock has the opposite sign but is not statistically significant.

In Table 5 we split the sample into two, and we considered the years in which the countries were financially liberalised and the years in which they were not. In the year of liberalisations, the

impact of economic growth and financial development on financial instability is less than is the case in the year in which the financial sector was not liberalise. This suggests that financial liberalisation reduces the negative effect of financial instability on economic growth and has a positive to with financial development.

For each regression, we tested the specification of the equation with the Sagan test for instrument validity, and then we tested it with the serial correlation test for second order serial correlation. The test results suggest that our instruments are valid, and there exists no evidence of second serial correlation in our estimation.

4. Conclusion and Policy Implication

This paper investigates the effect of financial instablility on economic growth, financial development and liberalisation in African countries during the period 1985 to 2010, using the dynamic panel method. We document our findings as follows: firstly, we found that financial instability has an adverse effect on economic growth in African countries. Secondly, we found that financial development and financial liberalisation typically leads to financial instability, and thirdly, we found that the effect of financial instability on financial development and economic growth is less evident in the post financial liberalisation period.

This study demontrate how financial liberalisation and development are fundamental to financial stability. Therefore, there is a danger that in trying to aviod financial instability, the intervention by African countries policymakers can create rigidity or financial repression policies rather than realising a more stable financial system which could be achieved by:

Financial rules and regulations being designed to widen the space for the growth and stability of oriented marcoeconomic policies. At the same time it should be kept in mind that regulations can also be problematic not only because they can themselves be the source of instability and can have adverse effects on financial intermediation and development. These aspects of regulation should be taken into account when designing prudential and capital account regimes. It should take into account the particularlity of each country, no one-size-fits all solution should be adopted.

Institutions may need to be strengthened or created before new policies and regulatory measures are introduced .

In order to improve the situation there should be coordination among the various public authorities responsible for monetary policy, regulation and supervision of the financial system. Some of these responsibilities may come under the same authority, this is particularly true for the monetary policy. Financial regulation and supervision should come under the authority of the Central Bank, given their task of attaining stability in the financial system.

In addition, the African governments efforts should be directed in creating an economic environment which establishs a stable marcoeconomic environment with sound monetary polices and fiscal discipline and a peaceful political environment. They should also provide adequate institutions that respect property rights, and law and order and generate adequate human capital which can create a relationship between marco stability and growth that reduces uncertainty, strengthens credibility and improves the overall macroeconomic environment, thus boosting direct foreign investment , domestic investment , and accelerating the process of economic growth and thereby reducing poverty .

References

Akerlof, G. (1970) "The Market for Lemon: Quality Uncertainty and the Market Mechanism". Quarterly Journal of Economics, Vol. 84, pp. 488-500

Arellano, M., & Bond, S., (1991). "Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations", *The Review of Economic Studies*, 58, pp. 277-297.

Arellano, M., & Bover, O., (1995). "Another look at the instrumental variable estimation of error-components models", *Journal of Econometrics*, 68, pp.29-52.

Aryeetey, E.(1994), "The global Financial crisis and domestic resources mobilisation in Africa" Working Paper No. 101, African Development Bank,Tunis.

Baltagi B., P.Demitriade and S.H. Law (2007) " Financial Development, Openness and Institutions: Evidence from Panel Data", Paper presented at the conference on new perspectives on financial globalisation of the IMF, April 26-27, 2007.

Beck, T., A. Demirguc-Kunt and R.Levine (2003), "Law, Endowment and Finance", *Journal of Financial Economics*, 70: 137-81.

Bekaert, G.,C. Harvey and C.Lundbald, (2005), 'Growth Volatility and Financial Liberalisation', *Journal of international Money and Finance*, 24, 370-403.

Blundell,R and Bond,S. (1998) " Initial Condition and Moment Restriction in Dynamic Panel Data Models", *Journal of Econometrics*, Vol.87,pp. 115-143.

Bonfiglioli, A. and Mendicino,2004 "Financial Liberalisation, Banking Crises and Growth: Assessing the links", SSE/EFI Working Paper No 567

Caprio G.Jr and D. Klingebiel (1996), 'Banking Insolvency; Bad Luck, Bad Policy or Bad Banking' Presented at the Annual World Bank Conference on Development Economics.

Chinn, M.D., & Ito, H., (2002). "Capital Account Liberalization, Institutions, and Financial Development: Cross Country Evidence", *NBER Working Paper, No. 8967*, Cambridge, MA: National Bureau of Economic Research.

Daniel, B.C. and J.B. Jones (2007), "Financial Liberalization and Banking Crises in Emerging Economies", Journal of international Economics, 72(1), 202-221.

Demirguc-Kunt, A. and E.Detragiache (2001), "Financial Liberalisation and Financial fragility', in Caprio, P.Honahan and J.E. Stigilitz (eds), Financial Liberalisation: How Far, How Fast? Cambridge University Press.

Demirguc-Kunt, A. and R. Levine (1996), "Stock Markets, Corporate Finance and Economic Growth: An Overview", the *World Bank Economic Review*, 10(2): 223-40.

Demirguc-Kunt, A. and R. Levine (1999), " Bank Based and Market Based Financial System: cross-country comparisons", the World Bank Policy Research Working Paper No. 2143.

Desai, Mihir, C. Fritz Foley and James R. Hines Jr. (2006), Capital Controls, Liberalisations and Foreign Direct Investment, *Review of Financial Studies*, 19(4), 1433-1464.

Diaz-Alejandro, C. (1985) "Goodbye Financial Repression Hello Financial Crash," *Journal of Development Economic*s, 19:1-24.

Dobson, W. and Huffbauer (2001). World Capital Markets: Challenge to the G10. Institute for international Economics: Washington.

Edison, Hali J., Michael W. Klein, Luca Ricci and Torsten Sloek, 2002 "Capital account liberalization and Economic Performance: survey and synthesis", *Journal of international Money and Finance* 21, 749-776

Edwards, Sebastian, 2001, "Capital Mobility and Economic Performance: Are Emerging Economies Different?"NBER wp 8076.

Eggoh C. (2008) "Financial Development , Financial Instability and Growth: A Reappraisal" Law, Economics and Management Faculty, University of Orleans.

Eichengreen , Barry and Michael Mussa (1998), 'Capital Account Liberalisation and IMF'. Financial and Development 35, IMF.

Eichengreen, B and C. Arteta (2002), 'Banking Crises in Emerging Market: Presumption and Evidence'. In: M. I. Blejer and M. Skreb (eds), Financial Policies in Emerging Markets. Cambridge, Mass.:MIT Press.

Eichengreen, B. and C, Arteta (2002), "Banking Crises in Emerging Market: Presumptions and Evidence".In: M.I. Blejer and M.Skreb (eds) Financial policies in emerging markets Cambridge, Mass.: MIT Press.

Eichengreen, Barry (2001), 'Capital Account Liberalisation: What Do the Cross Country Studies Tell us?' University of California, Berkeley Mimeo.

Eichengreen, Barry and David Leblang (2003), 'Capital account liberalisation and Growth; Was Mr. Mahathir Right?' International Journal of Finance and Economics, 8:205-204.

Ekpenyong, D.E. (1994), "Financial distress banks: nature and implication," The Nigerian Banker, The Chartered Institute of Banker of Nigeria, Lagos, April-June.

Enowbi-Batuo, M., & Kupukile, M., (2010). "How can economic and political liberalization improve financial development in African countries? *Journal of Financial Economic Policy*, 2, (1), pp. 35 –59.

Fry, M., (1997), "In Favour of Financial Liberalisation," The Economic Journal, 107(442), 754-770.

G. K. Helleiner (1998). Capital Account Regime and Developing Countries (London: Macmillian Press).

Gallegati, M. At al. (2003) "Complex Dynamc and Financial Fragility in an Agent based model". Advance in Complex Systems. Vol. 6, No.3

Gibson, H.D. and Tsakalatos, E. (1994) The Scope and Limits of Financial Liberalisation in Developing Countries: A Critical Suvery, Journal of Development Studies, vol.30, no.3, April, pp.578-628.

Goldsmith, R. (1969). Financial Structure and Development, New Haven, CT: Yale University Press.

Goldstein, M. et al. (2000). Assessing financial Vulnerability: An Early Warming System for emerging Markets. Institute for international Economics, Washington.

Gracia Herrero et al. (2003). Financial stability and the design of monetary policy. Banco de Espana Working Paper 0315.

Greenwald, B., and Stiglitz, J.E. (1988) "Information, Finance Constraints and Business Fluctuations", in Kahn, M., and Tsiang, S. C. (eds) Oxford University Press, Oxford.

Guillaumont P., Guillaumont Jeanneney S. And J.F Brun (1999) "How Instability Lowers African Growth" Journal of African Economies. Vol.8.no 1, p.87-107.

Guillaumont, S. and Kpodar, R. (2004)." Financial Development, Financial instability and Poverty" Working Paper No. 2004-13, CERDI.

Hellmann, T.F., K.C. Murdock, and J.E.Stiglitz (2000), "Liberalisation, Moral Hazards in Banking and Prudential Regulation: Are Capital Requirements Enough? American Economic Review, 90(1), 147-165.

Henry P., (2000) "Stock Market liberalisation, economic reform and emerging market equity prices". Journal of Finance 55, 529-564.

Jolliffe, I. T., (2002). *Principal Component Analysis* (2nd Ed.), New York: Springer.

Kaminsky, G and Reinhart, 1999 "The Twin Crises: Causes of Banking and Balance-of-Payment Problems", American Economic Review, 89(3) 473-500.

Kaminsky, G. and Schmukler S. 2002 "Short- Run Pain, Long Run Gain: The Effect of Financial liberalisation", Mimeo.

Kaminsky, G. and Sergio S., 2002 "Short- Run Pain, Long-Run Gain: The Effect of Financial Liberalisation", Mimeo

Kasekende, L. and Atingi Ego, M. (1999), "Impact of liberalisation on the key markets in Sub Saharan Africa, the case of Uganda," Journal of International Development, Vol.11 pp.411-35

Keynes J.M. (1973) "the ex ante Theory of the Rate of Interest" The Economic Journal. December, and The General Theory and After, Part II Defence and Development, Macmillan for the Royal Society, p.215-223.

Klomp, J. and Haan J. (2009) "Central Bank Independence and Financial Instability" Journal of Financial Stability.

Kose,A., Prasad E. and M.Terrones (2007)" How Does Financial Globalisation Affect Risk Sharing? Patterns and Channels" IMF working papers 07-238.

Laeven, L. and F. Valencia (2008), 'System Banking Crises: A New Database' IMF Working Paper No. 224, International Monetary Fund.

Levine R. (2001) "International Financial Liberalisation and Economic Growth" Review of International Economics, 9, 688-702.

Levine, R., Loayza N. and Thorsten B. 2000 " Financial intermediation and Growth: Causality and Causes". Journal of Monetary Economics 46, 31-77.

Loayza R.and Ranciere (2002) " Financial Development, Financial Instability and Growth" CESifo Working Paper No. 684.

Martin P. and Rey H., 2002 " Financial Globalisation and Emerging Markets: With or Without Cash?" NBER Working Papers 9288.

Mckinnon, R.I. (1973), Money and Capital in Economic Development, Brooking Institution, Washington, DC.

Minsky, H. (1982) . The Financial Instability Hypothesis: capitalist processes and the behaviour of the economy,in Kindleberger, Ch.and Jean-Pierre Laffargue(ed)

Minsky, H. (1992). The Financial Instability Hypothesis, The Jerome Levy Economics Institute of College, Working Paper, No.74 .

Mishkin, F.(2003). " Financial Policies and the Prevention of Financial Crisies in Emerging Market Countries," in Martin Feldstein,ed., Economic and Financial Crises in Emerging Market Countries (University of Chicago Press: Chicago):93-130.

Murinde, V. (2010), Bank regulation in Africa: From Basel I to Basel II and now at a cross roads, AERC Seminar, April 2010

Naude, W (1995) Financial Liberalisation and Interest Rate Risk Management in Sub- Saharan Africa, CSAE Working Paper No.12, Oxford: Centre for the Study of African Economies.

Oshikoya, T.W. (1992) Interest Rate Liberalisation, Saving, Investment and Growth: the Case of Kenya, Saving and Development, vol.16.no.3, pp.305-320.

Rajan R. and Zingale L. (2003) " The Great Reversals: the politics of financial Development in the 20th Century" Journal of Financial Economics, Vol.69, p.5-50.

Rajan, R.G. and Zingales,L. (2003) "The great reversals: the politics of financial development in the twentieth century", Journal of Financial Economies, Vol.69, pp. 5-50
.

Reinhart, C.M., and Tokatlidis, I. (2003) Financial Liberalisation: The African Experience, Journal of African Economies, vol.12, AERC supplement 2, pp.53-88.

Rogoff, K. (1999) . "International institutions for Reducing Global Financial Instability" Journal of Economic Perspectives, Vol.13, No. 4, pp. 21-42

Schumpeter, J.A. (1912/1934), The theory of Economic development, Harvard University Press, Cambridge, MA.

Seck, D. and El Nil, Y.H. (1993) Financial Liberalisation in Africa, World Development, vol.21, no.11, pp.1867-1881.

Shaw, E.S.(1973), Financial Deepening in Economic Development, Oxford University Press, New York, NY.

Stiglitz, J. And Weiss, A. (1981) . " Credit Rationing in Market with Imperfect Information", American Economic Review, Vol.71, pp. 393-410.

Tornell, A., Westermann, F., and Martinez, L., (2004). "The Positive Link between Financial Liberalization, Growth and Crisis". NBER Working paper 10293.

Williamson, J. and M. Mahar (1998), ' A Survey of Financial Liberalisation,' Essay in International Finance No.211. New Jersey: Princeton University Printing Services.
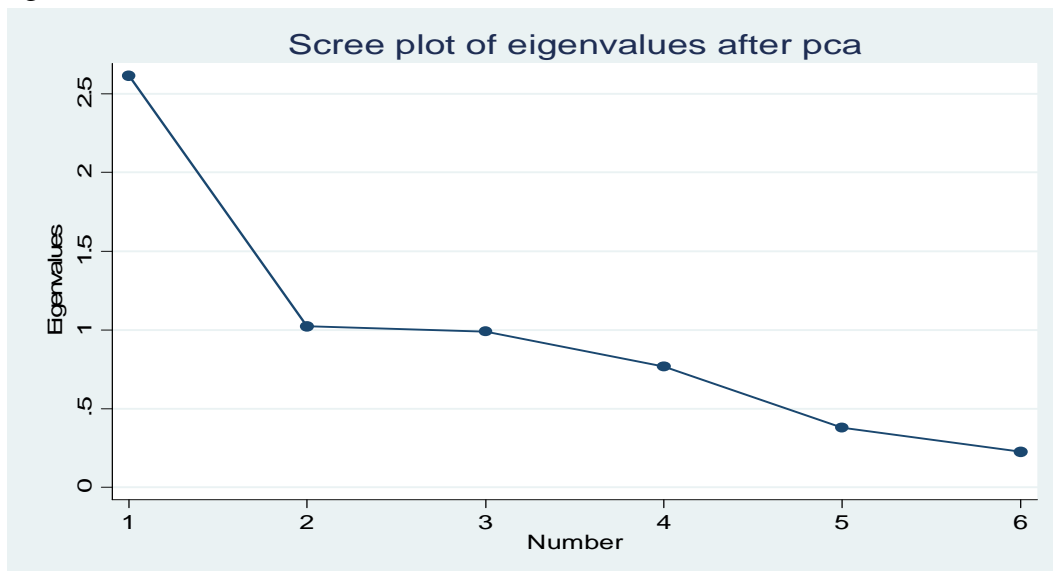
World Bank (2010) World Development indicator, World Bank, Washington, DC.

Table1: Principal Component Analysis of Financial Instability Indicator

Variables	Comp loading (1)	Variance explained (2)	Correlations (3)
Change in domestic credit by banks	0.52	0.43	0.90
Change in credit to the private sector	0.50	0..27	0.83
Change in Liquid Liabilities	0.49	0.13	0.77
Change money and quasi money (M2) as % GDP	0.46	0.06	0.67
Change real interest rate	0.17	0.05	0.27
Change in interest rate spread	0.15	0.04	0.30

Column (1) shows the component loading weight individual, column (2) shows the variance explained by the component model of the individual indicators, column (3) shows the correlation between the individual indicator and the component model.

Figure 1: Scree Plot

Note: The graph shows the variance explained by the various factors

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Table 2: Summary Statistics

Variable	Obs.	Mean	SD	Min.	Max.
Index Fin. Instability	667	-2.58	0.99	-7.03	11.72
Index Fin. Development	1010	5.25	1.11	1.56	8.23
Growth of GDP per Capita	1150	0.008	0.06	-0.69	0.65
Log. GDP per Capita.	1197	6.21	1.07	4.05	9.06
Change in Terms of trade	1150	-0.55	9.99	-107.3	42.9
Inflation rate	1078	4.7	0.35	4.4	10.1
Government Size	1131	2.6	0.4	0.7	3.8
Output Gap	1197	-0.67	9.2	-139.5	33.8
Capital Account Openness	1110	-0.67	1.08	-1.8	2.4
Domestic credit to the private sector.	1167	19.9	21.4	0	161.9
Liquid Liabilities	1057	3.3	0.65	-0.18	6.6
Credit to the Private Sector	1131	2.6	0.89	-0.38	5.08
Money and quasi Money	1150	3.2	0.63	-0.77	4.7
Real interest rate	873	9.22	31.98	-96.8	605.43
Interest rate spread	860	20.3	43.6	0.53	261.23
Change in domestic credit given by banks	1116	-0.07	15.25	-123.9	319.53
Change in credit to the private sector	1117	0.25	6.9	-80.9	102.5
Change in Liquid Liabilities	1009	0.241	19.15	-300.50	248.19
Change in money and quasi money (M2) as % GDP	1113	0.58	4.8	-68.95	64.9
Change in real interest rate	824	1.09	18.15	-126.7	298.6
Change in interest rate spread	778	0.66	11.9	-104.3	164.3

Table 3: Financial instability

Country Classification	1985-1990	1991-2000	2001-2010
High instability	Cameroon, Burkina Faso, Ethiopia, Liberia, Malawi, Mauritius, Rwanda, South Africa, Kenya, Morocco, Burkina Faso , Burundi, Comoros, Mauritius, Malawi, Tanzania, Liberia, and Cape Verde	Uganda , Ethiopia , Zambia, Cape Verde , Namibia, South Africa, Mozambique, Gambia Mauritius, Seychelles, Sierra Leone, Rwanda , Guinean, Egypt, Comoros, Malawi, Senegal, and Zimbabwe	Mozambique, Tanzania, South Africa, Botswana, Cape Verde, Gambia, Guinea, Mauritius, Zimbabwe, Kenya, Egypt, Comoros, Ethiopia, Central Africa, Botswana, Namibia ,Tanzania, Gambia, Liberia, and Cape Verde
Moderate instability	Senegal, Mauritania, Ghana, Mali, Niger, Gabon, Kenya, Cote d'ivoire, Congo, Rep. Burundi. Egypt, Benin, Morocco, Botswana, Togo, Chad, Sierra Leone and Guinea Bissau, Lesotho, Seychelles, Central Africa,	Rwanda, Central African Republic, Kenya , Togo, Benin, Chad, Niger, Algeria, Malawi, Lesotho, Burkina Faso, Mali, Botswana, Tunisia, Gabon , Nigeria , Tanzania, Kenya,	Malawi, Comoros, Ethiopia, Central Africa Republic, Mauritius, Lesotho, Gabon, Cameroon, Nigeria, Algeria, Madagascar, Sierra Leone, Congo Rep. , Djibouti , Gabon, Chad, Madagascar, Rwanda, and Malawi.
Low instability	Tunisia, Gambia, Nigeria, Uganda, Zimbabwe	Cameroon, Togo, Congo Rep, Algeria, Liberia, Guinea Bissau, and Mauritania	Libya, Seychelles, Zambia, Chad, Nigeria, Congo Rep.

*A country is classified as high instability if it has an index great than 0. It is classified as moderate instability if it has an index less than 0. Countries with the index less than or equal to -0.25 are classified as low instability.

Table:4:

The effect of financial instability on financial liberalisation, financial development and on the economic growth of African countries, (1985-2010) .Estimation: Dynamic panel regression, system GMM estimation:

Dependent variable: Index of financial instability.

Annual Estimations	(1.1)	(1.2)	(1.3)
Lag. Fin. Instability	-0.12 (0.43) ***	-0.27 (0.065)***	-0.11 (0.07)
Growth Real GDP Per Cap.	-2.32 (0.59)***	-2.7 (1.2) *	-2.64 (069)**
Log. Real GDP Per Cap.	0.02 (0.04)	0.58 (0.33)*	-0.077 (0.05)
Inflation rate	0.20 (0.29)	-1.01 (0.78)	-0.15 (0.09)*
Change in terms of trade	-0.04 (0.002)	-0.001 (.003)	-0.004 (0.002)
Output gap	0.02(0.014) **	0.052 (0.22)**	0.03(0.016)**
Log. Government size	-0,05 (0.16)	1.1 (0,81)	-0.20 (0.22)
Financial liberalisation	0.39 (0.15)**		0.32 (0.13)**
Financial development		1.8 (0.73)**	0.25 (0.10)**
Constant	-1.07 (1.1)	2.8 (3.8)	
Serial correlation	0.242	0.233	0.184
Sagan Test	0.971	0.973	0.967
Number of instruments	46	54	57
Number of observations	480	489	480

Notes: the dependent variable is the index of financial instability. The robust standard deviations are given in parentheses. ,**,*** indicate statistically significant at the 10%, 5% and 1% level respectively. The statistics are p-value for serial correlation test. The null hypothesis is that the errors in the first difference regression exhibit non second order serial correlation. The reported statistics are p-value of Sagan/Hansen test.

Table 5: The Effect of Financial instability on financial development and on the Economics Growth in African countries from 1985-2010, considering the financial liberalisation period and the non-financial liberalisation period.		
Annual Estimation	Fin. Liberalisation years	Non-fin. Lib. years
Lag. Fin. Instability	0.09 (0.18)	0.24 (0.49)
Growth Real GDP Per Capita.	-2.6 (0.64)***	-3.7 (1.7)**
Log. Real GDP Per Capita.	-0.02 (0.04)	0.16 (0.22)
Inflation Rate	-0.04 (0.36)*	0.28 (0.48)
Change in terms of trade	-0.003 (0.002)	0.001 (0.015)
Output gap	0.032 (0.007)**	0.01 (0.023)
Log. Government Size	0.032 (0.10)	-0.08 (0.08)
Financial Development	0.096 (0.045)**	0.26 (0.14)*
Constant	2.7 (1.7)	-1.7 (2.4)
Serial Correlation	0.5771	0.325
Sargan test	0.1986	0.620
Number of instruments	27	11
Number of Observation	242	133

Notes: the dependent variable is the index of financial instability. The robust standard deviations are given in parentheses. ,**,*** indicate statistically significant at the 10%, 5% and 1% level respectively. The statistics are p-value for serial correlation test. The null hypothesis is that the errors in the first difference regression exhibit non second order serial correlation. The reported statistics are p-value of Sagan/Hansen test.

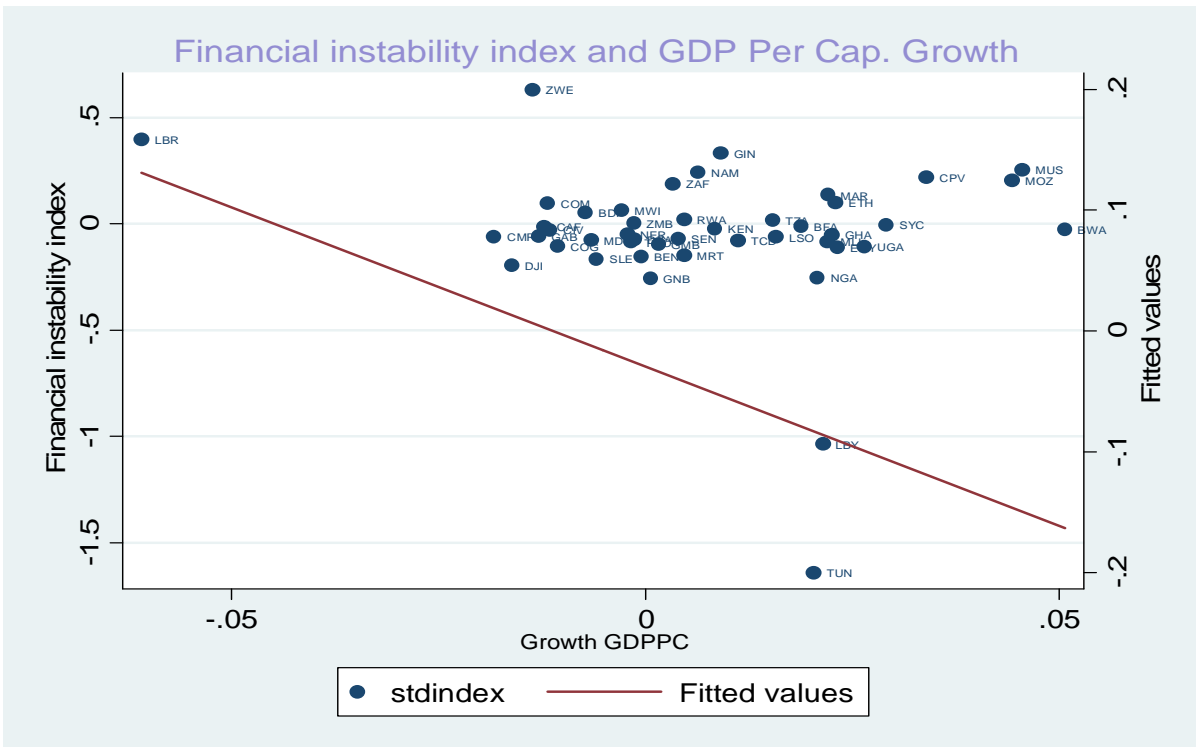| Country	Fin. Instability index	Growth GDP per Capita	Fin. Dev. index	Fin. liberalisation.
BDI	0.054	-1.0%	5.011	-1.287
BEN	-0.167	0.6%	5.311	-0.686
BFA	0.004	2.1%	4.898	-0.766
BWA	0.044	3.9%	5.144	0.591
CAF	-0.013	-1.0%	4.224	-0.938
CIV	-0.024	-0.9%	5.471	-0.938
CMR	-0.084	-1.1%	4.654	-0.938
COG	-0.110	-0.3%	4.400	-1.106
COM	0.037	-1.0%	4.879	-1.148
CPV	0.266	3.6%	6.484	-1.148
DJI	-0.108	-1.4%	6.850	
DZA	-0.071	0.4%	6.090	-1.232
EGY	-0.010	2.6%	7.144	0.370
ETH	0.103	2.5%	5.468	-1.204
GAB	-0.070	-0.8%	4.649	-0.686
GHA	-0.051	2.3%	4.532	-1.342
GIN	0.002	0.7%	3.519	-1.315
GMB	-0.010	0.4%	5.271	1.506
GNB	-0.202	-0.2%	4.627	-1.206
KEN	-0.025	0.5%	6.049	0.026
LBR	0.409	-5.2%	4.475	1.189
LBY	-1.111	2.1%	6.272	-1.204
LSO	-0.130	2.0%	5.670	-0.992
MAR	0.077	2.2%	6.873	-1.050
MDG	-0.057	-0.7%	4.885	-0.602
MLI	-0.077	1.9%	5.232	-0.686
MOZ	0.087	4.0%	5.100	-1.306
MRT	-0.224	0.4%	5.634	-1.162
MUS	0.293	4.1%	7.098	0.692
MWI	0.016	0.8%	4.527	-1.217
NAM	0.186	1.2%	6.290	-1.192
NER	-0.046	-0.4%	4.220	-0.633
NGA	-0.156	2.2%	4.880	-1.151
RWA	0.005	1.1%	4.382	-0.963
SDN		3.1%	4.044	-1.010
SEN	-0.067	0.5%	5.449	-0.686
SLE	-0.090	-0.1%	3.814	-0.999
SYC	0.293	2.6%	6.367	1.456
TCD	-0.079	1.3%	3.836	-1.022
TGO	-0.091	-0.2%	5.622	-1.148
TUN	-1.640	2.7%	6.917	-0.980
TZA	-0.009	2.0%	4.576	-1.110
UGA	-0.027	3.1%	4.045	0.651
ZAF	0.239	0.6%	7.180	
ZAR		-3.5%	2.568	-1.106
ZMB	0.007	0.2%	4.599	0.581
ZWE	0.243	-1.8%	6.252	-1.566

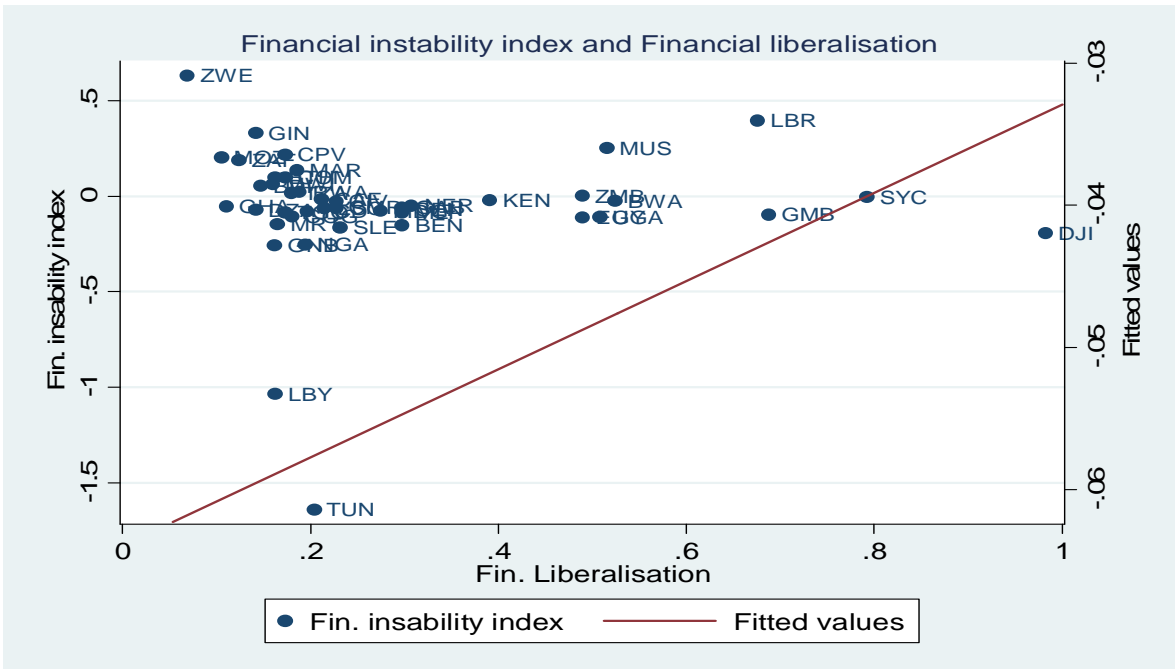Figure 2: Financial Instability Index and GDP per Capita Growth

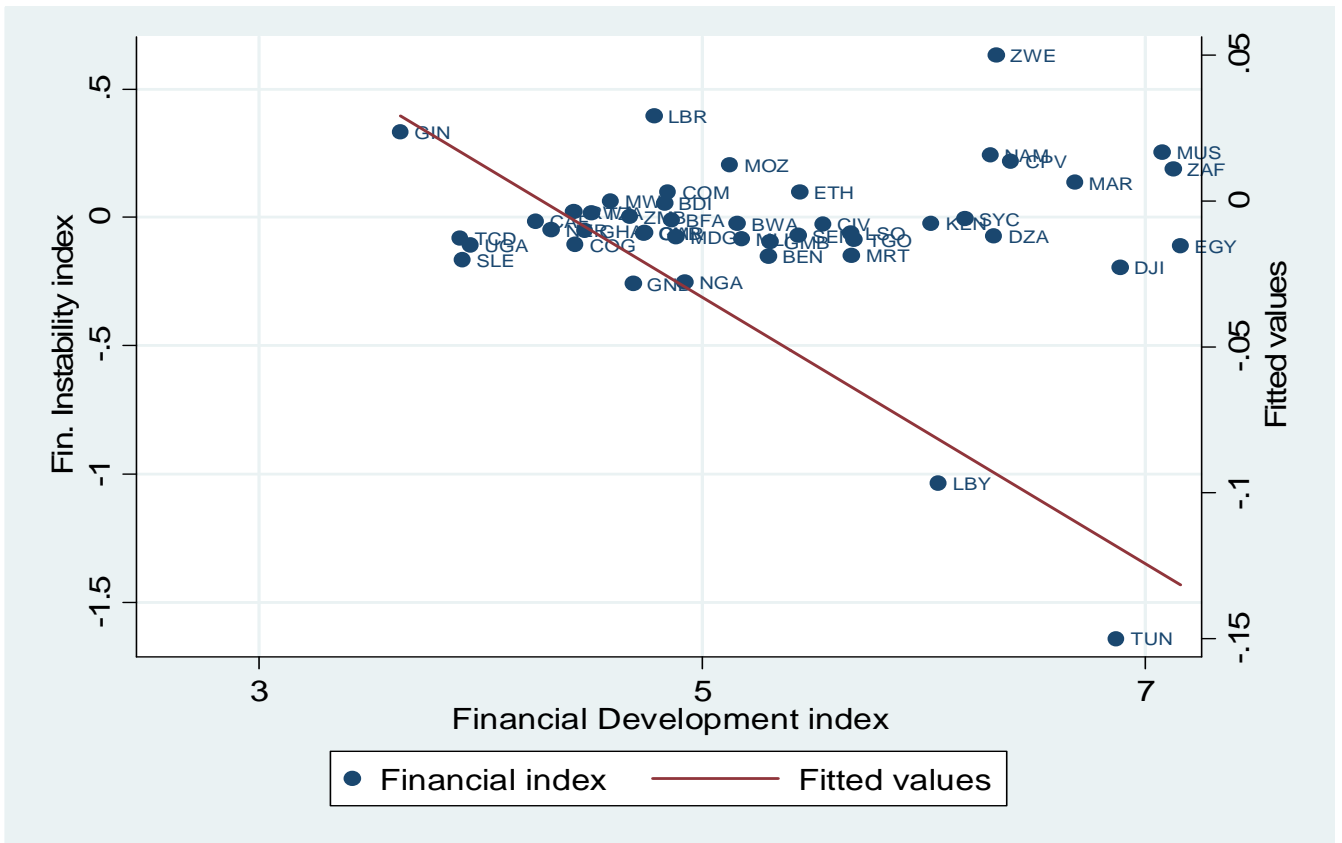Figure 3: Financial Instability Index and Financial Liberalisation

Figure 4: Financial Instability Index and Financial Development Index

Table 6: Pairwise Correlation	Fin.Instabiliy	Growth GDP per Capita	Fin.Dev.	Shock of Trade	Inflation	Gov. Size	GDP per capita	Fin.Lib.	output gap
Financial instability	1.000								
Growth GDP per Capita	-0.105***	1.000							
Financial development	0.17***	0.04	1.000						
Shock of Term of Trade	-0.013	0.05*	0.016	1.000					
Inflation	-0.005	-0.21***	-0.21***	-0.22	1.000				
Gov. Size	0.024	0.007	0.046***	0.047	-0.21***	1.000			
GDP per Capita	0.03	0.12***	0.58***	0.024	0.16***	0.39***	1.000		
Financial Liberalisation	0.078*	0.05	0.12***	-0.0128	0.11***	0.13***	0.22***	1.000	
Output Gap	-0.019	0.1	-0.039	0.043	0.013	-0.01	0.02	-0.037	1.000

Table 6: Pairwise Correlation