How Can Economic and Political Liberalisation Improve Financial Development in African Countries?

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Abstract

The objective of this paper is to study the interactions between Economic liberalisation, Political liberalisation and Financial development in African countries. More specifically, we seek to establish the impact of Economic, Political and institutional openness on financial deepening. The empirical approach will be two-step procedure, first using a difference in difference method to show the various aspect of financial liberalisation on economic and political freedom while the second step will be using panel data techniques from period 1990 to 2005. The estimation results can be summarised as the following, first, Economic and financial liberalisation did account significantly for the financial development performance. While political stability show a positive overall effect on financial development, the association with Political freedom is consistent only after controlling the endogeneity of Political freedom on financial development. This result indicates that the transformation of the political and economic environment has improved the performance of the financial sector.

Key words: *political liberalisation, economic liberalisation, financial development and Africa.*

JEL Classification*: G20; O16; O17; O55*

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1. Introduction.

Economic theory and experience suggests that financial development has a positive impact on long term economic growth (see Levine et al. 2000; Levine 2003; Bekaert et al 2001; Minier, 2003; Christopoulos and Tsionas, 2004; and Demetrides and Andrinova ,2004). The argument goes back to Schumpeter (1912) who argued that the services provided by financial intermediaries were essential were essential for innovation and development. Levine (1997) list of five functions of the financial system by which it enhances economic growth: (i) reducing risk; (ii) allocating resources; (iii) monitoring managers and exerting corporate control; (iv) mobilising savings; and (v) facilitating exchange of goods and services. The better the financial system performs these functions, the more it contribute to overall economic growth. However, while all financial systems provide these financial functions, there are large differences in how well they are provided.

In the 1970s, Shaw (1973) and Mckinnon (1973) emphasized the problem of financial repression in developing countries, arguing that in an economy in which the government directly influences the credit policy of banks and sets the ceilings on interest rates, the result is a fall in aggregate savings and investments and inefficient distribution of financial resources. They pointed out that financial repression resulted in sub-optimal macroeconomic performance and a choice for less favourable development prospects. On the other hand, financial liberalisation would raise the level of aggregate savings and foster a more efficient distribution and use of financial resources as preconditions for creating a sustainable basis for the economic growth and development.

On the advice of international financial and development agencies many African countries undertook financial liberalization as part of overall macroeconomic reforms in the 1980s and 1990s (see Aryeetey, 1994; Collier, 1990; Ekpenyong, 1994; and Oshikoya, 1994. Kasekende and Atingi-Ego, 1999; and, Reinhart et. al. 2000). Overall, while the reforms succeeded in easing financial repression, the impact on increasing growth and investment has been patchy while African financial systems remain shallow and relatively underdeveloped. Instead liberalization appeared to engender greater instability and crises, particularly in the banking sector (Dermiguc-Kunt and Detragiache, 1999).In this paper we return to these questions by examining the impact of economic and financial liberalization on financial development in Africa. In particular, we examine whether democratization can induce a country to develop or liberalise the financial sector, and whether political stability improves a country's financial sector. In addition, we examine whether economic

liberalization is significant for the development of the financial sector. The questions are not trivial, considering the fact that liberalization increases the opportunity for banks to take on greater or more risks. This has led Dermiguc-Kunt and Detragiache (1999) to conclude that in countries with weak legal and institutional frameworks, such a lack of rule of law, high levels of corruption and weak contract enforcement, financial liberalization should proceed cautiously.

The issues are more relevant given the current global financial crisis, which has directly affected the key drivers of the continent recent growth performance due to the fragility of their economies and vulnerability to external shock (Kasekende et al. 2009). This is despite the fact that most of African countries implemented significant economic reforms over the last two decade, which the crisis threatens to unravel. Examining the role of economic and political liberalisation on financial sector development will help in shaping appropriate strategies for developing the financial sector African countries.

This paper adopts a two-step procedure in which we first use a difference in difference method to show the various aspect of financial liberalisation on economic and political freedom and then use panel data techniques from period 1990 to 2005 for a sample of 50African countries to examine the effect of economic and political reform. Our results show that political liberalisation, economic liberalisation and the stability of the political system have a statistically significant effect on financial development in Africa. That is, we find reforms, stability and democratic rule to be favourable for development of the financial sector in the continent.

There are a few studies that directly explore the link between political and economic liberalisation on financial development.(See Yongfu ,2005; Olsen, 1993; Clague et al. 1996). In this paper, we restrict our focus to African countries only, concentrating on those where both political and economic reforms have taken place. Second, compared with previous papers, we consider various aspects of reform, including the political and economic environment as well as stability.

The paper proceeds as follows. Section 2 is an outline of the literature review, while in section 3, we describe the empirical application and the data used. Section 4 presents the empirical findings, and section 5, summarizes the main conclusions.

2 . Literature Review

Many reasons have been put forward to explain why some countries have less sophisticated financial system than others. These explanations can be divided into three interrelated strands of literature. According to the first group, financial institutions do not succeed in an institutional vacuum, but need a legal and regulatory environment in which contracts can be enforced and

bankers are given strong incentives to behave honestly[3].(see Kaufmann et al,1999; Demirguec-Kunt and Detragiache, 1999; Andrianova et al ,2003)

The second school examines the link between finance and law, showing that specific types of legal systems are more conducive to protecting investor rights and adapting the law to take into account financial innovation. (See La Port et al, 1997, and 1998; Beck et al, 2001) For example, by comparing different broad legal traditions, namely, civil law versus common law, La Porte et. al find that the latter provides stronger shareholder and creditor protection on which liquid capital markets depend, and have a stronger enforcement tradition.

The third strand argues that financial underdevelopment may be the outcome of political circumstances, protecting the interests of narrow political- industrial elite (See Rajan and Zingales, 2003). Such an elite may have little interest in developing a well functioning capital market, as they are well served by a relationship with the bankers. In such an environment, there is an absence of arms length finance, thus restricting the potential competitors' access to finance. The more power is held by the elite groups, the more autocratic the system, and the more obstacles to financial development. This means that political freedom, political rights and civil liberties could be crucial for financial development because they widen the suffrage in the political system, and limit the influence of an elite group's governing policy-making. Within this approach, Pagano and Volpin (2001) regard regulation and its enforcement as a result of the balance of power between social and economic constituencies. An important dynamic implication of the political economy approach is that the scope of financial intermediation should increase as a broader section of the population achieves political representation, leading to increase access to finance and more competition (Perotti and Volpin, 2007).

Further, as has been discussed by Clague et al. (1996), Olson (1993), and recently Rajan and Zingales (2003) dominant interest groups, especially incumbent firms and incumbent financial intermediaries, have strong incentives to prevent new companies from entering, potentially blocking the development of a more advanced financial market. Beck et al. (2003) applied the settler mortality hypothesis of Acemoglu (2001) to financial development and suggested that while the institutions established by extractive colonizers were likely to be detrimental to financial development, those created by the settler colonizers tended to favour financial development. When the colonisers left, the post colonial elite took over the same institution and continued enjoying extractive surpluses. Once a political system had been set up, it brought advantages to the interest

groups benefiting from the system within the political process. Hence even inefficient systems were perpetuated, suggesting there is path dependence (see Bebchuk and Roe, 1999; Zanella et al, 2003).

However, a number of these studies have reported controversial outcomes. One group of studies found that the democratic process enhances fundamental civil rights liberties, stable politics and an open society, it promotes property rights protection and contract enforcement, discourages corruption and lawlessness, and fosters economic growth (see Olsen, 1993, Clague et al. 199), Minier, 1998, and Persson, 2005). Other studies have concluded that when the different interest groups are under pressure, the democratic structures may suffer from inefficiency in decision making and a difficulty in implementing viable policies for rapid growth. Less democratic nations tend to lower their economic growth rate, even resulting in economic disorder, political instability and ethnic conflict (Blanchard and Shleifer, 2000 and Persson and Tabellini,1992). Such processes are likely to be typical in African countries. In this context, it is critical to explore furthers on the relationship between political liberalisation or political stability and economic liberalization on financial development in African countries during a period of a strong wave of democratic and economic reform changes taking place.

3 .Data.

The samples consist of yearly observations for about 50 African countries selected on the basis of data availability during the period 1990-2005. Below we discuss some of the measurement issues related to the variables used in the paper. These include the construction of the indices for financial development, political liberalisation, and economic liberalisation.

The financial development index

Measuring financial development is a very complex and complicated process because there is no clear cut definition as to what constitutes financial development. Bandiera et al (2000) argued that an ideal index of financial sector development should include various aspect of regulatory and institutional reform. However, measuring this aspect of government policy is a very difficult if not impossible task (Kelly and Mavrotas, 2003). The inclusion of all the policy variables separately in the same model also causes serious estimation problems such as, multicolinearity, among others.

We construct the aggregate index of financial development using the principal component analysis from the standard financial development indicators. In Africa these are mainly from the banking system, and they include liquid liabilities as percent of GDP, private sector credit as percent of GDP and domestic credit to banking sector as a percent of GDP. Each of the indicators above captures a different aspect of financial development and has its own strengths and weaknesses. In the case of

the banking sector development indicators, private sector credit is probably the most relevant for measuring opportunities for new firms or determining the ease with which any entrepreneur or company with a sound project can obtain finance[4]. Liquid liabilities measures the ability of banks to mobilize funds or the size of the banking system relative to the economy, but the funds are not always used to finance new entrepreneurs, so it may not be a suitable indicator of financial development in the Rajan and Zingales sense. Domestic credit comprises private credit as well as credit to the public sector, thus it is probably the least well suited to capturing the financial development index.

The principal reason for building a composite index is to avoid the problem of multi-collinearity[5] that occurs when introducing simultaneously 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 suggesting many other procedures[6] to 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-conceptualization of the meaning of the predictor in our regression model.

Using these three indicators of the banking system together, namely, liquid liabilities as percent of GDP, private sector credit as percent of GDP and domestic credit to banking sector as a percent of GDP allows us mainly to capture the size of bank based intermediation. The Financial development index is the first principal component of these three indicators and account for 77% of their variation. The weights from this procedure are 0.60 for liquid liabilities, 0.57 for private credit and 0.55 for Domestic credit. The data of the various variable were collected from the World Bank development indicator (2008) and the African Development Bank Statistics Department.

The political liberalisation.

To assess whether becoming more democratic deepens financial development or whether financial development makes a country more democratic, two indicators were used. The first one is the "combined polity score" - polity2 index, which varies from 10 (strongly democratic) to -10 (strongly autocratic), and is obtained the polity IV database (Marshall et al. 2003)[7]. The polity variable was designed to record the regime institutionalized authority characteristics. First, the

[4] Rajan and Zingales (2003)

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

[6] The procedure mentioned to solve multi-collinearity were the instrumental variables. The Centring method, Omitting the variable with the least statistical significance, etc.

[7] See polity lV project data set user's manual

dataset recorded a democracy score (ranging from 0 to 10) for each country, based on the openness of the political process, defined as the extent to which citizens can effectively express preferences about policies and leaders through elections and the degree of restraints on the power of the chief executive. Second each country has an autocracy (again ranging from 0 to -10) based on how political leaders are selected (by designation or chosen from closed lists), the constraints on their power and the regulation and competitiveness of political participation. In this study we consider political liberalisation as change from a non democratic to a democratic regime, which means that only democratization is considered rather than an improvement in the regime. A regime change is then taken to be a change from a non positive to a positive polity2 value. Countries that have improved their democratic process are assigned a 1 starting in the year they became a democracy and 0 otherwise; all other countries that have not change their process are assigned a 0.

The second indicator is that of political instability, whose application is based on the premise that financial development requires a certain level of social development, trust and reputation. The political system that is unstable results in a loss of social and human capital, uncertainty and the breakdown of long term economic relationships. Fear of confiscation due to the frequent changes leads people to hold physical assets instead of financial assets. Following the annual historical events in each country, we were able to determine if a country had political stability (assigned a 1 and a 0 for instability).

The economic liberalisation index.

To measure the quality of economic liberalisation, this paper employs the aggregate index of economic freedom of the Fraser institute (Gwarteny and Lawson 2007). This composite indicator, which draws on survey data from the Global Competitiveness Report and the International Country Risk Guide, measures the extent to which institutions in a country provides secure protection of property rights, assures fair enforcement of contracts and a stable monetary environment, allows free exchange with foreigners, and lifts restrictions on entry into occupation and business activities. It was computed for 123 countries in the base years of 1980-2005, and, by construction ranging from 0 to 10 implies the highest economic freedom index. In a recent paper De Haan, Lundstrom and Sturm (2006) compared the different measures of economic liberalisation which appeared in the literature. They argued that the economic freedom index periodically compiled by the Fraser institute has been extensively applied in empirical papers and has been proved to be the best at capturing the essence of market oriented institutions.

The other index that we took into consideration was the index of capital account openness that was develops by Chinn and Ito (2006). They used the data reported in the Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER) published by the IMF on the existence of

multiple exchange rates, restrictions on current and capital accounts (where the latter is measured as the proportion of the last five years without control) and requirement to surrender export proceeds in order to capture the intensity of controls on capital account transactions. Their index of openness is the first standardized 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 for 1970-2000.

The control variables are real openness which is export plus import divided by the GDP PPP, the GDP per capital and the growth rate of GDP, all of which are taken from the World Development Indicator 2008

4. Empirical Specification.

In this paper we used two approaches to estimate the causal effect of economic and political reform on financial development. The micro econometric approaches known as the difference in difference estimation will be first approach while the second approach is to estimate the panel regression.

4.1. Basic Treatment Effect Model

We followed the method used by Persson (2004), then after Giavazzi and Tabellini,(2005) in which they divided the sample of country into two groups. Those countries that have experience of some reforms during the period of observation were called "treated" while those that had not implemented reforms during the same period of observation were known as "controls". For this study we looked at the pre- and post treatment effect on the liberalizing countries relative to the entire group. To identify the effect of economic or political liberalization as the estimated difference to difference of the financial development between the two groups of countries, we implemented the following equation:

$$y_{it} = \alpha_i + \eta_t + \beta reform_{it} + \varepsilon_{it} \quad (1)$$

where y_{it} is the outcome of financial development of country i at time t; α_i and η_t are country and year fixed effect respectively, reform are economic and political freedom variables which are given the value of 1 in the year after the reform in the treated countries and 0 otherwise and ε_{it} is an unobserved error term. The coefficient of β measures the effect of the reform on the variable of interest y.

This method allowed us to take advantage of both the time series and the cross sectional variation in the data. It also useful, when studying the effect of economic or political liberalization to differentiate the results of the treated countries from others and also consider the pre and post reform consequences, exploiting both the within country variation as well as the comparison between countries.

Dynamic Analysis

Assessing the relationship between financial development and political or economic liberalization in our panel data set poses some econometric issues that can be described in the context of a simple dynamic equation. Consider the following equation:

$$y_{it} = \alpha y_{it-1} + \beta' \chi_{it} + \gamma' Z_{it} + \eta_i + \mu_t + \varepsilon_{it} \quad (1)$$

where y_{it} is the dependent variable financial development index , y_{it-1} is the lagged variable of the financial development index which has to capture the adjustment process of the dependent variable to the desired level, while χ_{it} represents the explanatory variable which is the political or economic liberalization variable, and Z_{it} is a vector of controlling variables which comprise real openness, the logarithm of real GDP per capita, and the growth rate of GDP. The terms η_i and μ_i respectively denote the unobserved common factor affecting all countries, and a country effect capturing unobserved country characteristics.

Using the panel data methods for the estimation allows us to control the omitted variables bias and endogeneity, which are better than in the case of the cross-section approach[8]. To solve the potential problem of endogeneity of the regressors[9], suitable instruments are needed. We relied primarily on internal instruments, along the lines described by Arellano and Bond (1991). Also, when the OLS model is applied, the estimator of α is inconsistent and likely to be biased up ward since the lagged value of y_{it-1} is positively corrected with the omitted fixed effect even if the idiosyncratic component of the error term is serially uncorrelated.

The problem of the country –specific effects, can not be solved by taking the first difference of the equation since the first difference transformation introduces correlation between the lagged dependent variable and the differenced errors:

$$y_{it} - y_{it-1} = (\alpha + 1)(y_{it} - y_{it-2}) + \beta'(x_{it} - x_{it-1}) + \gamma'(Z_{it} - Z_{it-1})(\varepsilon_{it} - \varepsilon_{it}) \quad \textbf{(2)}$$

The use of instruments is required to deal with the likely endogeneity of the explanatory variables, and the problem of constructing the new error term, $\varepsilon_{it} - \varepsilon_{i,t-1}$, which is correlated with the lagged dependent variable. Assuming that the time varying disturbance ε is not serially correlated, and the

[8] See Caselli et al (1996)

[9] See Griliches and Mairesse (1998)

explanatory variable χ is weakly exogenous (they are uncorrelated with future realization of the time varying error term), lagged values of the endogenous and exogenous variables provide valid instruments. In other words, we assume that:

$$\varepsilon\left[y_{i,t-S}\cdot\left(\varepsilon_{i,t}-\varepsilon_{i,t-1}\right)\right]=0 \quad \text{For s} \geq 2\text{; t=3… T} \qquad \textbf{(3)}$$

$$\varepsilon\left[\chi_{I,T-S}\cdot\left(\varepsilon_{I,T}-\varepsilon_{I,T=1}\right)\right]=0 \quad \text{For s} \geq 2\text{: t=3….T} \qquad \textbf{(4)}$$

We refer to the GMM estimator based on these conditions as the difference estimator. There is however, conceptual and statistical shortcoming with this difference estimator. When the explanatory variables are persistent over time, their lagged level are weak instruments for the regression equation in differences (Alonso-Borrego and Arellano, 1996; Blundell and Bond, 1998). This raises the asymptotic variance of the estimator and creates a small sample bias. To avoid these problems, below we use the estimation that combines the regression in difference and in levels (Arellano and Bover 1995, Blundell and Bond 1998).

The instrument for the regression in differences is the same as the above. The instruments for the regression in levels are the lagged differences of the corresponding variables. These are appropriate instruments under the following additional assumption. Although there may be a correlation between the level of the right hand side variable and the country-specific effect in equation (2), there is no correlation between the difference of these variables and the country specific effect. This assumption results from the following stationary property:

$$\varepsilon\left[y_{i,t+p}\cdot\eta_i\right]=\varepsilon\left[y_{i,t+q}\cdot\eta_i\right]$$

$$\varepsilon\left[X_{I,T+P}\cdot\eta_I\right]=\varepsilon\left[X_{I,T+q}\cdot\eta_i\right] \quad \text{For all p and q} \qquad \textbf{(5)}$$

The additional moment conditions are:

$$\varepsilon\left[\left(y_{i,t-S}-y_{i,t-s-1}\right)\cdot\left(\eta_i+\varepsilon_{i,t}\right)\right]=0 \quad \text{For s = 1} \qquad \textbf{(6)}$$

$$\varepsilon\left[\left(X_{I,T-S}-X_{I,T-S-1}\right)\cdot\left(\eta_I+\varepsilon_{I,T}\right)\right]=0 \quad \text{For s = 1} \qquad (7)$$

Based on the conditions in equations 3 to 7, we employ the generalized method of moment (GMM) procedure to generate consistent and efficient estimates of the parameters of interest and their asymptotic variance- covariance (Arellano and Bond, 1991; Arellano and Bover, 1995).

These are given by the following formulas:

$$\hat{\theta} = (\overline{X}' W \hat{\Omega}' \overline{X})^{-1} \overline{X}' W \hat{\Omega}^{-1} W' \overline{y}. \quad (8)$$

$$AVAR(\hat{\theta}) = (\overline{X}' W \hat{\Omega}^{-1} W' \overline{X})^{-1} \quad (9)$$

Where θ is the vector of parameters of interest (α, β), *y* is the dependent variable stacked first in differences and then in levels, *X* is the explanatory-variable matrix including the lagged dependent variable (y_{it}, χ) stacked first in differences and then in levels, *Z* is the matrix of instruments derived from the moment conditions, and Ω^ is a consistent estimate of the variance covariance matrix of the moment conditions. The consistency of the GMM estimators depends on whether lagged values of the explanatory variables are valid instruments in the growth regression. We addressed this issue by considering two specification tests suggested by Arellano and Bond (1991) and Arellano and Bover (1995). The first is a Sargan or Hensen test of over-identifying restrictions, which tests the overall validity of the instruments by analyzing 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 ε_{it} is not serially correlated. As in the case of the Sargan test, the model specification is 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. The 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 aim of using different methods of panel estimation (OLS, LSDV, SYS GMM), is because the dynamic panel data approach suffers from serial autocorrelation and a business cycle effect which are inevitably introduced when more than one observation for each economy is added (Mankiw 1995). It is, therefore, essential to discuss different methods of panel data model that we used before looking at the results. The OLS estimation of the panel data does not consider the unobserved time and country effects. As a result, the OLS estimation suffers from a positive correlation between the lagged dependent variable and the error term which affects the OLS estimation to be biased upwards and which can be inconsistent.[10] The LSDV estimation tends to be biased downward due to the fact the lagged dependent variable is negatively corrected with the error term. Generally the

[10] See Roodman, 2007

OLS and LSDV estimators can provide a bound for the turn value of the coefficient of the lagged dependent variable. Good estimates of the true parameter should therefore lie in the range between these values or at least close to it.

It is a well-known concern in the literature that some of the regressors may be potentially endogenous or predetermined in determining financial development. For example, financial development of a country might improve due to a more liberalized economic system or political system but at the same time political and economical liberalization may be enhanced by a developed financial sector. If we were to run the ordinary least squares (OLS) regression , the estimate would be biased as the error term is correlated with Xs.

To address the potential endogeneity of regressors and to incorporate fixed effects, we employ the system-GMM estimator from Blundell and Bond (1998). The Blundell-Bond estimator is arguably a superior approach to the Arellano-Bond difference-GMM as adding lagged differenced variables as instruments in the level equations may generate substantial efficiency gains when the time window is relatively short. Another advantage of the system-GMM estimation is its ability to identify the coefficients of time-invariant variables in the level equation.

5. Results.

Interaction between economic and political liberalisation on financial development.

We present the results of the treatment effect estimation between economic liberalisation, political liberalisation and financial development. Table 3a reports the outcome in which the dependent variable is the index of financial development while the explanatory variable for economic liberalisation is the aggregate index of economic freedom of the Fraser institute (Gwarteny and Lawson 2007), giving the value of 1 for those countries that were considered treated and otherwise 0. The first two columns show all the countries in the sample including the treated countries while the last two columns represent only the treated countries, that is, those countries that experienced some years of reform during the period under observations. Table 3a show a positive relationship between financial development and economic liberalisation. The effect is more consistent with treated groups than the entire sample of countries. In Columns 2 and 4 we examine whether the timing of the reforms matters. This is accomplished by considering the liberalisation process in the three years preceding the reform (3year_pre_lib), three year following the reform, (3year_post_lib) and from four year and onward from the reform. Economic liberalisation seems to produce a positive effect on financial development from the four year period onward after the liberalisation for the all the countries in the sample, while for the treated group, from the three year period onward after reform they have a positive and significant effect on financial development.

Table 3b documents the effect of political liberalisation on financial development. We find that political freedom appears to be positive and significant on financial development when considering all the countries in the sample but it is not the case for all democratic countries, in which the coefficient is positive but not significant. The results listed in columns 2 and 4 show that the timing effect is negative and significant a after four year period of political reform while for the treated group it is positive and significant after the four year period of political reform. The timing effect can be interpreted as reflecting transition from the early to a mature stage democratisation .

Table 3c shows the relationship between financial liberalisation and financial. Columns 1 and 2 show that financial openness is consistently positive and significant, suggesting that financial reform do have a long run effect on the financial system. For the timing effect, the outcome for the treated countries is positive from the three year period onward while for all the countries in the sample the are some negative effects after three years of financial openness.

When political freedom is measured by the polity2 variable (10 for strongly democratic and -10 for autocratic), column 1 in Table 3d shows that political liberalisation has a negative and an insignificant effect on financial development, while democratization undertaken five years earlier improves financial development. As can be seen in column 2, we also find the same effect when the political freedom is measured by a dummy variable (10=1 for strongly democratic and -10=0 for autocratic). On the other hand, the effect of economic liberalisation on financial development is positive and significant effect. The effect of earlier five years of economic reform is also positive though not significant.

Dynamic panel results.

In table 4b, we present the results for the full sample of African countries obtained by OLS LSDV, and SYS-GMM estimation methods. The first three columns show the baseline specification (OLS) in which both political liberalisation variables, (dummy polity2 and polity2) are positive but not significant. The political stability dummy (following the political and social events of each country reported by polity IV dataset), however, has a strong positive and significant effect on financial development.

In column 4 to 6 we present the estimates obtained using the less square dummy variables (LSDV) approach, which relies on the variability of data within-country. In this context, the influence of various independent variables has to be understood to be taking place over time within a country, rather than across countries. The use of an LSDV estimator allows us to wipe out all time-invariant country-specific characteristics that are likely to affect the financial development patterns. Moreover, the use of the LSDV estimator overcomes the possible problems in data comparability

across countries. The result shows that the effect of political freedom on financial development is positive but not significant while political stability is positive and significant at a 5% level.

We have to remember that in AR(1) models, the OLS level estimate of the autoregressive parameter is biased upward in the presence of a fixed effect, and the LSDV estimate is biased downward in a short panel. A consistent estimate of the autoregressive parameter can be expected to lie in between the OLS levels and LSDV estimates. It is a simple indication of the presence of serious finite sample biases when particular estimates fail to fall within this interval or are very close to the bound.

In columns 7 to 9, the SYS-GMM estimate provides strong evidence that the improvement of political freedom is associated with financial developments, all the variables of political liberalisation and political stability are positive and significant and the diagnostic tests, including first order and second order serial correlation tests, the Sargan test and the different Sargan tests are supportive. In general, the coefficient of log GDP per capita has a positive sign, real trade openness has a positive sign almost in all the estimations except with the SYS-GMM model where it has a negative sign in all the estimates (see column 7 to 9, table 4b) .

Table 4b looks at the effect of economic liberalisation on financial development in African countries. It appears that the effect of economic reform on financial development was strongly significant during this period (1990-2005), contributing to the improvement of financial development. It is positive in the entire methods (OLS, LSDV and SYS-GMM) but evidence is clearer in the SYS-GMM model (column 5 and 6), where we find that the two variable representing economic liberalisation (the index of economic freedom of the Fraser institute and the index of capital account openness) having both positive and highly significant effects on the speed of financial development. In general, we find that log of GDP per capita and real trade openness have a positive sign and in some cases is significant while the growth rate of GDP is always negative and significant.

The lagged level of the financial development index as an explanatory variable is included in all the regressions. The coefficient is a highly significant explanatory variable in all of the outlier robust regression. The positive coefficient indicates that the lagged level is picking up the unobserved country effect, which raises both present and past financial development. While the signs and coefficients of economic liberalisation variables are mostly relatively robust, the significance level tends to decline. An explanation for the decline in significance levels is the correlation between the level of financial development and economic liberalisation. Multicolinearity would tend to increase the standard errors of the coefficient and hence decrease the reported significance levels. In sum,

the main finding in this study is in accordance with the literature[11], showing that improving the democratic process and economic liberalisation reform leads to a greater financial development sector.

6. Conclusions.

The purpose of this paper has been to explain the effect of political and economic liberalisation on financial development in Africa using a panel of 50 African countries, over the period spanning 1990-2005. The effect of economic and political liberalisation on financial development is first examined using the difference-in difference approach. Finding that both financial and economic liberalisation improve financial development, while the association between political freedom and financial development is not consistent. Even when considering the effect of timing, it shows that after three year onward of economic liberalisation, the outcome is positive for the performance of the financial sector.

Furthermore using the panel data techniques, including LSDV and SYS-GMM estimators, the paper points out a number of issues. First, there is a positive relationship between political freedom and financial development in Africa, but the evidence seems quantitatively stronger for political stability than political freedom. Second, the relationship between economic liberalisation and financial development is significantly positive, and the effect is expected to persist over a long period. What political and economic liberalisation has appeared to deliver in the continent is greater access to the international capital market, dynamic change within the financial system in most countries. It is, however, yet to transform the institutional setting for resource mobilisation sufficient to produce dynamic indigenous growth.

In summing up, economic reform is a necessary condition for democratic development because it is an instrument capable of delivering the desired transformation for an economy. It opens up the market and unleashes popular participation in society, and can easily facilitate the convergence of free society and healthy financial system.

The study therefore recommends two suggestions to enhance financial deepening through the liberalisation process as a means of resource mobilization for the private sector. First, taking advantage of financial openness to diversify the financial instruments being offered in the financial market and channelling it to the private sector in these economies in order to increase competitivesse will enhance innovation, hence increase efficiency. Second the reform policies, mostly implemented under structure adjustment programs could work in a similar way as structural

[11] See Olsen (1993) ;Clague et al. (1996); Huang and Temple (2005) ; F. Giavazzi and G.Tabellini (2005); F.Carmignani (2008);

reforms which can encourage the private sector so as to boost corporate governance, improve investment climate and reduce corruption.

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Table 1: Summary Statistics

Variable	obs	Mean	Std.dev	Min	Max
GDP growth	718	.034	.078	-.968	.724
Log GDP per capita	766	7.296	1.001	4.916	10.258
Real Openness	650	.251	.154	.040	1.068
Financial develop. index	735	4.681	1.560	-1.272	7.947
Economic liberalisation	516	5.321	.914	2.93	7.43
Political freedom	721	-.468	5.535	-10	10
Capital account openness	751	-.607	1.063	-1.766	2.602
Log Dom. Credit to private. Sector % GDP	744	2.523	.942	-.381	5.193
Log. bank loans % GDP	741	2.382	1.055	-8.008	6.248
Log. Liquid liabilities(M3) % GDP	749	3.256	0.702	-.185	6.625
Log.dom. credit provide by bank sector	647	3.142	1.055	-1.685	7.135

Table 2: Pair wise Correlation Coefficient.

	Fin.dev.	GDP.GR	Open.	Dom. Cred,B.	Liq. Liab.	Pri. Sect. Cred.	GDPPC	Pol.free.	Eco.Lib.	Fin.open.
Fin. development.	1.000	-	-	-	-	-	-	-	-	-
GDP growth	-0.14***	1.000	-	-	-	-	-	-	-	-
Openness	0.86**	0.053	1.000	.-	-	-	-	-	-	-
Dom.credit pro. by bank sector	0.87***	-0.15***	0.07*	1.000	-	-	-	-	-	-
Liquid liabilities	0.90***	-0.13***	-0.17***	0.69***	1.000	-	-	-	-	-
Dom. Credit to private sector	0.87***	-0.09***	0.02	0.57***	0.74***	1.000	-	-	-	-
GDP per capita	0.32***	0.16***	0.09**	0.19***	0.24***	0.36***	1.000	-	-	-
Political freedom	0.08**	0.01	0.03	0.01	0.132***	0.12***	0.03	1.000	-	-
Economic liberalisation	0.48***	0.15***	0.11**	0.27***	0.44***	0.56***	0.41***	0.37***	1.000	-
Capital account openness	0.18***	-0.004	0.18***	0.19***	0.18***	0.10***	0.15***	0.08	0.43***	1.000

Difference-in-Difference estimation

Table 3a: Financial development and economic liberalisation

Dependent Variable: Financial development index				
	1	2	3	4
Economic Lib.	0.94		0.79	
	(0.22)***		(0.27)***	
3year_pre_lib.		0.024		0.57
		(0.037)		(0.039)
3year_post_lib.		0.038		0.57
		(0.027)		(0.029)*
4year_post_lib.		0.065		0.59
		(0.027)***		(0.026)**
Observations	445	322	337	322
R_squared	0.32	0.05	0.24	0.05
Sample	ALL	ALL	Treated	Treated

Table 3b: Financial development and Political freedom

Dependent Variable: Financial development index				
	1	2	3	4
Political lib.	0.026		0.015	
	(0.011)**		(0.011)	
3year_pre_lib.		0.045		-0. 03
		(0.034)		(0.023)
3year_post_lib.		0.031		0.0004
		(0.023)		(0.017)
4year_post_lib.		-0. 106		0.45
		(0.056)*		(0.019)**
Observations	603	569	307	377
R_squared	0.02	0.06	0.08	0.10
Sample	ALL	ALL	Treated	Treated

Notes: robust standard errors, clustered at the country level, in parentheses.*significant at 10%;** significant at 5%; significant at 1%.
All the regressions include yearly fixed effect.

Table 3c. Financial development and Capital Account Openness

Dependent Variable: Financial development index				
	1	2	3	4
Financial Lib.	0.23		0.29	
	(0.047)***		(0.102)***	
3year_pre_lib.		1.24		-1. 53
		(1.01)		(0.46)**
3year_post_lib.		-1. 75		0.24
		(1.01)*		(0.087)**
4year_post_lib.		0.17		0.56
		(0.203)		(0.22)*
Observations	634	376	309	322
R_squared	0.04	0.12	0.08	0.05
Sample	ALL	ALL	Treated	Treated

3d. - Financial development , Political freedom and Economic liberalisation

	1	2	3
Real Openness	0.665	0.732	-1.475
	(1.396)	(1.434)	(1.791)
GDP growth	-3.981*	-3.855*	-0.965
	(2.257)	(2.248)	(1.785)
Log GDP per capita	0.630*	0.637**	1.004**
	(0.320)	(0.312)	(0.371)
Political freedom	-0.290	-0.035	
	(0.373)	(0.036)	
Political freedom_5	1.045*	1.118**	
	(0.530)	(0.512)	
Economic liberalisation			0.587
			(0.242)**
Economic liberalisation_5			0.319
			(0.464)
Observations	554	553	395
Number of Countries	40	40	30
Adjusted R-Squared	0.266	0.274	0.414

Notes: robust standard errors, clustered at the country level, in parentheses.*significant at 10%;** significant at 5%; significant at 1%.
All the regressions include yearly fixed effect

Dynamic Analysis

Table 4a: Effect of Economic liberalisation on financial development in African countries

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Dependent variable: FD	OLS		LSDV		SYS-GMM	
	1	2	3	4	5	6
FD_1	0.973***	0.980***	0.670***	0.731***	0.649***	0.88***
	(0.008)	(0.007)	(0.030)	(0.024)	(0.081)	(0.086)
Real Openness	0.109	0.088	0.364	0.131	0.324	0.162
	(0.129)	(0.077)	(0.364)	(0.570)	(1.747)	(0.184)
Log GDP per capita	0.001	0.015	0.250**	0.368	0.328*	0.067
	(0.017)	(0.016)	(0.127)	(0.015)	(0.171)	(0.069)
GDP growth	-0.633***	-0.689***	-0.952***	-0.068***	-1.17*	-1.937***
	(0.221)	(0.006)	(0.212)	(0.225)	(0.662)	(0.624)
Economic freedom	0.045***		0.067***		0.121*	
	(0.016)		(0.023)		(0.052)	
Capital account openness		0.016**		0.0162**		0.0805**
		(0.006)		(0.006)		(0.035)
AR2(p-value)					0.178	0.896
Hansen(p-value)					0.796	0.224
Adjusted R-squared	0,97	0,97				
Number of countries	31	42	31	42	31	42
Observations	397	581	397	581	379	542

Notes: Robust standard errors are in parentheses.*significant at 10%; **significant at 5%;***significant at 1%..

Table 4b: Effect of political freedom and stability on financial development in African countries

Dependent variable: Fin.Dev.	OLS			LSDV			SYS-GMM		
	1	2	3	4	5	6	7	8	9
FD_1	0.979***	0.980***	0.977***	0.716***	0.719***	0.728***	0.966***	0.99***	0.977***
	(0.007)	(0.007)	(0.007)	(0.025)	(0.026)	(0.024)	(0.077)	(0.071)	(0.065)
Real Openness	0.071	0.095	0.112	0.648*	0.685**	0.310	-1.412	-0.82*	-0.163
	(0.097)	(0.097)	(0.084)	(0.345)	(0.349)	(0.233)	(0.943)	(0.427)	(0.204)
Log GDP per capita	0.016	0.009	0.0174	0.411***	0.225**	0.146	0.375	0.20**	0.011
	(0.016)	(0.014)	(0.014)	(0.108)	(0.109)	(0.105)	(0.178)**	(0.72)	(0.052)
GDP growth	-0.584***	-0.636***	-0.623***	-0.928***	-0.952***	-0.893***	-1.90***	-0.99*	-1.565***
	(0.238)	(0.194)	(0.182)	(0.189)	(0.189)	(0.186)	(0.597)	(0.232)	(0.460)
Political freedom (dummy)	0.035			0.023			0.026		
	(0.021)			(0.036)			(0.12)**		
Political freedom (polity2)		0.002			0.001			0.33*	
		(.001)			(0.003)			(0.183)	
Political stability			0.049*			0.103**			0.399***
			(0.029)			(0.040)			(0.126)
AR2(p-value)							0.706	0.734	0.764
Hansen(p-value)							0.739	0.634	0.522
Adjusted R-squared	0.976	0.975	0.975	0.97	0.99	0.998			
Number of countries	40	40	48	40	40	48	39	40	41
Observations	548	547	579	548	547	579	509	514	539

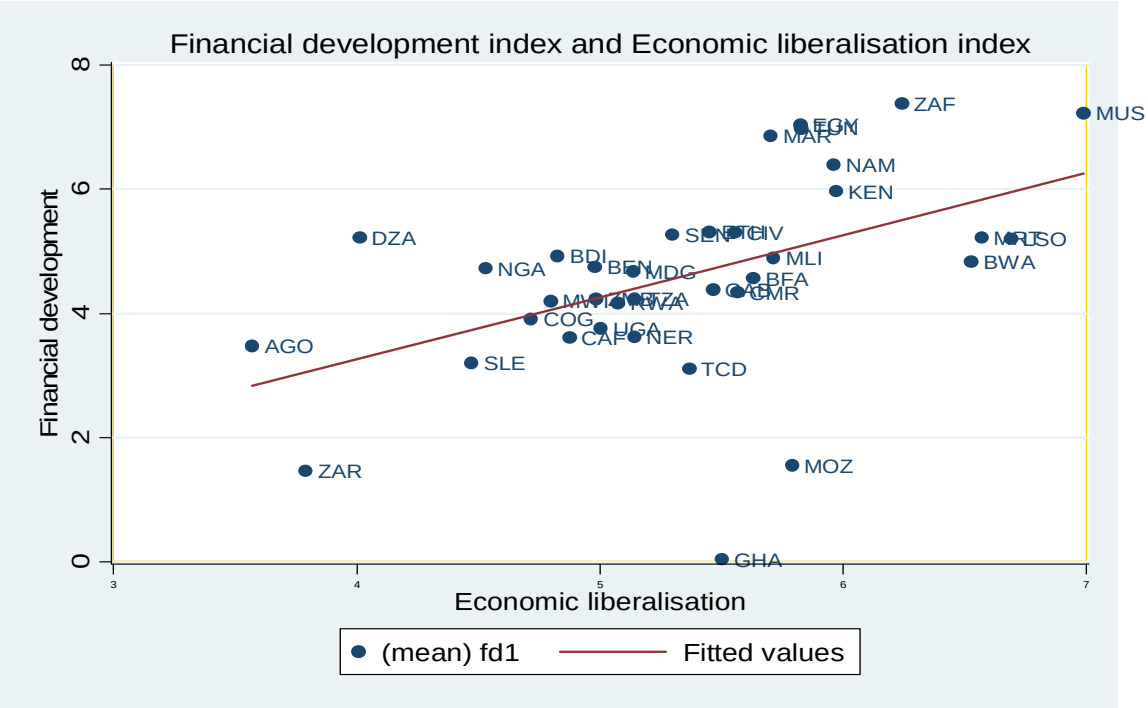


Figure1. Financial development and economic liberalisation index

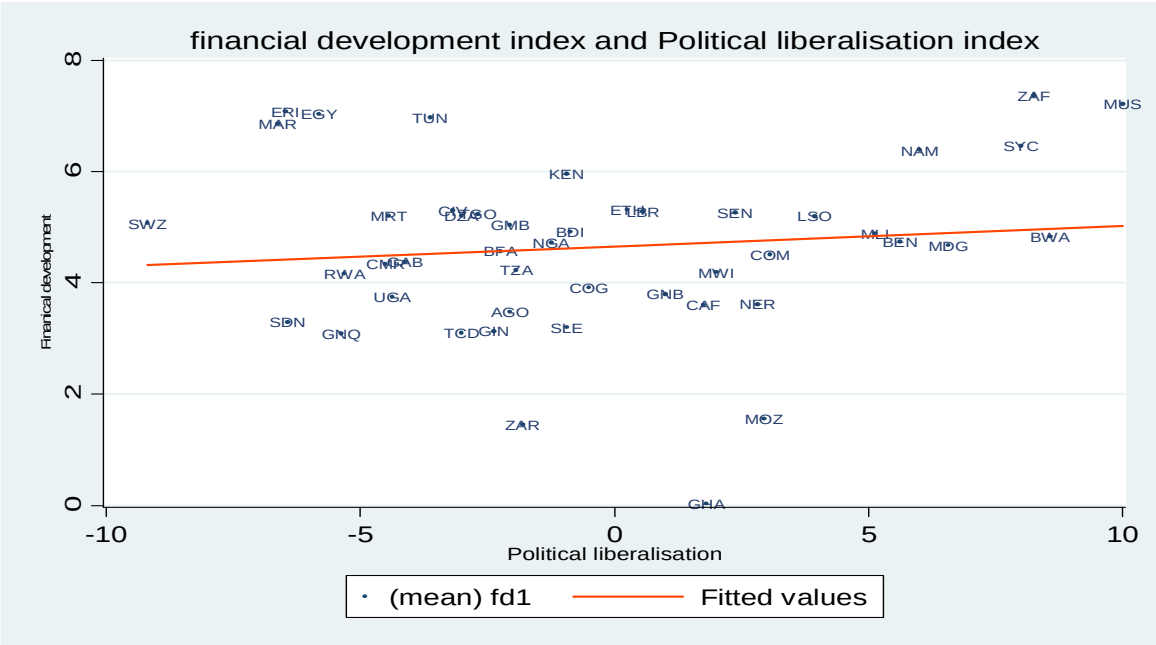


Figure 2. Financial development and Political Liberalisation index

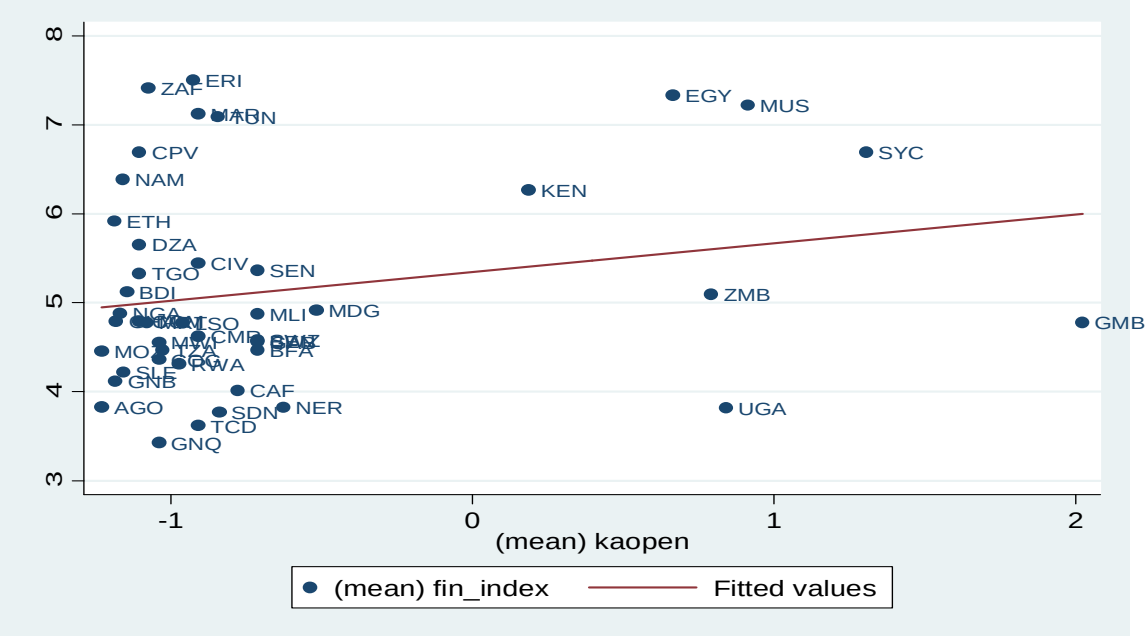
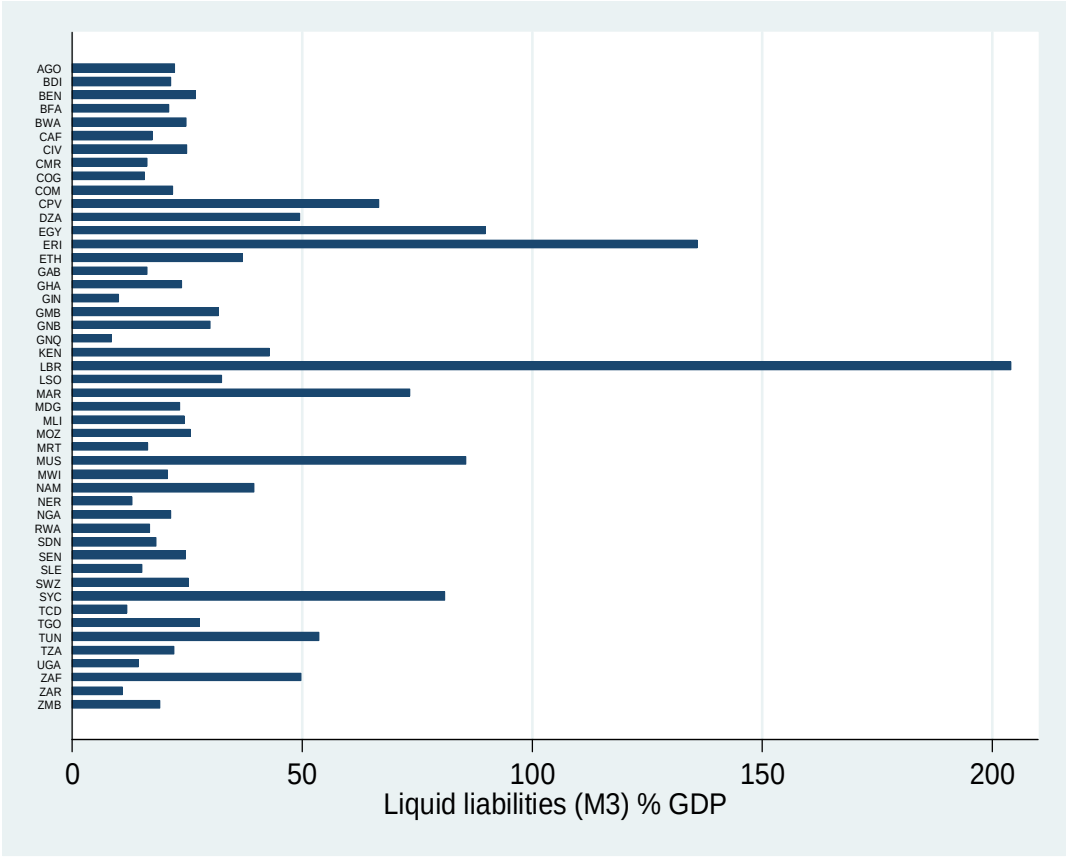


Figure 3. Financial development and index of capital account openness

Fig.4. Financial development index in various African countries, 1990-2005



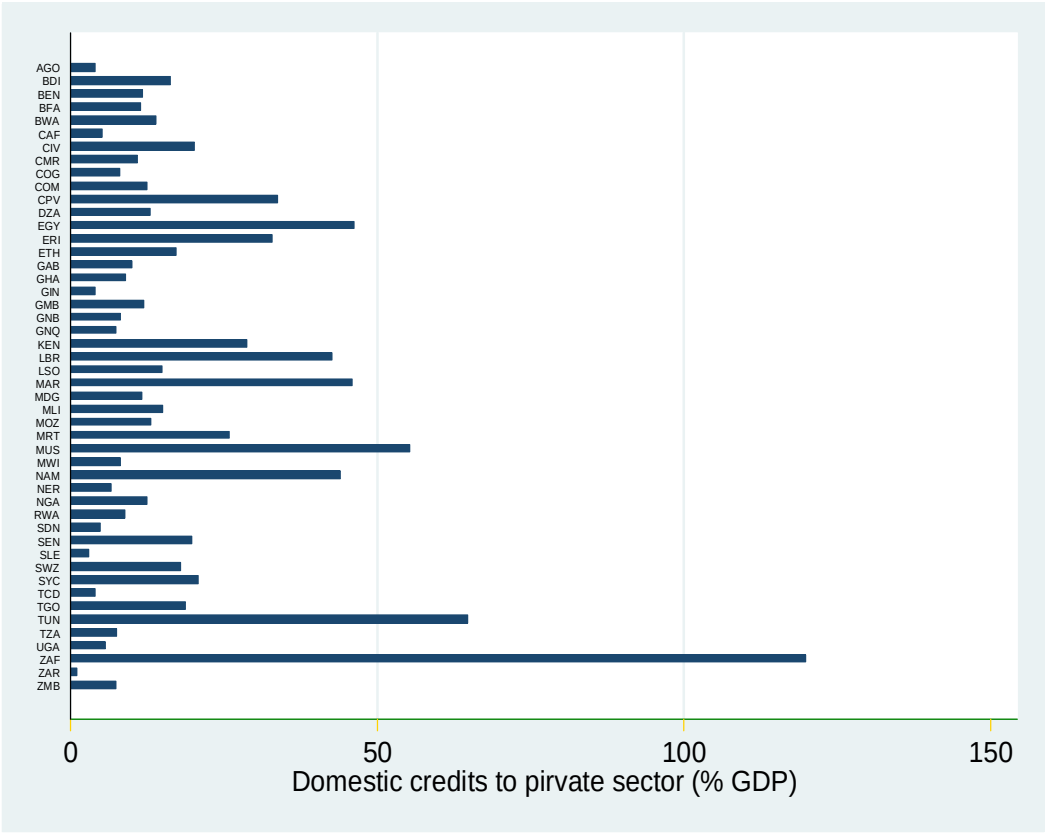
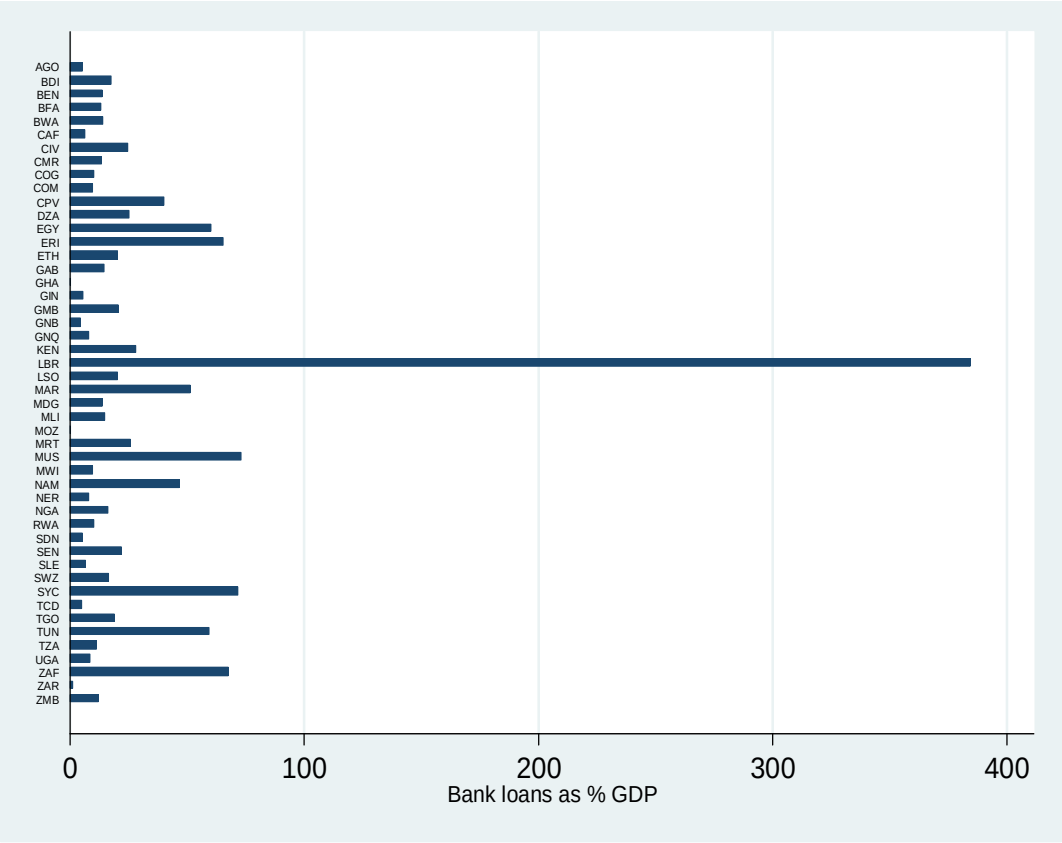


Figure 5. The average domestic credits to private sector (% GDP) and liquid Liailities (%GDP) 1990-2005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NER
NGA
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SEN
SLE
SWZ
SYC
TCD
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TUN
TZA
UGA
ZAF
ZAR
ZMB
0
100
200
300
400
Bank loans as % GDP

Appendix

	Econ. liberalisation		Political freedom		Financial openness	
Countries	**Control**	**Treated**	**Control**	**Treated**	**Control**	**Treated**
Angola	yes	no	yes	no	yes	no
Benin	no	yes	no	yes	yes	no
Botswana	no	yes	no	yes	yes	no
Burkina Faso	no	yes	no	yes	yes	no
Burundi	no	yes	no	yes	yes	no
Cameroon	no	yes	yes	no	yes	no
Cape Verde	no	yes	yes	no	yes	no
Cent, Africa	no	yes	yes	no	yes	no
Chad	yes		yes	no	yes	no
Comoros	-	-	no	yes	yes	no
Congo Dem.	yes		yes	no	yes	no
Congo Rep.	yes		yes	no	yes	no
Cote d'lvoire	no	yes	yes	no	no	yes
Equat. Guinea	-	-	yes	no	yes	no
Eritrea	-	-	yes	no	yes	no
Ethiopia	no	yes	no	yes	yes	no
Gabon	no	yes	yes	no	yes	no
Gambia	-	-	no	yes	yes	no
Ghana	no	yes	no	yes	no	yes
Guinea	-	-	yes	no	yes	no
Guinea Bissau	-	-	no	yes	yes	no
Kenya	no	yes	no	yes	no	yes
Lesotho	no	yes	no	yes	no	yes
Liberia	-	-	no	yes	yes	no
Madagascar	no	yes	yes	no	yes	no
Malawi	yes		no	yes	yes	no
Mali	no	yes	no	yes	yes	no
Mauritania	no	yes	yes	no	yes	no
Mauritius	no	yes	no	yes	yes	no
Mozambique	no	yes	no	yes	no	yes
Namibia	no	yes	no	yes	yes	no
Niger	no	yes	no	yes	yes	no
Nigeria	no	yes	no	yes	yes	no
Rwanda	no	yes	yes	no	yes	no
Senegal	no	yes	no	yes	yes	no
Seychelles	-	-	yes	no	yes	no
Sierra Leone	no	yes	no	yes	yes	no
South Africa	no	yes	no	yes	yes	no
Sudan	-	-	yes	no	yes	no
Swaziland	-	-	yes	no	no	yes
Tanzania	no	yes	no	yes	yes	no
Togo	-	-	yes	no	yes	no
Uganda	no	yes	yes	no	yes	no
Zambia	no	yes	yes	no	yes	no
Algeria	yes		yes	no	yes	no
Egypt	no	yes	yes	no	no	yes
Morocco	no	yes	yes	no	yes	no
Tunisia	no	yes	yes	no	no	yes