THE INSTITUTIONAL DETERMINANTS OF FINANCIAL DEVELOPMENT: EVIDENCE FROM THE SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC)

by

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I declare that the above dissertation/thesis my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

Signature:  September 2016

Abstract:

This study provides evidence on the role of democratic institutions in fostering financial development in ten economies in the Southern African Development Community classified into three income groups from 1975 to 2013. Polity IV variables, considered as measure of democracy are applied to quantify institutions, while bank deposits, private credit and liquid liabilities proxy financial development. Initially, panel regressions are estimated using Ordinary Least Square and Instrumental Variable estimators and find evidence of a linear and non-linear association between democratic institutions and financial development. The instrumental variable regression allows for the joint endogeneity of regressors through the use of internal instruments. Evidence from panel regressions suggests that democratic institutions are positively associated with financial development for the upper middle income countries. A negative relationship is found for the lower middle and low-income countries. Applying Bayesian Vector Auto-regressions and variance decomposition of annual proxies for financial development, the study determines the most important institutional variables that account for variations in financial development. The use of Bayesian inferences mitigates estimation risk, sample bias, over-parameterisation and provides better forecasting. The results show that shocks to democratic variables positively affect financial development in the upper income countries, with substantive democracy and human capital development contributing the most towards variations in financial development while the effect is negative for the other income groups but, however, improved slightly after 1990. The Markov switching model is applied to show evidence of fragility of financial development in the Southern African Development Community region. Results from the Markov Switching Model find that the countries switch between regimes of high and low financial development following political regime changes. Countries in the lower middle and low-income groups show a greater probability of being in a regime of low financial development while the upper income countries show a higher probability of being in a state of high financial development. These probabilities improved for the lower middle and low-income groups after 1990, a period associated with increasing democratisation. The Markov findings suggest that democratic institutions may have helped promote financial development despite the inherent instability of the financial system. Therefore, it seems that appropriate government policies in strengthening democratic institutions may mitigate instability and foster financial development with the likely potential of producing long-term gains in the financial sectors for all the income groups.

Keywords: Financial development, democratic institutions, IV regressions, Markov inferences Bayesian inferences, financial instability hypothesis, Polity IV, bank deposits, private credit, liquid liabilities, SADC.

Dedication

This thesis is dedicated to my father, Anchang Louis Anthony Nsom and my mother, Winifred Futela Anchang of blessed memory.

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Acronyms	Meaning
ADF	Augmented Dickey-Fuller
BASA	Banking Association of South Africa
BMA	Bayesian Model Averaging
BIC	Bayesian Information Criterion
BVAR	Bayesian Vector Auto-regression
CSP	Centre for Systemic Peace
DCS	Domestic Credit Supply
DFIs	Development Financial Institutions
DGMM	Difference Generalised Method of Moments
ECOWAS	Economic community of West African States
EPAs	Economic Partnership Agreements
FD	Financial Development
FDI	Foreign Direct Investments
FSAP	Financial Sector Assessment Programme
FSDS	Financial Sector Development Strategy
GDP	Gross Domestic Product
GDS	Gross Domestic Savings
GDSII	Growth and development Strategy
GLS	Generalised Least Squares
GMM	Generalised Method of Moments
ICT	Information and Communication Technology

IPS	Im, Pesaran and Shin
IV	Instrumental Variable
LLC	Levin, Lin and Chu
MCMC	Markov Chain Monte Carlo
MSM	Markov Switching Model
MFW4A	Finance Work for Africa
MTP	Medium Term Plan
OLS	Ordinary Least Squares
PCA	Principal Component Analysis
PRSP	Poverty Reduction Strategy Paper
RISDP	Regional Indicative Strategic Development Plan
SACU	Southern African Customs Union
SADC	Southern African Development Community
SGMM	System Generalised Method of Moments
TSLS	Two Stage Least Squares
TFP	Total Factor Productivity
VECM	Vector Error Correction Model
WTO	World Trade Organisation

CHAPTER 1

INTRODUCTION

1.1 Background to the Study:

The views of economists vary on how financial development (FD) and economic growth relate, but what actually determines FD generally remains under researched and seemingly non-existent in the SADC region. The view on the factors that determine of FD has caught the attention of researchers in recent years inspired by the work of Levine (1997), who contends that the positive link between FD and economic growth does not always suggest that FD is exogenous to economic growth. This finding has recently stimulated research on the causal elements of FD with some mixed results –, however, with increasing consensus weighing on the positive role of democratic institutions on FD.

The finance growth nexus, however, was pioneered by the seminal work of Schumpeter (1911) and has received attention both theoretically and empirically. Schumpeter's assertions highlighted the fact that credit is required by entrepreneurs to finance new production techniques and that banks facilitate the intermediation process and as a consequence promote economic development. Reasoning along Schumpeterian lines are the works of Gurley and Shaw (1955), Goldsmith (1969) and Hicks (1969), who argue that the saving and investment process is stimulated when more financial products and services are provided by financial intermediaries.This in turn has a positive effect on economic growth. This view dubbed the "financial structuralist view" gained little grounds on development policy largely because of the dominance of the Keynesian "financial repressionist" ideology (Ang, 2008). The Keynesians advocated for restrictive measures to finance fiscal deficits without an increase taxes. According to Ang (2008) these included tight measures imposed on the financial system such as the control of interest rates, increasing the reserve requirement and programmes that foster direct credit. Ang (2008) suggests that these measures would ultimately dampen the zeal to hold money and acquire financial assets and decrease the availability of credit to investorsthereby shrinking the banking system and suppressing intermediation.

The Keynesian view was challenged in the 1970s by McKinnon (1973) and Shaw (1973) who addressed the negative effects of financial repression on economic growth and called for financial liberation. The policies suggested by the McKinnon–Shaw framework have the potential tosuppressthe deepening of the financial sectorand decrease the growth rate in the economy. Van Wijnbergen (1982, 1983), led a group of neo-structural economists who severely questioned the views of the McKinnon-Shaw school in the early 1980s.They assert

that financial liberalisation is unlikely to increase growth in the presence ofinformal financial market.

The 1990s saw the rise of growth models based on investment in human capital, innovation and knowledgetogether with the relative merits of financial systems based on banks and markets (see Beck & Levine, 2002; Bencivenga & Smith, 1991, 1993 among others) as well as the institutional school of thought which holds that understanding the institutional environment is imperative for growth with early contributions from Knack and Keefer (1995). It is fair to contend that recent work including Acemoglu, Johnson and Robinson (2001, 2002), Easterly and Levine (2003), Dollar and Kraay (2003), Rodrik, Subramanian and Trebbi (2002, 2004) among others have more or lessin academic unanimity that political institutions that increasing constraint the powers of the government cause growth. The above schools of thought highlight the financial and institutional determinants of growth and not the institutional determinants of FD considered as being endogenous to growth Levine (1998). This finding has recently stimulated research on the determinants of FD with a focus on the institutions (Barro, 2008, Cooray, 2011, Huang, 2010, Yang, 2011, Anwar & Cooray, 2012, among others).

The objective of this study is to investigate the effect of democratic institutions on FD in the upper middle, lower middle and low-income countries according to the World Bank (2015) classification in the SADC region. This region has received little attention in the literature on the institution-finance relationship thus far. Studies have been limited to the finance-growth relationship using mostly endogenous growth models (See Allen and Ndikumana, 1998, Aziakpono, 2003, Odhiambo, 2005, Banda, 2007 and Le Roux & Moyo, 2015). We attempt to fill this gap in the SADC region by investigating the institutional determinants of FD with a focus on democracy. The study builds from the work of Yang (2011), Cooray (2011), Anwar and Cooray (2012) and Huang (2010), who contend that political institutions, especially with regard to democratic transformation, foster FD while assuming a linear relationship between the variables. We posit that FD in SADC countries could be achieved through democracy controlling for specific economic and social variables in a relationship that could be non-linear. We test this hypothesis in a region characterised by countries with improving but differentiated levels of FD, following deregulation in the 1990s Brownbridge and Harvey, (1998); Nyawata and Bird, (2004) and a wave of democratisation though with fragile and predominantly weak institutions Landsberg (2004) a feature of the lower middle and low-income countries.

Empirically the study seeks to identify and account for the variation in FD across nations in the Southern African Development Community (SADC) by focusing on the democratic

institutional variables, the interaction between these institutional variables with specific economic and social variables (school enrolment, population, black market premium, trade openness and government expenditure) in determining FD. The SADC region has witnessed a gradual development of its financial sector from 1994 to date, following financial liberalisation and a spate of democratisation. This suggests that the emergence of democratic institutions, though weak, could be spurring FD while interacting with other social and economic variables and those policy makers in the region could target the quality of democratic institutions to foster FD.

The SADC countries under study[1] are grouped into income levels according to the World Bank classification that is as upper middle, lower middle or as low-income countries. The study focuses on a panel of 10 out of 15 economies over the period 1975-2013. The exclusion of some countries in the study is due to the lack of available data involving important variables used during the period of study. To mitigate uncertainty faced by research on the determinants of FD and uncertainty about the composition of the explanatory variables (control) in our model, we use the Bayesian Model Averaging (BMA) Raftery, Madigan and Hoeting (1997) among other methodologies that have been suggested and widely discussed. More specifically, in each income group, the compositions of the control variables are chosen using BMA, which constitutes updating prior information of the variable of interest (beliefs or assumptions) with information revealed in the data rather than assumed judging from fundamental economic theory, as has been the case with previous finance-growth studies in the region.

In this investigation, we employ three dependent variables[2] as proxies for FD, for each income group. Initially, to analyse the data, we use both linear and non-linear models together with Bayesian inferences. Ordinary Least Squares (OLS) and Generalized Method of Moments (GMM) are employed to produce early results. We apply the difference and the system GMM, an approach that allows controlling for the joint endogeneity of regressors through the application of instruments that are internal. These methods of analysis have been widely used in the literature on the relationship between institutions and FD (see Huang, 2010, Yang, 2011, Cooray & Anwar, 2012, Deepraj & Nabamita, 2013, Roux & Moyo, 2015, among others).

[1]Botswana,Lesotho,Malawi,Mauritius,Mozambique,Namibia, South Africa, Swaziland, Zambia, and Zimbabwe,

[2] The share of bank deposits to the GDP; the share of bank credit to the private sector, defined as the credit issued to the private sector by banks and other financial intermediaries divided by the GDP and the share of liquid liabilities of banks and non-bank financial intermediaries to the GDP.

We introduce the Markov Switching Model (MSM) to show that FD may be volatile irrespective of the strength of institutions in the region. In classifying FD into two regimes (weak or low FD and high FD), we apply the MSM to determine probabilities and smooth probabilities of switching between states of weak or low FD and high FD. The Bayesian methodology is applied to our analysis to mitigate the estimation risk and sample bias benignly neglected in previous investigations. The Bayesian Vector Autoregressive (BVAR) model is employed to determine impulse responses on FD given shocks on institutional, economic and social variables.The most important democratic institutional variables that account for variations in FD are determined. These contribute to the literature in the SADC region where no such study has previously been executed. We contribute methodologically to the body of knowledge by the application of the Bayesian and Markov inferences to FD literature. Through applying the Markov Model, we contribute by showing that there is instability in FD in the economies under study in general but with a higher probability of being in state of high FD in the upper middle income countries and a high probability of being in a state of low FD in the lower middle and low-income countries, a result that supports the narrow version of the financial instability hypothesis. We also show that the effect of democracy on FD can effectively be assessed through its interaction with other social and economic variables in a non-linear relationship and that when democracy becomes more substantive it leads to positive outcomes for FD.

1.2 Objectives and Hypotheses of the Study:

1.2.1 Objectives of the study

Recent studies motivated by the work of Levine (1997) suggest that FD could be explained by growth and according to Huang (2010) what determines FD remains imperfectly understood. The role of institutions has currently become topical among researchers and policy makers as a factor that determines FD. For instance studies by La Porter, Lopez-de-Silanes, Shleifer and Vishny (1998); Rajan and Zingales (2003); Acemoglu and Johnson (2005); Haber, North and Weingast, (2007); Yang (2011); Miletkov and Wintoki (2012), Marcelin and Mathur (2014), find evidence that law abiding institutions, institutions that protect property rights, institutions that ensure the enforcement of contracts as well as those that effectively constrain those in power are associated with higher levels of FD. This new and crucial area of interest on the determinants of FD is addressed in the SADC region.

Essentially, the research attempts to answer the question: Are democratic institutions a sine qua non to FD? The main objectives of this study are:

(i) To determine the effect of democracy and its interaction with specific social and economic variables on FD.

(ii) To determine the probability of switching between states of high FD and weak or low FD following political regime changes.

(iii) To examine how innovations in the democratic institutional variables affect FD compared to the policy and social variables, and hence determine the most important variables having an influence on FD.

(iv) To relate findings to policy designs and suggest recommendations.

1.2.2 Hypotheses of the study.

According to North (1981:201-202) institutions are "…a set of rules, compliance procedures, and moral and ethical behavioural norms designed to constrain the behaviour of individuals in the interest of maximising wealth or utility of principals". This suggests that constitutions and electoral rules are good examples of institutions which are often violated in varying degrees in developing countries. Rodrik, Subramanian and Trebbi (2002, 2004) highlight a range of institutional arrangements that are conspicuously absent in developing countries. These include a lack of trust in the rule of law; weak institutions to mitigate risk (where: the rule of law is not respected, there are weak property rights and contract enforcements, rulers are not effectively constrained). These according to Barro (2008) generally fall under the legal and political framework of a country, thought to be brought about by democracy. It is widely agreed that democracy constraints the behaviour of rulers and delivers better institutional outcomes. By grouping the countries under study into low, lower middle and upper middle income, we run Markov switching regressions with constant volatility to determine the probability of switching between regimes of high FD and weak or low FD. We determine whether first order effects on FD come from the economic or social variables or from democracy or when they interact through the use of Bayesian impulse responses. Considering that a significant number of SADC countries under study (Zambia, Lesotho, Malawi, Mozambique, Zimbabwe, Swaziland) have achieved democracy at the formal or procedural level, and not at the substantive level[3], resulting generally in weak institutions Landsberg (2004), it would be interesting to empirically investigate whether democracy and its interaction with the specific social and economic variables prevalent in the region has resulted in meaningful financial deepening in the region. We define substantive democracy

[3] The Polity IV index of democracy for these countries suggest that democracy on the average has not attained the substantive level, according to our definition of substantive democracy following the period of democratisation considered in the study (1990-2013)

as one that not only brings about free and fair elections, the separation of powers and the role of opposition parties but it also ensures respect of the rule of law, protects property rights,ensure that contracts are enforced, creditor and shareholder rights and puts effective constrain on rulers. Formal or procedural democracy on the other hand relates to the introduction of the norms, values and standards that regulate the behaviour of states, but the states find it difficult to enforce them – the variables that define substantive democracy above are superficial or not enforced at all.

In order to achieve the objectives of the thesis, we will test the following hypotheses using the econometric, Markov and Bayesian methods mentioned above. Since strong or weak institutions are thought to be established by democracy or lack of democracy respectively Barro (2008), we hypothesise that:

(i) Democracy (procedural or substantive) leads to positive outcomes for FD.

(ii) Autocracy leads to negative outcomes for FD.

(iii) Constraints on executives lead to positive outcomes for FD.

(iv) Per capita income contributes positively in improving FD.

(v) The impact of institutional variables on variations in FD is greater compared to social and economic variables.

(vi) The probability of remaining in a state of low FD in countries experiencing low FD is high compared to countries experiencing high FD.

The following arguments inform our hypothesis and the expected signs. Siegel et al. (2004) argues that institutions that ensure respect of the rule of law, make sure that property rights are protected, ensure that contracts are enforced and put constraints on those in power are thought to be brought about by democracy. La Porta et al. (1998); Rajan and Zingales (2003); Acemoglu and Johnson (2005); Harber et al. (2005) show evidence that these institutions are positively linked with increasing levels of FD. These arguments suggest that democracy and constraint on executives may be positively associated with FD hypotheses (i) and (iii). Autocracy tends to create conditions conducive for political instability which negatively affects FD. A study by Roe and Siegel (2011) show strong evidence that varying levels of political instability around the world are a primary determinant of differences in FD across nations (hypothesis (ii)). In terms of hypothesis (iv), GDP per capita is shown to be positively associated with law enforcement La Porta et al. (1997, 1998) where the calibre of which the law is enforced improves sharply with the level of per capita income. It has also

been shown to have a very strong positive link with institutional quality Kaufmann, Kraay and Zoido-Lobaton (1999a), Gurr and Marshall (2000). Considering hypothesis (v), consensus has not been reached among researchers on the primacy of institutions over other factors (e.g. geography, integration), Rodrik et al. (2004) that affect variations in income across nations. In the same tradition, the study tests the primacy of institutions over other factors that affect variations in FD. Hypothesis (vi) is informed by a version of the financial instability hypothesis Minsky (1992) which suggests when the economy experiences prosperity over a long period its witches from a stable system to an unstable system in its financial relations and hence we argue that such instability affects FD. We argue that instability in financial relations could be reinforced by political instability inherent in autocratic regimes thereby negatively affecting FD and it increases the probability of being in a state of low FD.

1.3 Significance of the Study:

The study contributes to the literature on FD by establishing whether political institutions have any positive outcome on FD in the selected SADC countries. The period under study is from 1975 to 2013, a period marked by political regime changes generally covering transitions from autocracy to democracy.

It is expected that the study will make the following contributions inthe area of FD in the SADC region:

(i) We apply Bayesian Model Averaging (BMA) to determine the proximate determinants of FD in each income group of the countries under study in the SADC region.

(ii) We assess the role of democratic institutions and the interaction between democracy with specific social and economic variables in determining outcomes for FD and that the role of democracy could be non-linear.

(iii) We employ Bayesian Vector Auto-Regressions (BVAR) and inferences thereof to show how shocks in the institutional variables affect FD compared to the specific social and economic (policy) variables and hence determine the most important variables influencing FD for each income group.

(iv) We show that the probability of staying in a regime of low FD in countries experiencing low FD is high compared to countries experiencing high FD by applying the Markov Regime Switching Model to FD. The fact that switching occurs between states of high and low FD suggests that the financial sectors of the income groups are inherently unstable, lending credence to a narrow version of the financial instability hypothesis.

Model unpredictability is a feature of experiential research on the factors that determine FD and this aspect is mitigated by the application of Bayesian Model Averaging (BMA), (Huang, 2010). According to Levine and Renelt (1992) the reliability of current conclusions on cross-sectional growth regressions are questionable, particularly where a huge amount of literature suggests a variation of economic, social, political and institutional variables as determining long-run average rates of growth. The study builds from this and applies the (BMA) for each income group in the SADC to measure the robustness of a choice of possible factors that determine of FD.

Secondly, no overall index for FD has been developed in the literature. To overcome this gap we apply the Principal Component Analysis (PCA) based on measures of FD that have been widely applied (Levine and Zervos, 1996; Ang and Mckibbin, 2007; Huang, 2010). This will create aggregate indices for FD for any income group that shows that these indicators are highly correlated. Where applicable (the upper middle income countries), the study uses four standard measures of FD (Beck, Demirgüç-Kunt, and Levine, 2000) on which the PCA are based on. These include: (i) liquid liabilities: this is one of the major indicators that measures the size of financial intermediaries in relation to the economy. It includes: the central bank, deposit money banks and other financial institutions; (ii) private credit: This variable generally measures the activities of financial intermediariesthat are provided to the private sector; (iii) the share of bank deposits: this indicatormeasures the total assets held by deposit money banks and finally (iv) the ratio of commercial banks assets to the sum of commercial bank and central bank assets.

Thirdly, the study assesses the role of institutions (democracy) and its interaction with specific social and economic variables in determining positive outcomes for FD in the SADC region. Most studies have used OLS and Instrumental Variable (IV) estimators such as the GMM and more recently difference and system GMM to investigate the role of institutions on FD. We apply some of these previous methods, as mentioned earlier to determine some preliminary evidence. To show instability in FD, the study contributes by introducing the Markov Switching Model (Hamilton, 1989), one of the most popular non-linear time-series models, to the FD literature. This model would explore the significance of the institutional variables in a non-linear relationship on FD by determining the probabilities of being in a state of high or low FD for the different income groups. According to Hamilton (1989), the merits of the model suggest that it involves multiple structures (equations) that can characterise time-series behaviour in different regimes and that is suitable for describing correlated data that exhibits distinct dynamic patterns during different time periods.

Fourthly, Muteba (2017) suggests that to account for estimation risk and sample bias Bayesian inferences may be applied. Bayesian method overcomes estimation risk because it does not rely on historical data to estimate the future i.e. forecast. Since Bayesian method averages the parameters generated from the posterior distribution, it in fact deals with the bias problem. The study follows this method and employs BVAR to determine how shocks in the institutional variables affect FD compared to the specific social and economic variables used in the study. We also compute forecast error variance decompositions of FD to investigate what democratic institutional variables are most salient affectingFD over time and how much they contribute to FD. Sevinç and Ergûn (2009) suggest that BVAR models mitigates the over parameterization of VAR models and it is better in terms of forecasting.

1.4 Motivation for the Study:

The study uses a dynamic panel data approach from 10 SADC countries, grouped into upper middle income, lower middle income and low-income countries, according to the World Bank (2015) classification. The economies of the world are divided according to 2015 GNI per capita. The calculation is done using the World Bank Atlas method. The diferent income groups include: low-income, $1,045 or less; lower middle income, $1,045 -$4,125; upper middle income, $4,125 - $12,736; and high income, $12,736 or more. These groupings tend to suggest salient differences and similarities in their economic, social, financial and implicitly political structures that may be influencing FD in each of the different income groups. Moreover, there is lack of empirical evidence on the institutional determinants of FD in the region. The study, therefore, explores research deficiency in this area of interest in the region by focusing on the role of political institutions with emphasis on democracy, hypothesised as one of the proximate determinants of FD.

The SADC has witnessed a noticeable gradual development of its financial sector between 1993 to date due to various financial restructuring programmes that aim to achieve a better financial system. Evidence of these programmes can be drawn from the various FD strategies incorporated in each country's National Development Plan. At the regional level, SADC under the Protocol on Finance and Investment (2006) envisages the harmonisation of financial policies within the region in achieving one of its long-term objectives of macro-economic convergence. According to Brownbridge and Harvey (1998) these reforms have almost entirely eliminated the repressive financial policies that were prevalent in the region. Is the gradual improvement in FD, untested evidence, a result of better and improved democratic institutions brought about by regional political integration, governance and democratisation? We attempt to empirically answer this question. Yang (2011) argues that

institutions that ensure that: the rule of law is respected, the rights to property are protected, contracts are properly enforced and that rulers are effectively constrained, are often thought to be brought about by democracy which is associated with higher levels of FD. We posit, as a motivation of one of our hypothesis stated above, that democracy at the procedural level is a necessary condition for FD. When democracy becomes much more substantive, this may serve as a sufficient condition for more meaningful financial deepening. This assertion is tested empirically from 1990 to 2013, a period where countries in the southern African region were experiencing increasing democratisation.

Considering that most SADC countries (especially in the lower middle and low-income groups) may not have achieved democracy at the substantive level, it would be interesting to empirically investigate whether improving democratic institutions is resulting in meaningful FD in the countries under study. If this is the case, then it would exemplify the contribution of democratic institutions in FD in the literature in general and in the SADC region in particular. We attempt, in our empirical analysis to fill this gap in the literature in the region, where to the best of our knowledge, no such study has been carried out.

Unlike previous studies in the SADC that have used more than one proxy for FD, this study reduces the dimensionality of correlated banking measures using PCA for any income group (the upper income group) experiencing high correlation of the FD indicators in order to circumvent the problem of multi-collinearity in the panel data investigations. The study applies bank-based financial sector indicators motivated by the fact that this sector is more developed than the stock market sector which is generally hindered by liquidity growth in most of the countries under study (Senbet and Otchere, 2008). In our analysis, we show the effect of the different explanatory variables on all three dependent variables applied for each model. The reason is that the dependent variables (bank-based proxies for FD) operated in tandem in the economy. They are interdependent – for instance, a simple model of credit creation suggests that as deposits increase, the liabilities of banks increase as well as reserves which banks are now able to extend more credit. Therefore, the measures of FD used in the study are not mutually exclusive, an approach different from thoseapplied in previous studies.

1.5 Organisation of the Study:

The study is structured as follows in the six chapters: The first chapter presented the background and context of the study.Chapter two provides an overview of states' policies with respect to FD and the health of democracy in all the countries under study. Chapter

three reviews the theoretical and empirical literature on the determinants of FD with a focus on the institutional determinants. The empirical literature critically examines studies on the effects of institutions on FD in developed, emerging and developing economies. Chapter four begins the empirical section of the study. The different empirical approaches are presented to test the hypotheses. All variables applied are defined operationally and the construction of the dataset is described and discussed. Control variables used as explanatory variables in the study include social variables (human capital development proxy by secondary school enrolment and population) and policy variables (output per capita, inflation, foreign direct investments, trade openness, government expenditure and black market premium). All variables that have the potential to cause serious endogeneity problems are left out. The methods of analysis, diagnostics and models used are discussed. The hypotheses are tested by using a variety of econometric techniques to ensure reliability of results. Chapter five presents and discusses the overall empirical results based on the three main objectives of the study. The final chapter summarises the contribution of this work to the field. Improvements and possible extensions of this work are presented along with possible policy implications and recommendations. These policy ideas are intended to provoke future debate and underscore the need for future debate. In the ensuing chapter, it would be imperative to understand the health of governance and democratisation of the countries under study as they pursue policies to improve on FD.

CHAPTER 2

COUNTRY SPECIFIC POLICIES ON FINANCIAL DEVELOPMENT AND THE STATE OF DEMOCRACY

2.1 Introduction:

In this chapter, we present the state of democracy in each country and the level of FD given the policies that each country has put in place to foster FD. The policies to promote FD form part of SADC's objectives in general and the national development plans of the countries under study in particular, suggesting that SADC countries see FD as crucial in fostering the development and growth of their economies. The SADC countries also acknowledge the importance of democratic transformation in achieving the objectives of the various development plans in place. The strategic framework to improve FD is elucidated more generally in the SADC's protocol for finance and investment. We explore each country's strategic framework with respect to the state of FD and associate it with the level of democracy using Polity IV authority trends. The combined polity scores (democracy minus autocracy) are used to show authority trends. Transformation towards democratisation and commitment to democratic rule by governments in the region began in earnest in the 1990s. The countries under study except for Zimbabwe and Swaziland show an improvement in authority trends from the 1990s onwards.

According to Polity IV Trend Graphs (CSP, 2014), figures 1a, 2a and 3a shows each country'strends in democracy (the country's annual Polity scores) from 1946-2013. The graphs show grids denoting upright thresholds for democracy with values greater than six and above and autocracy with values less than negative six and below. A horizontal line is designated to show the end of the cold war in 1991. The trend graphs also provides exceptional details on special polity conditions, including periods of factionalism or dissension with values of 6 or 7 and represented by red trend lines; periods of foreign interventions (interruption) carry the value -66 and are shown on the graphs with dashed purple lines; periods of anarchy (interregnum) are given the value -77 and are denoted with dashed black lines and periods of transition following a year of independence, are given the value -88 with the trend shown by dashed green lines. Judging from average authority values[4] for the period (1975-2013) we determine whether the countries under study have achieved procedural or substantive democracy according to our definition. Polity 2 index of democracy (often referred to as the combined polity score) is obtained by computing the

[4] These average values are the author's own calculations. An average score of 6 and above suggests substantive democracy otherwise procedural.

difference between the democracy and autocracy score. There are six authority characteristics which determine the democracy and autocracy scores. These include: regulation, competitiveness and openness of executive recruitment, operational independence of chief executive or executive constraints, regulation and competition of participation. Applying the above variables countries are assigned scores based on how democratic or autocratic they are. The scores range from 0 to 10 with higher scores reflecting more democratic regimes. Correspondingly, the Polity 2 (democracy minus autocracy) ranges from -10 to 10. Values closer to 10 denote regimes that are more democratic. We obtain some early results on the effect of the Polity IV variables on FD for all income groups by running robust OLS regressions without any control variables. This section further serves to justify the study and informs how FD is high on the agenda of the various states' policy makers.

2.2 Financial Sector Development Strategies, Trends and the State of Democracy

The Protocol on finance and investment "seeks to foster harmonisation of the financial and investment policies of the State Parties in order to make them consistent with objectives of SADC and ensure that any changes to financial and investment policies in one State Party do not necessitate undesirable adjustments in other State Parties" RISDP (2006: 78).

Harmonisation of financial policies within the region underscores the importance of FD in each member state's economy. Harmonising financial policies suggests that each country in the region should be able to achieve a financial system that is effective, rival and strongnecessary for ensuring sustainable economic growth and development.

The strategic objectives and actions that are going to be taken to improve FD are spelt out in the SADC's (2006) Protocol for Finance and Investment. The SADC (2006) financial sector and investment strategic objectives and actions include, among others: more cooperation ofstate parties and the central banks to ensure exchange controls; establishing principles that ensure the convergence of the legal and operational frameworks of central banks; working together and harmonizing the payment clearing and settlement systems among central banks; central banks cooperating in the area of information and communications technology (ICT); working together on bank supervision amongst central banks; working together in the activities of Development Financial Institutions (DFIs) in the region; working together in the area of informal financial institutions and the services offered; easing the development of capital and financial markets in the region and working together to improve in the stock exchanges in the SADC region.

These measures explicitly or implicitly tend to support the view that FD contributes towards growth and development of which the SADC group recognises. What determines FD remains material and untested in the region. In the study, we contend that institutions, especially democratic institutions may be vital in determining the state of FD and this association may be direct or indirect.

According to the SADC (2006) Protocol for Finance and Investment there are, however, institutional arrangements responsible for the implementation of the protocol to foster the FD process. These institutional arrangements according to SADC (2006) embody the following: the integrated Committee of Ministers, Committee that constitute Ministers in charge of Finance and Investment, the Committee made up of the Central Bank Governors of the region, an oversight panel responsible for peer review. For successful implementation of the protocol, the committee of ministers of finance and investment would ensure that sub committees are created for purposes deemed appropriate.

We suggest that these institutional mechanisms would be more effective in a democratic environment for them to foster meaningful FD. One may infer from such institutional arrangements that leaders of the SADC region strongly acknowledges that in order to achieve economic growth and development (and implicitly FD) there has to be stable political, social, legal, economic and financial conditions. Article 5 of the SADC Treaty explicitly affirms that the SADC member states are committed to "promote common political values, systems and other shared values which are transmitted through institutions that are democratic, legitimate and effective" SADC, (2006:5). These institutional aspects tend to suggest that democracy could be seen as a proximate determinant of FD in the region.

The member states of SADC ultimately intend to attain a monetary union though each state will have autonomy in the running of their respective economies and financial sysytems (African Development Bank Group, 2010). We briefly assess the national strategic development plan under each country's Financial Sector Development Strategy to determine if there are any specific initiatives at the national level that would boost or encourage FD. We associate the policies in place or envisioned with the state of democracy and the state of FD in each country under study according to their income group. Figures 1a, 2a, 3a, and figures 1b, 2b, 3b generally indicate the authority trends and trends in FD (using the three proxies) in each country respectively. Generally, some volatility in FD is observed before 1990 in all the countries and more severely in the lower middle income and low-income countries. This period is associated with weaker average levels of democratisation. However, from 1990 onwards the volatility in FD is much lesser, a period where the SADC countries generally

embraced democratisation. These trends tend to suggest a relatively positive effect of democracy on FD especially for the upper middle income countries independent of the interaction of any macro-economic variables. The following sections consider each income group and evaluate the FD strategies, trends and the state of democracy together with OLS regressions based on the effect on Polity IV (authority) variables on FD in the absence of controls.

2.2.1 Upper middle income countries

BOTSWANA – THE NATIONAL VISION 2016

The financial sector strategy for the tenth National Development Plan will involve the following aspects, which reflect the findings of the Financial Sector Assessment Programme that were jointly shouldered with the IMF and the World Bank in 2007: Recommendations from the IMF (2007) and the World Bank (2007) on the financial sector assessment programme are summarised as follows: social and economic inclusion in the financial services and access policy; development of financial instruments that serve a wide range of sectors and accessed by a wide section of the community e.g., the use of technology in executing payments and settlements; Looking into the gains and risks when engaging in regional and global trade agreements, such as SADC protocols, Economic Partnership Agreements (EPAs) and World Trade Organisation (WTO) negotiations; update legislation that protect consumers and ensure sustainable financial stability; effectuate compliance in relation to disclosure stipulations, reporting standards and comprehension of financial products and costs involved; and, curb possibilities for fraud, money laundering and the financing of terrorism.

The government of Botswana (2009) seeks to create an environment conducive for financial sector development. This will be achieved byinstituting suitable regulatory structures that enhance increasing competition, promote innovation, improve consumer education and infrastructural development, and easing market entry and exit and the growth of institutions. The government will capitalise on its economic policy position to influence change by encouraging innovation in the financial sector. For instance, introducing smartcard based payments systems and by providing improved and timely data.

Clearly, one can deduce that there are national strategies geared towards improving FD in Botswana and the role of government is sacrosanct in achieving that goal. It is only in a democratic setting that the government will play such a role effectively. According to Polity

IV Project on political regime characteristics and transitions (1800-2013), Botswana obtained an average score of 7 out of a 10 point scale on its institutional democracy, with a score of 8 out of 10 for the past 10 years. During this period, the autocracy scores were 0, reflecting a combined polity score of 7 and 8 on 10 as indicated above. The average authority values for the period 1975-2013 for Botswana is 6.4 as shown in (table 1a below), a value that is above the lower limit of our definition of substantive democracy. Before 1990 the average value was 5.6 and improved to 6.9 after 1990. These fairly suggest that the country's democratic credentials are in place, which may positively affect FD as shown in figure 1b below.

MAURITIUS- FINANCIAL SERVICES ACT – 2007

Growth in the Mauritian economy is strongly linked by strong performances in four sectors. These include: financial services, ICT and the sea food sectors. Policy makers have been motivated to promote the financial services sector as another major pillar of the economy and establishing Mauritius as a regional financial center.

To further financial deepening in Mauritius, the financial services development Act (2007) recommended the establishment of the Financial Services Commission. The objectives of the Commission are as follows: to improve on the administration of financial services and also on global business activities; to promote good policies both in the financial services and global business sectors; emphasise policies that would ensure transparency, efficiency and fairness in the financial and capital markets in the country; to carry out research into new areas of development in the financial services sector; to embrace new challenges in the financial services sector; to capitalise on new opportunities and promote the creation of jobs and sustainable economic growth; to ensure a sound and stable financial system in partnership with the central bank of Mauritius; to establish a commission that will develop policies and priority areas of development in the financial services sector and make recommendations to the minister in charge of financial affairs. The commission recommended the following: The promotion, development, fairness, efficiency and openness and accountability of financial institutions and capital markets; ensure the protection of the public who are investing in non-banking financial products through suppression of crime and unethical behaviour; and ensure that the financial system in Mauritius is sound and stable. (Government gazette, 2007).

According to AEO (2013) the management of public finances and structural reforms are important requisites for strong and sustainable governance end results and promoting competitiveness. However, the country experienced a slight drop in the Transparency International Corruption Perception Index, falling from a rank of 39 in 2011 to 43 in 2012 (out

of 183 countries). The implication of the droptranslates into lack of public confidence in the government's anti-corruption efforts; the prosecution of public figures charged with corruption in 2012 dented the public's confidence more especially as the process dragged on.

Generally, governance in the country has been good taking into consideration Polity IV scores. The country obtained a score of 9 from 1975 to 1981 and 10 from 1981 to 2013, with combined polity scores of 9 and 10, respectively (see figure 1a below). For Mauritius, the average authority values for the period 1975-2013 is 8.9 (table 1a below), clearly indicating substantive democracy. Before 1990 the average value was 8.6 and improved to 9.0 after 1990. These suggest that positive GDP growth rates and good governance may be anchored to the strong financial performance. The effect of substantive democracy can easily be discerned from the improving trends in its FD for the whole sample period (see figure 1b below).

NAMIBIA VISION 2030 - FINANCIAL SECTOR STRATEGY – 2011-2021

The financial sector strategic plan for Namibia recognises that the financial sector is important in promoting economic growth in the country.The National Planning Commission (2011) of Namibia developed a financial sector strategy to improve the development of the financial sector after identifying weaknesses in the sector. The crucial frailties of the financial sector include: a superficial financial market; little rivalry**,** limited financial buffer, capital markets that are not developed; insufficient and ineffective regulation; very little access to financial services; limited knowledge on financial services and vulnerability of consumers; absence of active consumer movements, lack of skills in financial management; and the domination of foreign firms owning financial institutions.

The Ministry of Finance (2011) envisages that by the end of year 2021, the following should have been achieved: A financial system that is developed, deepened and efficient; regulators of very high standards, recognised and respected worldwide; a financial system that is stable, competitive and well regulated; less dominance of foreign ownership of financial institutions; a financial sector that is highly inclusive; a financially literate population that is protected of the financial services and products offered.

The government of Namibia recognises the importance of FD in contributing towards growth and development as expatiated in its financial sector strategy. The implementation and success of the plan will depend significantly on democratic governance in the country among

others. Considering that democracy may foster FD, Namibia may have to do more in effecting good democratic governance compared to its peers in the upper middle income group, judging from its Polity IV scores for institutional democracy from 1990-2013. The country achieved on average a combined polity score of 5.4 out of 10 during this period (see figure 1a below). Namibia is considered an outlier in this income group, with its polity scores tottering around the borders of substantive democracy. There are no scores for Namibia before 1990 and since 1990 the score has been constant on an average of 5.4 (table 1a below) corresponding with improving levels of FD comparatively to the period before 1990 where there were such high levels of volatility (see figure 1b below).

SOUTH AFRICA- NATIONAL DEVELOPMENT PLAN - 2030

The National Planning Commission (2011) notes that the South African financial sector is the most sophisticated in the SADC region and the country has not leveraged this asset enough to promote economic growth and create employment. The commission recommends that with the support of government these sectors can vigorously expand on the continent, with countries that have strong connectionswith the economy of South Africa. This tends to suggest that the government recognises the important role of this sector in contributing towards growth and development.

The National Development Plan (2011) identifies the following priority areas that should be improved on: Increase accessibility of financial services to the poorer sections of the population; lowering the costs of these services and infrastructure; encourage the extension of credit to small and medium firms engaged in productive investments; public private partnerships in the following areas: increasing business lending; provision of advisory and support services, state financed initiatives that are labour intensive; encourage private firmsespecially those in the construction sector to partner with South African banks in providing project finance for contracts on the continent.

According to the National Development Plan (2011), good governance is an important requirement in creating a conduicive environment for the private sector (financial institutions) to extend sufficient credit to businesses, especially to smaller firms. Sufficient credit extension to firms in need will lead to greater business investments and jobs creation. One of the government's strategic financial objectives is to increase financial inclusion, especially of the historically marginalised groups. With an efficient and stable financial sector access to banking and insurance services to the poorer sections of the population will be improved through the promotion and mobilisation of household savings and broader access to credit.

A report by Making Finance Work for Africa (MFW4A), (2016), suggests that South Africa benefits from a strong and well developed supervisory framework and thatboth bank and non-bank regulators share information withauthorities regularly, conduct liquidity risk reviews and are working on developing a framework to analyse macro-prudential risk. The MFW4A (2016) report also mentions that the domestic banks in South Africa are well capitalised above the new Basel III levels and are currently operating with an average capital adequacy ratio of 15% or 12% for Tier 1 capital. According to the MFW4A (2016) report,the banking sector is highly concentrated with four banks having over 80% of the banking assets and these banks remain profitable, well capitalised and adequately provisioned despite the 2008 economic downturn. International expansion of the banks especially in the SADC region has guaranteed substantial market share.

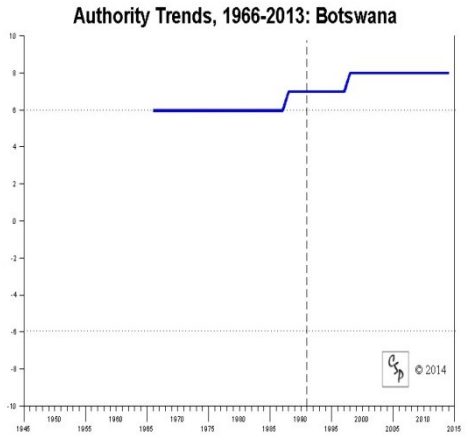
The Banking Association of South Africa (BASA) (2014) identifies a number of changes in respect to the regulatory environment, product offering and the number of participants resulting in a greater level of competition from smaller banks which have targeted the low-income and previously unbanked market. This suggests that South Africa has significantly improved on its financial inclusion. The Financial Sector Charter has been the main driver of financial inclusion in South Africa (BASA, 2014). According to the Finscope (2013) survey about 75 percent of adults in South Africa are banked and a total of 79 percent adults are formally served - are banked and have access to formal bank products/services. However, significant challenges remain in expanding access to affordable and expanding financial services. There still exists a major divide between the ability of salaried and non-salaried individuals to open bank accounts, lending to small and medium enterprises remains low and the availability of saving and insurance products is limited (Finscope, 2013).

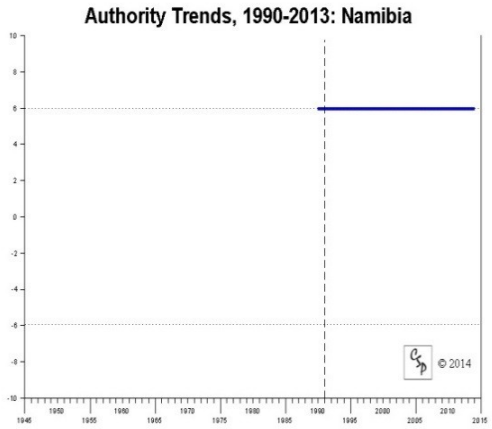
Associating good governance with democracy and Polity IV scores, South Africa obtained a score of 3.6 on the average from 1975 to 1990 and an average of 7 between 1990 and 2013. The average authority values for the period 1975-2013 is approximately 6 (table (i) a below). These mean values considered the period of transition where a score of zero may be allocated. The scores suggest that the country's democracy is in-tact and may have contributed to its present state of FD. The country has the most developed financial sector in the region.

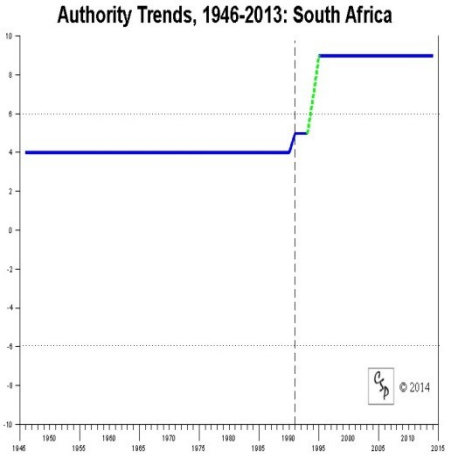
The trends in FD for this income group showed some instability before 1990 except for Mauritius that shows a smooth relatively constant improvement in FD for the whole period. Volatility in FD is most remarkable in Namibia before 1990 where one could not determine

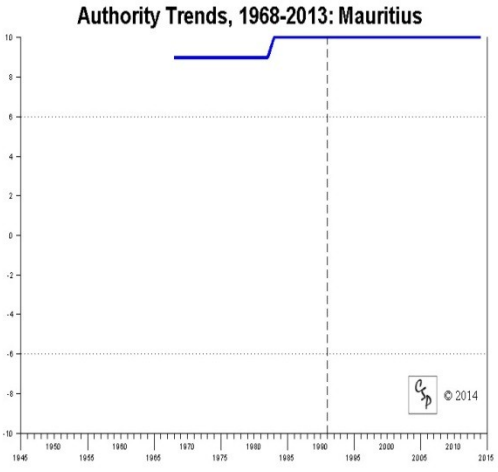
any authority trend but showed a marked improvement after this period. On the whole, for this income group, the period after 1990 showed improvements in FD (see figure 1b below.)

Figure 1a, Authority trends: upper middle income countries



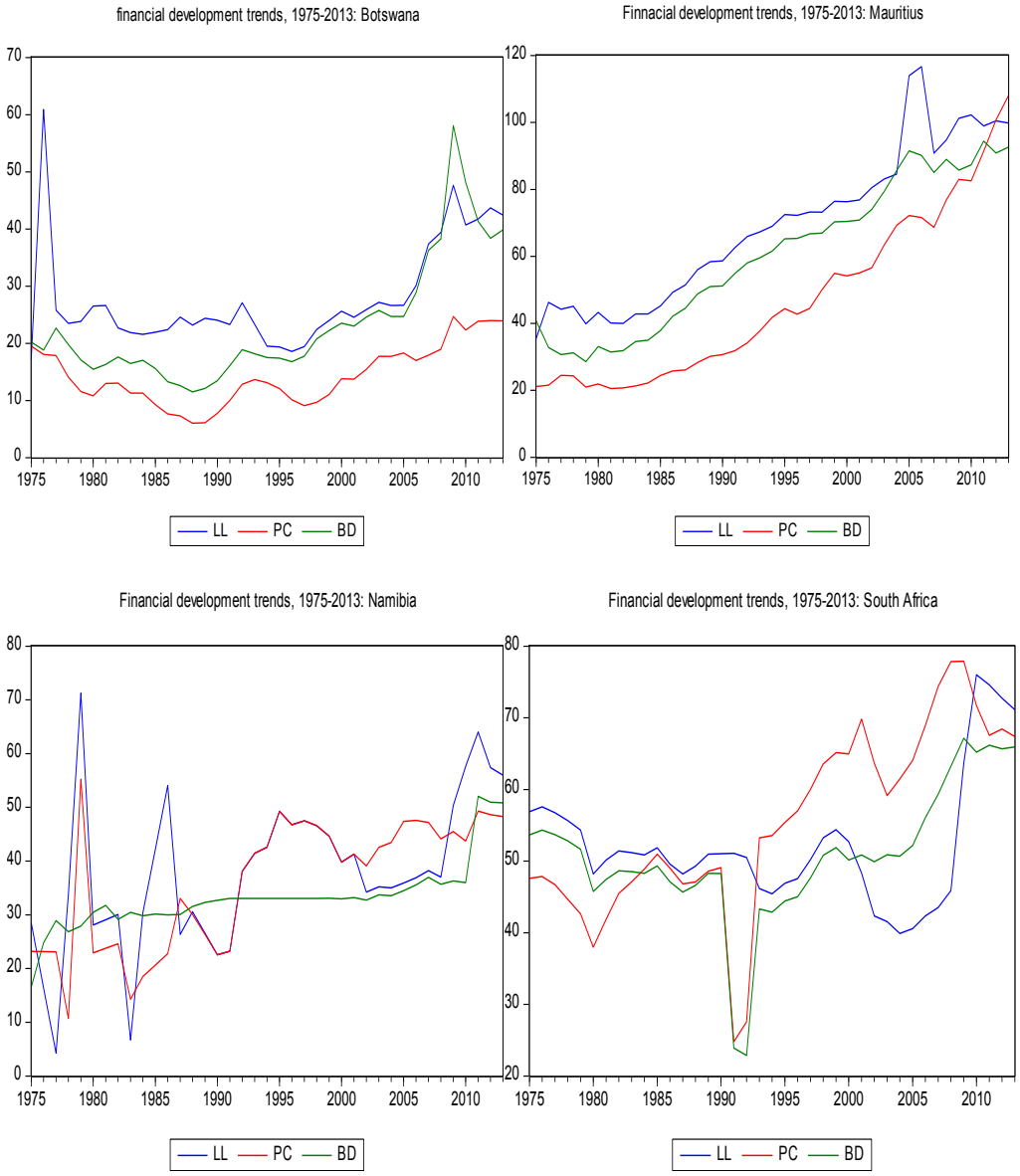






Source: Center for Systemic Peace, 2014

Figure 1b, financial development trends[5]: upper middle income countries



Table[6] 1a Average authority values: Upper middle income

	Botswana	Mauritius	Namibia	South Africa
Before 1990	5.63636	8.66667	0	3.63636
After 1990	6.9697	9.09091	5.45455	7.05628
Whole (1975-2013)	6.41414	8.91414	5.45455	5.96257

Notes: Higher values of authority represent more democratic regimes based on Polity 2 (democracy minus autocracy) scores

[5] These graphs are drawn by the author using data from the three financial development indicators from 1975 to 2013.

[6] The values in all the tables in this thesis are the author's own calculations.

Table 1b below, show early results on the effect of institutional variables (Polity IV) on FD. A summary of the analysis is reported in table 1c. The results are based on the analysis of z-statistics and probabilities of each regression using all three dependent variables. The results for this income group generally suggest that the powers of the chief executive were not constrained enough before 1990 and become more constrained after 1990 thus playing a positive role in improving FD. Substantive democracy played a positive and significant role in improving FD after 1990 though its role before 1990 was positive but not significant while the role of procedural democracy has generally been negative and insignificant. Autocracy was negative before 1990 and became positive after 1990 suggesting that the decrease in autocracy may be playing a positive role for FD. These results on the whole seem to correlate with the observed trend in FD as explained by the institutional variables.

Table 1b, early results on the effect of institutional variables (Polity IV) on financial development.

		Dependent variables	
Explanatory variables	**Bank deposits**	**Private credit**	**Liquid liabilities**
Autocracy (1975-1990)	0.24(0.63)	-0.05(0.84)	-0.33(0.83)
Executive constraints (1975-1990)	0.04(0.63)	-0.15***(0.00)	-0.83***(0.00)
polity IV (1975-1990)	-0.01(0.90)	-0.03(0.43)	-0.60***(0.01)
S Polity IV (1975-1990)	0.04(0.63)	0.03(0.57)	0.53***(0.01)
R^2	18	21	17
Autocracy (1990-2013)	0.17(0.62)	0.05(0.72)	-0.41(0.11)
Executive constraints (1990-2013)	0.16**(0.03)	-0.11*(0.16)	0.77***(0.00)
polity IV (1990-2013)	0.01(0.81)	-0.02(0.11)	-0.14***(0.00)
S Polity IV (1990-2013)	0.17***(0.00)	0.24***(0.00)	-0.66***(0.00)
R^2	17	16	10
Observations	151	151	151

Notes: The table shows robust OLS regressions for the cross-section of upper income countries. The specifications include a constant but the estimates are not reported on the table.: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. All variables are defined as in section 4.3 above.

Table 1c, summary of regression results – upper middle income countries

1975-1990	
Autocracy	Negative and insignificant
Constraint on executives	Negative and significant
Procedural democracy (Polity)	Negative and insignificant
Substantive democracy (S Polity)	Positive and insignificant
1990-2013	
Autocracy	Positive and insignificant
Constraint on executives	Positive and significant
Procedural democracy (Polity)	Negative and insignificant
Substantive democracy (S Polity)	Positive and significant

2.2.2 Lower middle income countries

LESOTHO – NATIONAL STRATEGIC DEVELOPMENT PLAN 2012-2017

The strategic framework for financial improvement generally recognises the importance of the financial sector in the social and economic development process. Based on the recommendations of the African Development Bank Group (2013) on the weaknesses of the financial sector, the plan identifies systemic reforms to mitigate a very low financial intermediation, under-developed money and capital market, a financial sector that is highly concentrated with limited competition, financial exclusion and a weak legal and regulatory framework . It is in this vein that measures will be taken to harness the sector's full potential so that it can facilitate and support economic growth and development in Lesotho. According to the National Strategic development Plan (2012), the strategic objectives and actions that are being taken to improve the financial sectors' direct and indirect contribution to Lesotho's growth and development include; improving financial stability and soundness by, amongst other things, strengthening the regulatory and supervisory framework to deal with risk and minimise external shocks; increase access to financial services by, for example, operationalising the credit guarantee scheme, the national identity system and the credit bureau; enforcing effective administration of new land laws and leasing laws so that land could be used as collateral; and strengthening the legal framework and operations of the commercial court to improve contract enforcement (Central Bank of Lesotho, 2012).

The National Strategic development Plan (2012) outlines specific strategies to improve financial sector development. These include: increasing the alternatives for mobilising financial resources by facilitating the development of financial and capital markets and exploring the possibility of establishing diaspora bonds and other investment instruments to finance development; promote the establishment of low cost and competitive savings instruments with stable returns and long-term contractual savings for investment so as to inspire the savings culture in Basotho; and establish an automated clearing house with the necessary infrastructure in an endeavour to improve efficiency of the financial sector.

From the above strategies, one can deduce that there are steps towards improving FD at the national level. Government's effectiveness in creating an enabling environment for these policies to be implemented is crucial and we contend that it is through democratic dispensation that the government would be able to effectively implement such policies. Based on the Polity IV report on institutional democracy, Lesotho performed rather poorly

with an average of 0 on 10 from 1970 to 1992 and improved dramatically to 8 from 1993 to 2013 as a result of its autocracy score falling to 0 during this period. A possible reason could have been its improvement in democratic governance. However, the trends suggest some volatility in FD up to the year 2000 and thereafter showed some slight stable improvement. The average authority values for the period 1975-2013 for Lesotho is -0.35 (see table (ii)a below), a value far below our threshold of 6, justifying why this country is far from achieving substantive democracy. The value improved from -6.36 between 1975 and 1990 to 3.93 between 1990 and 2013, suggesting improvements in democratisation but at the procedural level.

In the World Democracy Audit report (Freedom House, 2011), Lesotho is ranked above average, at 57 out of 150 countries and 8th in the African Union (World Democracy Audit, 2011). This indicates relatively good performance in terms of protection of political rights and civil liberties. Lesotho's rankings for press freedom and handling corruption are 62 and 58 out of 150 and 149 countries, respectively. These improvements of late may be reflecting positively in its FD strategies.

SWAZILAND NATIONAL DEVELOPMENT STRATEGY – VISION 2022

The main focus of Vision 2022 is to achieve a significant improvement in its human development indices by relying on a political environment that is stable; ensuring social justice; and sustainability in its economic development.The National Development Strategy (1999) identifies key macro strategic areas which include: effective management of the economy, empowerment of its people economically, improve on the development of human resources, agriculture and industries, channel more resources into research and development and the management of the environment. According to National Development Strategy (1999) the strategies within the different sectors of the economy include: the management of the public sector, macro-economic management, the development of physical infrastructure, agricultural development, land and rural development, the provision of economic services, education and training programmes, the health of the population and the general welfare of society at large.

From the above, the study deduces that the major strategies being recommended for the financial services sector passively relates to credit, monetary co-ordination, efficiency and empowerment. No in-depth implementation strategies are provided. Weak governance and corruption was a key factor behind the 2011 fiscal crisis. This correlates with Polity IV scores for the country – achieving a 0 on 10 for the period 1975-2013, with a combined polity score

ranging between -10 and -9 during this period. The authority mean values are negative for all periods – before 1990 it stood at -9.0 and after 1990 it is -8.3 (see table 2a) an insignificant improvement, suggesting a very weak institutional democracy, at best at the procedural level which could be impacting negatively on FD in the country.

ZAMBIA FINANCIAL SERVICES DEVELOPMENT PLAN – VISION 2030

Major reforms of the economy were introduced in Zambia in the 1980s and 1990s following deterioration in the standards of living and economic performance. Despite these reforms, challenges that come with an expanding and more a diversified economy are still being experienced amidst widespread and growing poverty levels (Ministry of finance and national planning, 2011)

A poverty reduction strategy was introduced in 2002, motivated by the recommendations of the Poverty Reduction Strategy Paper (PRSP) after identifying certain obstacles impeding economic development. One of the sectors identified was the financial sector and its limited contribution to growth and development of the economy. In the same spirit as the PRSP, the World Bank and the International Monetary Fund evaluated the financial system in Zambia through the Financial Sector Assessment Programme (FSAP), (2011). The following weaknesses in the financial sector were established:

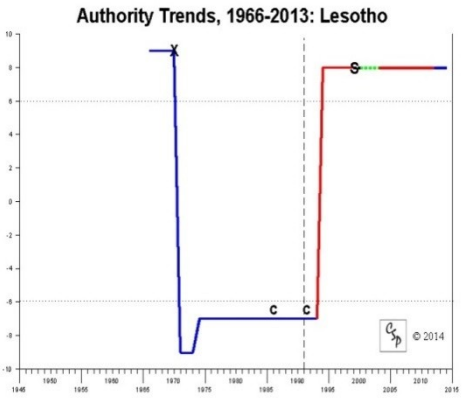
According to the FSAP (2011), the financial system is dominated by commercial banks with a banking environment characterised by very low intermediation; the net interest margin banks and fee income in relation to banks' assets were determined to be among the highest in Africa; banks are highly exposed to systematic risks; the structures in place for a financial safety net are virtually absent; the financial system was still exposed to a very weak supervisory processdespite meeting most international standards;the knowledge and skills required by the financial sector to run efficiently could not be met by the labour market; resources to train supervisory staff are limited; the credit culture of the public is undesirable; the government's huge involvement in the financial led to conflict with stakeholders; administrative inefficiencies and inefficiencies in the process of tax remittances to the central bank of Zambia (BoZ) led to delays causing some float in the financial system; the secondary market activity for securities still remains extremely low; lack of fiscal and monetary policy coordination creates volatility in the inter-bank money market; The central bank of Zambia still uses direct instruments such reserve ratios in its monetary policy implementation framework.**;** huge fiscal deficit financing has created contortions in the financial markets; domestic debt management is poor and unsustainable.

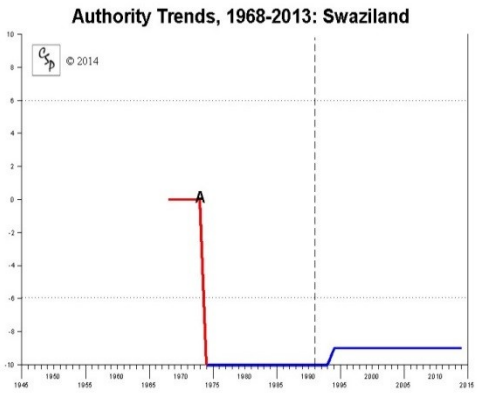
In light of the above, these weaknesses had to be addressed by the FSAP (2011) systematically and coherently to achieve the vision of the financial system. The Zambian financial system is envisaged to develop to more stable, effective and market-based financial system that would ensure efficiency in its mobilisation and allocation of resources necessary to steer theeconomy towards transformation, sustainability in growth and the reduction of poverty (Ministry of Finance and National Planning, 2011).

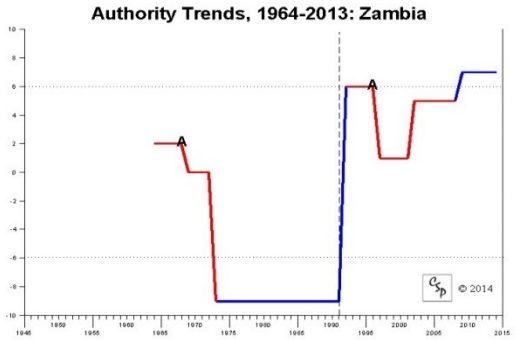
In order to realise effective financial deepening of the Zambian economy, effective democratic governance is crucial. Judging from Polity IV scores for Zambia on institutional democracy, the country has had some wavering democratisation. From 1975-1990 the score was 0, with a combined polity score of -9. It improved to 6 from 1991-1995, with a combined polity score of 6, fell to 3 between 1996 and 2000, with a combined polity score of 1. This was as a result of the stalling of the democratisation process since the 1991 elections and institutional failure in the country resulting in the domination of the executive by the ruling party Landsberg (2004). The score, however, improved to 5 between 2001 and 2007 and to 7 between 2008 and 2013, with combined polity scores of 5 and 5, respectively. The average authority values improved from -8.1 before 1990 to 3.5 after 1990 suggesting that Zambia is experiencing democracy at the procedural level. The values for the whole sample period, however, remains negative at -1.3 (see table 2a). Such silhouettes of good and bad governance could have been a cause for the financial sector weaknesses probably leading to its poor growth and development performance.

For all the countries in this income group the FD trends showed some volatility before 1990 where the state of democracy was relatively weak before gradually improving thereafter (see figure 2b below).

Figures 2a, Authority trends: lower middle income countries

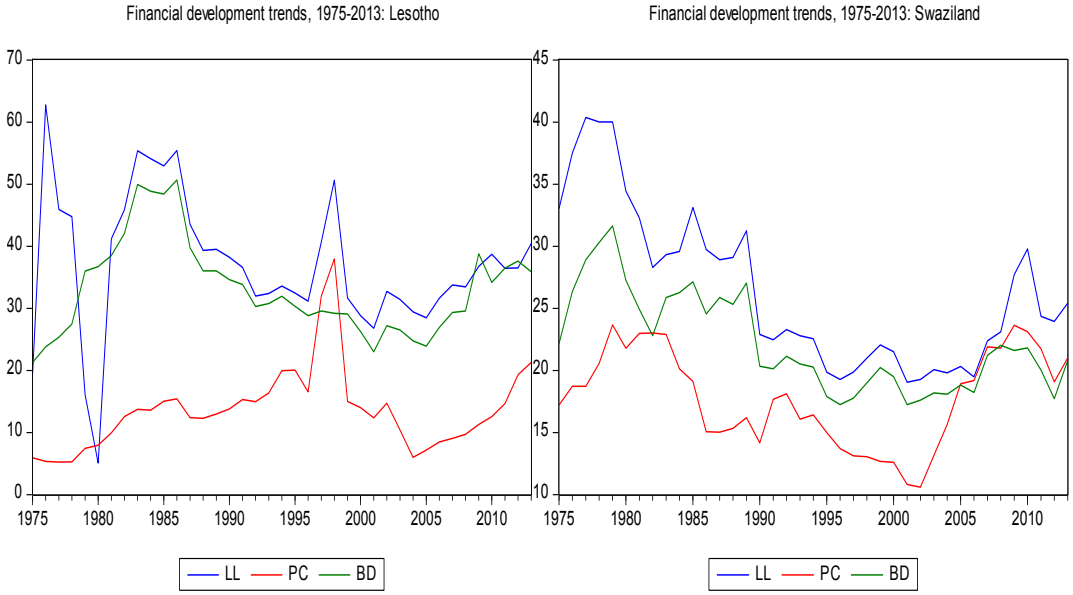






Source: Center for Systemic Peace, 2014

Figure 2b,financial development trends: Lower middle income:



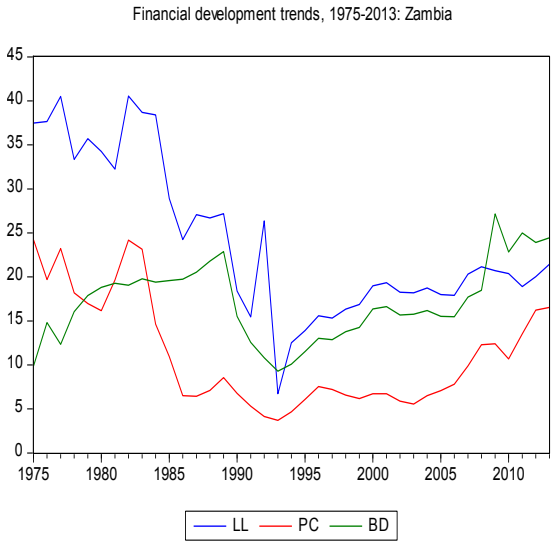


Table 2a, Average authority values: Lower middle income

	Lesotho	Swaziland	Zambia
Before 1990	-6.3636	-9.0909	-8.1818
After 1990	3.93939	-8.3117	3.54978
Whole 1975-2013	-0.3535	-8.6364	-1.3384

Notes: Higher values of authority represent more democratic regimes based on Polity 2 (democracy minus autocracy) scores

Table 2b, early results on the effect of institutional variables (Polity IV) on financial development.

		Dependent variables	
Explanatory variables	**Bank deposits**	**Private credit**	**Liquid liabilities**
Autocracy (1975-1990)	0.15*(0.10)	-0.24(0.38)	-0.09(0.19)
Executive constraints (1975-1990)	-0.17**(0.04)	-0.01(0.95)	-0.01(0.93)
polity IV (1975-1990)	-0.06(0.57)	0.47(0.11)	0.20**(0.01)
S Polity IV (1975-1990)	0.02(0.54)	-0.36***(0.00)	-0.14(0.24)
R^2	09	09	05
Autocracy (1990-2013)	0.06(0.12)	0.14(0.28)	-0.31(0.36)
Executive constraints (1990-2013)	0.03(0.80)	-0.13(0.75)	-0.13(0.71
polity IV (1990-2013)	-0.01(0.72)	0.07(0.56)	0.20(0.08)
S Polity IV (1990-2013)	0.01(0.34)	-0.18***(0.00)	-0.03(0.41)
R^2	10	26	09
Observations	113	113	113

Notes: The table shows robust OLS regressions for the cross-section of upper income countries. The specifications include a constant but the estimates are not reported on the table.: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. All variables are defined as in section 4.3 above.

The results in table 2b above are based on the analysis of z-statistics and probabilities of each regression using all three dependent variables. The results indicate that before 1990 autocracy negatively affected FD and after 1990 the effect on FD is positive. Though the results are statistically insignificant it seems to suggest that decreasing autocratic rule in these countries may be having a positive effect on FD. Constraints on executives are found to be negatively affecting FD for both periods apparently indicating that the preferences of the monarchies (in the case of Swaziland and Lesotho) tend to dominate that of the populace, thereby having a negative effect on FD. As expected substantive democracy

negatively affects FD in both periods and surprisingly the effect of procedural democracy is positive but insignificant for both periods. One may conclude initially that decreasing levels of autocracy and improving democratisation at the procedural level may be having a positive effect on FD while limited constraints on the powers of the executive may be impeding FD, a result that tends to reflect the trend reflected in the graphs. A summary of the regression results is presented in table 2c below.

Table 2c, Summary of regression results – lower middle income countries

1975-1990	
Autocracy	Negative and insignificant
Constraint on executives	Negative and insignificant
Procedural democracy (Polity)	Positive and insignificant
Substantive democracy (S Polity)	Negative and insignificant
1990-2013	
Autocracy	Positive and insignificant
Constraint on executives	Negative and insignificant
Procedural democracy (Polity)	Positive and insignificant
Substantive democracy (S Polity)	Negative and insignificant

2.2.3 Low-income countries

MALAWI GROWTH AND DEVELOPMENT STRATEGY II (GDSII) - 2011-2016

The overall objective of the GDSII (2011) is continued poverty reduction through sustainable economic growth and infrastructure development. The key priority areas include: Agriculture and food security, transport infrastructure, industrial development, mining and tourism, education science and technology, public health, sanitation, malaria and HIV/AIDs management, integrated rural development, child development, youth empowerment, climate change and natural resources and environmental management.

Interestingly, the financial sector is not explicitly mentioned in the document. However, the Malawi Financial Sector Development Strategy was developed in 2007 but key questions remained, namely: how to define and prioritise the various steps, and how the required implementation work will be funded. The Malawian government approached the World Bank's Africa Financial Sector team and after receiving expert advice and recommendations, theysubmitted a FIRST-funded Financial Sector Development Strategy (FSDS). On the premise of the Financial Sector Assessment Programme (FSAP) the entire strategy was finished in 2010. The strategy contained a clear planned out roadmap of actions and procedures that will contribute towards a sound, efficient and inclusive financial sector.

FinScope (2008) identified challenges from the demand and supply side in the Malawian financial sector. The demand side exemplified the degree of the challenges facing Malawi: The study revealed that the financially excluded population of Malawi stands at 55 percent and that only 26 percent of the population with access to finance were formally banked. According to FinScope (2008) acompatible study from the supply side established some key barriers to financial access as: (i) limited access to financial service points (branches and outlets); (ii) high costs of financial transaction; (iii) capacity constraints; (iv) increased government's involvement in the financial sector hence crowding out the private sector; (v) public-private initiatives in the financial sector are not co-ordinated and harmonized by the market to ensure better access to financial services.

The government of Malawi in its GDSII (2011) recognises that broad-based growth and development flourishes with good democratic governance. This also holds for FD in the country with recognition of a framework necessary to improve FD. Polity IV scores of democratic governance for Malawi portrays weak but improving democratic governance from 1975 to 2013. The country obtained a 0 score from 1975 to 1993, improved to 6 from 1994 to 2000, fell to 5 between 2001 and 2002, was 6 in 2003 and 7 in 2004 and fell to 6 between 2005 and 2013 (see figure 3a). The average authority values for the whole period is negative at -1.8 showing generally high levels of autocracy. However, the values improved from -8.1 before 1990 to 2.6 after 1990 (see table 3a) suggesting improved levels of democratisation but at the procedural level. One may contend that wavering democratisation in the country may have been contributing to the low and volatile levels of FD (see figure 3b below).

MOZAMBIQUE – FINANCIAL SECTOR DEVELOPMENT STRATEGY, 2010-2020

According to the Financial Sector Development Strategy (FSDS), (2010), the Mozambican government recognises that the country's financial inclusion ranks among one of the lowest in the SADC region and over the past two decades the government has completed several initiatives with the intention to boost and deepen the financial sector. The strategy identifies two factors that may have contributedto the lack of progress in increasing financial access:

The first impediment is structural in nature and relates to limited financial intermediation as a result of weak credit culture and the increased costs and risks that limit the provision of financial services. The absence of adequate or poor physical infrastructure, lack of the use of technology in the provision of financial services, a legal and regulatory framework that is weak, inadequate reporting by non-bank financial institutions and difficulties with credit information facilities and framework to ensure effective credit enforcement.The second hindrance relates to: a banking sector that is not competitive, high fixed expenses and

interest spreads, and high gloomybank services fees. These tend to reduce the impetus to intermediate deposits into loans and increase borrowing costs (FSDS, 2010)

The government in its FSDS (2010) plan aims at achieving the following for both the bank and non-bank financial sectors:Use monetary policy to achieve financial stability, improve on regulatory and supervisory framework and financial sector safety nets; improving financial access through various financial sector development policies such as national financial inclusion policy, competition policy, financial literacy, consumer protection programme and financial sector research and financial sector infrastructure. Non-bank financial sector development, these include the pension sector, insurance, capital market development and the micro finance sector.

The Mozambican government's recognition of the crucial and positive role that financial deepening contributes towards growth and development cannot be overemphasised. Again, government's role in creating an enabling financial environment may depend very much on the state of democracy in the country. According to Polity IV scores, the state of democracy in the country has slightly improved: from a score of 0 from 1975-1993 to 5 from 1994 – 2013. From 1975-1993 the combined polity score ranged between -8 and -6 indicating the level of autocracy during this period but from 1994-2013 its Polity IV scores improved to 5. (See figure 3a below). The average authority values in table (3a) indicate that for the whole sample period (1975-2013) democracy has been weak (negative value of -1.4). Before 1990 the value was -7.0 and improved to 2.5 after 1990 suggesting that this country's democracy is at best procedural. Trends in FD shows some remarkable improvements after some high volatility before 1990 (see figure 3b below) indicating that improving its democratic governance is paramount in achieving the goals spelt out in its financial sector development strategy.

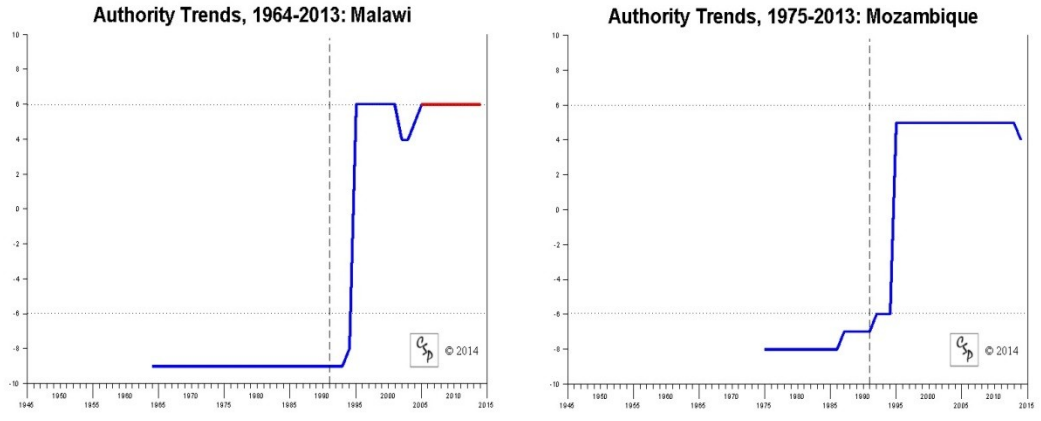
ZIMBABWE – MEDIUM TERM PLAN (MTP)-2011-2015

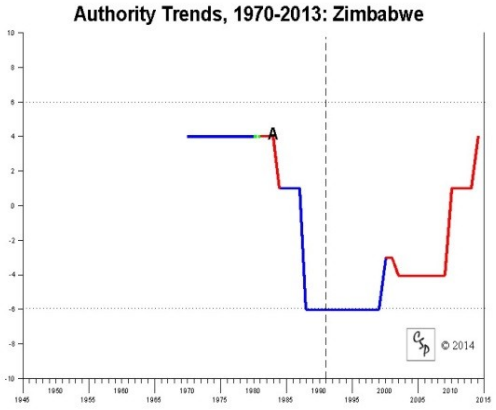
The MTP (2011) is an economic development strategy that is supposed to guide all other government economic policy blue prints and set out clearly the national priorities from 2011 to 2015. According to the MTP (2011), the economy of Zimbabwe faces the following pivotal structural problems: The sovereign risk profile of the country is threatened by economic and political uncertainties; high rates of unemployment, poverty and highly conspicuous income gap; increasing 'informalisation' of the economy; poor infrastructure; and an economy with very low savings and investments that negatively impact on growth.

The vision of the MTP (2011) is enhancing a democratic developmental state anchored by a growing and transferring socially just economy. However, the institutions for democracy (participation, social dialogue, transparency and accountability) are very weak. The plan does not explicitly state strategies for financial sector development especially how financial inclusion will be achieved, considering that about 80 percent of Zimbabwe's population is unbanked. This could be due to the de-facto dollarisation of the economy and loss of monetary policy independence.

Political and regulatory ambiguity could be hindering the development of the financial sector and its contribution to economic growth. Polity IV scores for institutional democracy in Zimbabwe portrays a gradual decline from 1975 to 1998 (A score of 7 between 1975 and 1978, 5 between 1980 and 1982, 3 from 1983-1986, 0 between 1987 and 1998. It increased to 1 between 1999 and 2008 and 3 between 2009 and 2011). Corresponding to the above dates, the combined polity scores were 4, 1, -6, -3, -4 and 1 respectively (see figure 3a below). The average authority values are negative after 1990 (see table 3a below) suggesting increasing autocracy. Clearly, the country's degenerating state of democratic governance may be having serious negative repercussions FD as indicated in figure 3b below.

Figure 3a Authority trends: low-income countries





Source: Center for Systemic Peace, 2014

Figure 3b Financial development trends: Low-income

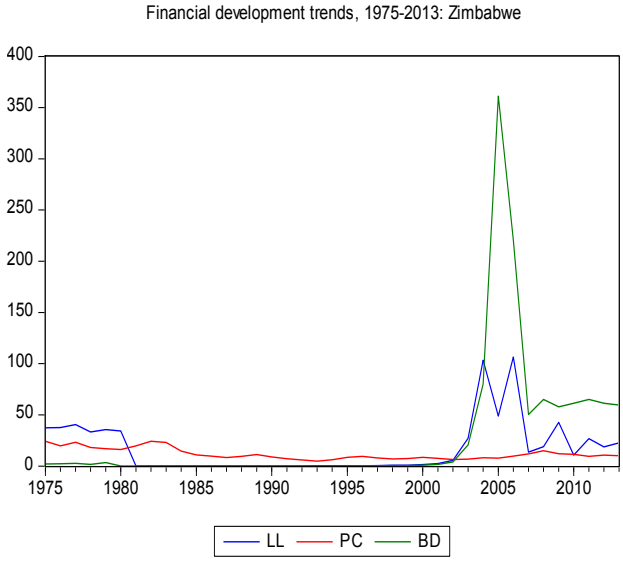


Table 3a, Average authority values: Low-income

	Malawi	Mozambique	Zimbabwe
Before 1990	-8.1818	-7.0303	0.84848
After 1990	2.68398	2.5974	-3.8961
Whole (1975-2010)	-1.8434	-1.4141	-1.9192

Notes: Higher values of authority represent more democratic regimes based on Polity 2 (democracy minus autocracy) scores

Table 3b, early results on the effect of institutional variables (Polity IV) on financial development.

Explanatory variables	**Dependent variables**		
	Bank deposits	**Private credit**	**Liquid liabilities**
Autocracy (1975-1990)	-1.2***(0.00)	-1.9***(0.00)	-0.23(0.54)
Executive constraints (1975-1990)	0.13***(0.00)	0.14***(0.00)	-0.13***(0.00)
polity IV (1975-1990)	-0.17(0.60)	-0.37(0.39)	-1.5***(0.00)
S Polity IV (1975-1990)	-0.52*(0.08)	-0.02(0.60)	-0.42(0.17)
R^2	30	21	41
Autocracy (1990-2013)	0.14(0.42)	0.20**(0.02)	-0.08(0.84)
Executive constraints (1990-2013)	0.09(0.20)	0.07(0.65)	0.41(0.36)
polity IV (1990-2013)	-0.13*(0.09)	-0.24(0.03)	0.04(0.78)
S Polity IV (1990-2013)	-0.04(0.17)	-0.04(0.26)	-0.04(0.81)
R^2	14	12	07
Observations	113	113	113

Notes: The table shows robust OLS regressions for the cross-section of upper income countries. The specifications include a constant but the estimates are not reported on the table.: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. All variables are defined as in section 4.3 above.

We analyse table 3b above using the z-statistics and probabilities of each regression with all three dependent variables. The results in table 3b above show how autocracy was negatively affecting FD before 1990 and having a positive effect after 1990 suggesting that decreasing autocratic rule (except for Zimbabwe, the outlier for this income group) could be contributing positively towards FD. Constraint on the executive powers of the chief executive is positive for the two periods, an institutional factor that may have a positive effect on FD.

However, both substantive and procedural democracies have been negative for both periods though statistically insignificant. These results suggest that the decreasing levels of autocracy coupled with constraint on executive powers of the chief executive may have been positively affecting FD after 1990 thus seemingly matching FD trends for this group of countries. Another possible explanation could be that those in power may have carried out policies that are positive for FD, thus masking or reducing the negative effects of undemocratic rule on FD. A summary of the results is presented in table 3c below.

Table 3c, Summary of regression results – low-income countries

1975-1990	
Autocracy	Negative and significant
Constraint on executives	Positive and significant
Procedural democracy (Polity)	Negative and insignificant
Substantive democracy (S Polity)	Negative and insignificant
1990-2013	
Autocracy	Positive and insignificant
Constraint on executives	Positive and insignificant
Procedural democracy (Polity)	Negative and insignificant
Substantive democracy (S Polity)	Negative and insignificant

2.3 Conclusion

The chapter looks at the different strategic policies instituted by each country's authority to improve the levels of FD in their respective economies. The depth of each country's policy design and implementation suggest that FD is recognised as sacrosanct by authorities and as a means of achieving growth and development. In addition, the authorities in the countries under study do recognise the importance of political stability both within each country and in the region to be in place to achieve their various growth and development targets. Based on these, the study introduces trends in authority and how they could be affecting the trends in FD for each income group. FD in all income groups generally shows an upward trend with less volatility after 1990, a period where countries in the region experienced varying levels of democratisation. The average authority values (Polity IV scores) are used to determine whether each country's democracy is substantive or procedural for the period under study. Robust OLS regression[7] results tend to roughly support the trends in authority and FD, a result considered as early because of the exclusion of control variables and other more robust estimation techniques to achieve the objectives of the study. We now proceed and review the theoretical and empirical literature on the determinants of FD with a focus on the institutional determinants on the next chapter.

[7] Robust MM estimations are applied to mitigate the effects of outliers in the data.

CHAPTER 3

LITERATURE REVIEW

3.1 Introduction

A financial system embraces banks, financial markets and other financial intermediaries such as pension funds and insurance companies which are regulated and supervised by the central bank. Levine (1997) contends that financial markets, instruments and institutions mitigate the effects of the cost of information and transaction which according to Merton and Bodie (1995) helps to facilitate the allocation of resources across time and space in an uncertain territory. The role of financial sector is pivotal in the functioning of the economic system. Merton and Bodie (1995) contend that by utilising productive resources to facilitate capital formation through a wide range of financial instruments, it meets the various demands of surplus anddeficit units thereby mobilising saving for investment purposes. The financial system, therefore, ensures efficientresourceallocationacross the different sectors of the economy.

We consider in this study a broader definition of FD suggested by $\mathcal{C}$ihαk, Levine, Feyen and Demirguc-Kunt (2013) – one that involves improvements of five key financial functions: (i) engaged in the production and handling information about possible investments and distributing capital based on the information obtained; (ii) systematically checking individuals and firms and balancing the interest of stakeholders after allocating capital; (iii) Promoting trade, diversification and mitigating risks; (iv) Marshalling and putting together savings; and (v) Easing trade of goods, services and financial instruments. We contend thatthe chosen proxies of FD are closely linked to this definition; credit provided to the private sector and bank deposits as proxies are closely linked with (i), (ii) and (iv) above. Savings are mobilised by financial intermediaries, the bulk of which are channelled towards investment purposes. Financial intermediaries would monitor and assess individuals and firms to mitigate the asymmetric information problems of adverse selection and moral hazard. The problems created by asymmetric information are major impediments to well-functioning financial markets Mishkin (2016). Various financial instruments are used to facilitate trade between financial intermediaries and individuals and firms. The amount of deposits received and loans provided would depend on the size of financial intermediaries respective to the economy of where the central bank plays the crucial role of monitoring.

Financial sector development is important in achieving the growth objectives of any economy. Ang (2008) points out thatinnovation andthe accumulation of human and physical are viewed by growth theory as the principal determinants of economic growth with minimal

attention given to the financial sector. Ang (2008) asserts that this is a seemingly an inaccurate conclusion since a strong financial system is essential to the strong foundations of the economy and any policy designs to improve on economic development would be inadequate without taking into consideration the development of the financial sector. We argue that the development of the financial sector depends on the quality of institutions of the country in question which is brought about by democracy. This suggests that the emergence of democratic institutions in the SADC region, though weak Landsberg (2004), could be spurring FD and that policy makers can target institutional quality for FD to improve.

Empirical growth studies have increasingly supported, though with different degrees, the importance of FD on economic growth. While there is evidence according to Huang (2010) that there exist a positive relationship between FD and economic growth, the questions of what determines FD and how to develop financial markets is crucial and still remains underresearched and requires more attention by researchers. On the factors that cause of FD, the importance of institutional advancements for FD has been implicitly indicated by Clague, Keefer, Knack, and Olson (1996) and Olson (1993) who argues that, as opposed to autocracies, democracies directly stimulates investments through a betterprotection of the rights to property and the enforcement of contracts. Huang (2010) finds that the depth of democracy is crucial in affecting FD and that the quality of institutions has positive short run effects on FD in developing nations of French legal origin or when they are ethnically divided.

In this chapter, we begin by reviewing the functions of financial systems in relation to how these functions have been performed following the process of democratic consolidation of the countries in the SADC region. According to Joubert (2008), the entire African continent and the SADC region in particular, has made tremendous strides towards multi-party democratic governance and is now in the stage of consolidation, though the region still faces a plethora of democratic deficits which may be threatening the endurance of the consolidation process. We provide some preliminary evidence on the effect of democratic passage on FD by assessing to some extent how efficiently these functions have been performed following democratic transformation in the region. This would be valuable in shedding more light on the need for FD in the region. We discuss the empirical literature on the progression of thought on finance and institutions and their relevance in the SADC region, a research area conspicuously absent in the studies of finance and growth in the region. In essence, we explore the move from finance-led growth theoretical and empirical studies to the institutional determinants of FD.

3.2 The Functions of Financial Systems

The development or maturity of a financial system could be judged from how efficient they perform the functions of resource allocation, (Grossman & Stiglitz, 1980, Boyd & Prescott, 1986), mobilisation of savings (Sirri & Tufano, 1995), improving diversification and risk reduction (Gurley & Shaw, 1955, King & Levine, 1993), facilitating transactions (King & Plosser, 1986) and monitoring borrowers and exercising corporate control (Jensen & Meckling 1976, Grossman & Hart, 1980). Empirically, these views gained considerable support with the use of cross-country and firm level data. Evidence can be drawn from the works of Gerschenkron (1962), Goldsmith (1969), McKinnon (1973), King and Levine (1993), Levine and Zervos (1998), Levine (1998), Beck, Levine and Loayza (2000a), Rousseau and Wachtel (2000), Beck and Levine (2002), Arestis, Demetriades and Luintel (2001), Rajan and Zingales (1998), Demirguc-Kunt and Maksimovic (1998).

These views demonstrate how mature financial markets can improve the prospects of growth by efficiently performing the above functions. What determines the development or maturity of a financial system in order for them to efficiently perform these functions remains untested in the SADC region. The efficiency in which these functions have been performed by financial institutions in the SADC region would suggest whether the countries under study require more effective policies in place to improve development in the financial system. We argue that the effectiveness of these policies would very well depend on governance of the country in question and effective governance may only be achieved through effective democratic consolidation. Joubert (2008), in a study uses four key variables to assess democratic governance in the SADC region which explicitly match the hallmarks suggested by Matlosa (2006). These include: representation and accountability; citizen participation; local governance; economic management and corporate governance. These generally match variables of the combined polity score obtained from the Polity IV Database. The functions of the financial system include:

3.2.1 Mobilising savings

According to growth theory by Gurley and Shaw (1955), the twointerrelated avenues through which FD can affectgrowth are the capital formation and the productivity of the factors of production channels. Gurley and Shaw (1955) suggest that the investment route focuses on the ability of the financial sector to overcome rigidities through mobilisation of savings which are then channelled for investment purposes in the sectors of the economy that require them. The process increases capital formation and higher levels ofeconomic growth. Wicksell (1935) holds the view that the proper synchronisation of the saving and investment

decisions of firms and households are executed by financial markets and intermediaries. Wicksell (1935) concludes thatfinancial systems induce mobilisation of savings by putting together the diverse saving of consumers and channelling the funds via lendingto firms to finance investment projects.

The SADC (2006) protocol on finance and investments sets out policies for FD in the region. It emphasises the need for liberalisation of the financial sector, by allowing key instruments such as interest rates and credit distribution to be determined by the market. Escalating the extension of credit to viable investment projects especially to small and expanding firms has been one of the common objectives of each country's FD strategic plan. To induce mobilisation of savings, these countries have designed policies in place to accommodate the financially excluded sections of the population. Increased liberalisation since 1990 has yet to address significantly the region's level of savings. The World Bank (2013) report on Gross Domestic Savings (GDS) and Domestic Credit Supply (DCS) as a percentage of the GDP indicates that in the SADC region, the upper middle income countries attained an average of 22.99% for GDS and 69.54% for DCS., with an average negative saving rate of -7.53% and 13.97 for DCS for the lower middle income countries and an average GDS of 3.77% and 13.84% for DSC obtained by low-income countries.[8]

According to Moyo, Sill and O'Keefe (2014), many contributing factors other than financial policy, such as lack of infrastructure, labour issues and political instability (in some of the countries, e.g. Zimbabwe) have all impacted negatively on economic development in the region. These factors are seemingly hindering the FD policy implementation process, thereby having a negative effect on FD itself. We argue that to effectively mobilise savings, the financial system must have attained a certain level of development which in turn is determined by effective governance, brought about by substantive democracy.

On the aspect of socio-political instability consensus has not been reached on its effect on development. For instance, Huntington (1993) notes that instability can inhibit political development before a government are able to fully develop conflict resolution institutions. Olson (1982) contends that instability can be good for development because it breaks up the power structure, and allows for a more efficient set of institutions to develop. Venieris and Steward (1987) theorise that instability breeds uncertainty which lowers savings, capital accumulation and subsequently growth. We assert that instability, a brainchild of poor governance inhibits saving mobilisation and hence the development of the financial sector.

[8] The determined averages are the author's own calculations. According to the World Bank (2015) classification, the upper middle income SADC countries include; Botswana, Mauritius, Namibia and South Africa. The lower middle income countries include; Lesotho, Swaziland and Zambia. The low income countries include; Malawi, Mozambique and Zimbabwe.

3.2.2 Allocating resources

Tobin and Brainard (1963) qualitatively presents the total factor productivity channel, which underscores the part, played by technological innovations in decreasing information asymmetries that impede efficient financial resources allocation and properwatch over investment projects. This view is shared byTownsend (1979); Greenwood and Jovanovic (1990); King and Levine (1993b); $\mathcal{C}$ihαk, Levine, Feyen and Demirguc-Kunt (2013), among others.

Efficient allocation of resources is realised in a well-functioning financial system. Tobin and Brainard (1963) contend that entrepreneurs are in a better position to obtain credit at lower interest rates and on more favourable terms when they are capable of assessing their investment projects.This are made possible by financial intermediaries. Diamond (1984) notes that information acquisitioncosts create the need for financial middlemen wherebycooperation between individuals or groupswith financial intermediaries economise on costs associated with both obtaining and handling information about investment opportunities and their corresponding returns thereby improving resource allocation.

According to the SADC Protocol on Finance and Investment (2006), SADC policies are geared towards encouraging more efficient resource allocation by engaging in strategic FD policies and encouraging investment. Policy reforms and investment strategies undertaken in member states have generally improved the business environments of each member state in the following aspects: the creation of agencies that promote investments; ensuring that investors are protected and ensuring more clarity in terms of investment codes and practices (SADC, 2006).As a consequence of the fact that there is increasing investment competitiveness among the member states, agreeing on an investment policy regionally has often reached a deadlock where member states feel that coordination of such policies may not be of the best national interest (SADC, 2006).

Bagehot (1873) argues that appropriate organisation of savings can promotethe efficient allocation of resourceswhich will eventually stimulate technological innovation, a crucial requirement for attaining higher growth rates. We argue that a necessary ingredient for resource allocation stems from financial sector development where according to Levine (1997) capital from disparate savers or surplus units are amalgamated for investment purposes. We contend that the financial system starts the process of resource allocation and only a developed financial system would guarantee efficient resource allocation. An important determinantofa developed financial system in any country is effective governance brought about by democracy. We suggest that if the democratic credentials of a country are

not in place, it may impact negatively on the mobilisation of savings, resource allocation and finally on FD.

This function of financial institutions could be linked to political development via the actions of civil society. Civil society is an interesting dimension of political development and exerts much influence in both politics and markets (Scholte, 2000). Diamond (1994) asserts that civil society is the space where the population can share experience, promote their interests, learn the values of civility and build trust. He stresses that civil society is autonomous from the state and self-supporting. More importantly, civil society is an essential component of viable democracy. Helliwell and Putnam (1995) in a study of civic organisations in Italy find that the strength of these organisations is positively associated with growth. White (1994) investigates the relationship between civil society and the recent wave of democratisation in developing countries. The study highlights the ambiguity of the term 'civil society' and proposes a definition which may prove serviceable in discovering the political role played by civil society in facilitating or impeding democratisation. Fukuyama (2001) asserts that social capital is an externalized informal standard that enhancescollaborationamong individuals. He points out thatin the economic sphere it reduces transaction costs and in the political sphere it promotes the kind of associational life which is necessary for the success of limited government and modern democracy. We argue that the purpose of civil society demands is ultimately to increase their access to financial resources and their effective use of these resources through investment[9]. The power and influence of civil society depends on the level of democracy in the country. This suggests that civil society, a vital component of democracy could influence resource allocation and hence FD.

3.2.3 Risk Amelioration

Financial institutions may evolve to facilitate risk amelioration arising from the presence of information and transaction costs. The two types of risks associated with information and transaction costs are liquidity and idiosyncratic risk and thatuncertainties involved with converting assets into a medium of exchange is associated with liquidity risk (Levine, 1997). Following a similar thought, Fukuyama (2001) contends thatinformation and the cost of transactions may impede liquidity and exacerbate liquidity risk. He further asserts that market frictions necessitate the establishment of financial markets to bolster liquidity, hence creating liquid financial markets that make trading of financial instruments less costly. Stiglitz

[9] We assume that a "happy" civil society is one that has been empowered through education and training. Such an empowered society can easily access financial resources and effectively use these resources contributing positively towards the development of the financial sector. The inclusion of school enrolment as a proxy for human capital development is thus crucial as a control variable which arguably signifies the quality of civil society of the country in question.

(1985) is of the viewthat high liquidity accelerates investment returns, minimises uncertainty and ultimately generates more growth. Bencivenga and Smith (1991) assert that amelioration of liquidity risks faced by individuals facilitates investment activities and helps to avoid liquidations. In a nutshell, the financial systems theory holds that enhanced liquidity stimulates savings rates and eventually the rate of economic growth.

On the other hand the emergence of financial markets helps to curb idiosyncratic risk, a type of risk associated with projects, firms and industries at the microeconomic level (Saint-Paul, 1992 and Obstfeld, 1994). An efficient financial system facilitates the diversification of portfolios in order to hedge against risks. Levine (1997) contends that various financial markets such as banks, security markets and others extend a channel through which trading, pooling and risk diversification can be realised and that risk diversification of services earned from financial systems can positively influence economic growth in the future by changing resource allocation and savings rates. Saint-Paul (1992) and Obstfeld (1994) suggest that financial markets which can ease risk diversification tend to instigate portfolio shifts in favour of projects that yield higher expected returns and hence greater risk-sharing makes for the efficient allocation of capital which stimulates savings and investments and hence growth.

We argue that for enhanced liquidity and portfolio diversification to be achieved within and across countries, the financial system must be efficient to ensure increases in saving and investments. Diversifying portfolios in different countries will depend on how politically stable these countries are. Democratically stable economies would propagate a faster development of the financial system and ensure the gains of diversification. It ensures a climate of transparency of rules and regulations, a legal system that guarantees property rights and contract enforcements and a system void of corruption. According to a survey by the Rand Merchant Bank (2012) on the challenges of doing business in SADC, lack of qualified human resources, crime and corruption, lack of transparency of rules and regulations, as well as the legal environment were perceived, among others, as serious challenges. These may apply to different SADC member states in varying degrees with South Africa, Zambia and Mauritius having the most developed regulatory framework in the region Rand Merchant Bank (2012). These challenges may be signalling poor democratic governance in the countries in question, which may have serious negative implications on FD and their financial systems in performing the function of risk amelioration. This may also impede the process towards financial integration.

Brown (2008) argues that independent financial markets can reduce risk in a way that government policy cannot because the government is a source of risk. We argue that good

governance reduces instability and would ensure proper functioning of financial markets. Brown (2008) also suggests that better developed financial markets are a product of democratically stable economies where there are better opportunities for individuals and firms to reduce any consequence of instability on their savings and investments. In a stable and democratic economy institutions that:are characterised by well-defined and established laws, protect the rights to ownership of propertytogether with the proper implementation of contracts and effectively constraintthose in power would ensure that a variety of instruments are available to savers and investors that may allow them to hedge their investments. As such it becomes less likely to reduce or revoke their stake in any investment and hence keeping the level of investments stable and limiting the negative economic effects. This feeds back into the FD process and improves FD. Amidst a bank run or speculative attack or any form of financial crises in general, it would be within the realm of state intervention through the appropriate institutions that stability could be brought back to the system – the 2008 financial crisis is a classic example. We, therefore, suggest that risk amelioration by financial institutions may be effective in a democratic setting where there is good governance which may act as an insulating factor to any form of instability in the financial system, hence improving FD.

3.2.4 Facilitating transactions

Apart from curtailing information and transaction costs, Gurley and Shaw (1960) contend that making available credit facilities and ensuring that payments are made facilitate business transactions. Transforming primary securities into indirect securities is the main function of financial intermediaries and taking advantage of economies of scale in the process profits are generated through lending and borrowing. According to Ang (2008) financial intermediaries lower the cost of searching and obtaining funds and monitoring borrowers which ultimately decreases the cost of obtaining information and hence greatly easing transactions. Following the same train of thought, Levine (1997) notes that financial agreements that minimise the cost of negotiations can promote specialisation, technological innovation and economic growth, a view pioneered by Smith's(1776) postulations. Hicks (1969), argues that an important aspect of industrial development is the adoption of technologies requiring highly illiquid capital investments. The adoption of such technologies becomes economically viable in the presence of low cost financial markets that provide liquidity to investors. Bencinvenga, Smith and Starr (1995) hold the same view and contend that by implication the cost of transactions in financial markets affects the equilibrium level of technology and hence growth.

The efficiency of the supply of credit and payments guarantee will depend on how developed the financial system is which in turn depends on the government's policy with regards to developing the financial sector. Every SADC country under study has policies in place towards enhancing the efficiency of the financial sector but with varying levels of financial sector development. According to the World Bank (2013) statistics on domestic private credit from 1990 to 2012, the SADC countries under study portrayed an increasing trend on this aspect. This is the period where most of these countries experienced democratisation. This tends to suggest that good governance brought about by democracy may have been having a positive impact on FD. We may not want to take this observation as conclusive evidence; however, it is strikingly consistent with the data observed.

3.2.5 Exercising corporate control

Apart from risk amelioration and information acquisition, financial markets may come into being to minimise the acquisition of information and administration costs of checking firm managers and exerting corporate control after the financing activity. Financial intermediaries perform the monitoring activity of firms and households by using specialised resources at a much lower cost. Bernanke and Gertler (1989) note that outside investors would be discouraged from borrowing moreif the cost of verifying project returns increase. Hence, the cost of verification may impede efficient investment. Diamond (1984) suggests thatproper financial arrangements with financial intermediariesmay reduce monitoring costs. From the financial market point of view,a managers' performance could be assessed from an estimation of the company's worthbased on stock price movements leading to improved corporate controls, which may bring to bear a positive influence on growth, with a positive feedback effect on FD.

We posit that effective corporate control may be difficult to execute in a hostile environment where the cost of monitoring firms naturally increases, exerting a fall in borrowing. Creating an enabling environment for business by government is therefore imperative and this may be achieved in a democratic setting where the cost of acquiring information and monitoring managers are minimised, hence improving the efficiency of the financial sector. A hostile business environment, probably due to lack of property rights and contract enforcements or the lack of transparent rules and regulations may negatively affect the development of the financial sector and hence effective corporate control.

According to a study carried out by Finmark Trust (2013) in the SADC region on the ease of doing business, among other objectives, the upper middle SADC countries ranked among the first 5 out of 14 countries. These countries have the most developed financial sectors in

the region. The low-income countries are ranked among the bottom 4 – the more difficult places to do business and exhibit the least developed financial sector. These facts suggest, though not tested, that corporate control may be much easier to exercise in the upper middle income countries than in the low-income countries. Though the formal trappings of democracy (holding of elections on time) are in place in these countries, deep-seated governance challenges still face countries in the region, especially the countries falling in the middle and low-income groups. From the above analysis, we infer that the ease of doing business may reflect the level of governance in the country in question which tends to affect corporate control and hence FD.

3.3 From Finance-led Growth to the Institutional Determinants of Financial Development

3.3.1 Finance – growth nexus

The finance and growth nexus was pioneered by the work of Schumpeter (1911) who contends that credit is required by entrepreneurs to finance new production techniques and that banks facilitate the intermediation process and as a consequence promote economic development. Reasoning along Schumpeterian lines are the works of Gurley and Shaw (1955), Goldsmith (1969) and Hicks (1969) who are of the view that increasing saving and investment and ultimately economic growth can be achieved by the creation of many financial intermediaries and a multiplicity of financial products and services.

The Keynesian view was challenged in the 1970s by McKinnon (1973) and Shaw (1973) and popularised by Kapur (1976), Mathieson (1980), Fry (1988), Pagano (1993) who assume that in a classic low income economy investment is financed without credit from financial institutions and can be realisedonly if enough stock pile saving is mobilisedto constitute deposit taking by financial institutions. Then enter the “financial liberation view” where McKinnon (1973) and Shaw (1973) addressed the negative effects of financial repression on GDP growth and called for financial liberation. It is worth noting that the SADC economies experienced a wave of financial liberalisation in the 1990s accompanied by impressive progress towards democratic governance Matlosa (2006). We reason along the same lines with the “financial liberation view” and argue that achieving financial liberation may not be effective without transformation towards democratisation and commitment to democratic rule by governments of the countries under study in the SADC region.

Criticism of the McKinnon-Shaw school in the early 1980s was led by Van Wijnbergen (1982, 1983), Taylor (1983) and Buffie (1984)–These are economists who believe in structural

adjustments in determining goods, output and income achieved through the market forces – they pointed out that financial liberalisation is unlikely to increase the GDP in the existence of informal financial markets, a view supported by Fry (1988) who contends that rivalry and efficiency in informal financial markets is far less compared to commercial banks. Owen and Solis-Fallas (1989) later argue that the claim by neo-structuralists that unorganised credit markets play an important role in executing effective intermediation is highly impracticable. We assert the presence of curb markets is a feature of developing economies in general and the extent of the presence of these informal financial markets could be judged from the percentage of the population that is financially excluded (the unbanked). According to Finmark Trust (2013), of the countries under study, only South Africa, Botswana, Mauritius and Namibia achieved financial inclusion of more than 50 per cent. This suggests that the rest of the population is either formally or informally serviced by the curb market. Generally, the countries in the SADC emphasise in their financial sector development strategic plans, the need for financial inclusion. For this to happen, we suggest that it could only be effective in a democratic setting. We follow Van Wijnbergen (1982, 1983), Taylor (1983) and Buffie (1984) and argue that curb markets may hinder FD in the SADC and that instituting democratic governance in the SADC countries under study, with a harmonised policy of financial inclusion would significantly diminish the existence of curb markets and foster FD. Simply put, if curb markets impede financial liberalisation as suggested by the neo-structuralists, then democratic governance which advocates for financial inclusion may reduce the proliferation of these markets by fostering financial inclusion and thereby accelerating the process of FD.

The 1990s saw the growth of endogenous growth models. A number of papers demonstrate that FD improves the flow of information and others show that it tends to reduce the efficiency of resource allocation when government restrictions are in place. The policy implication of the latter view suggests that the eradication of government impediments may promote growth in the real sector in developing economies (see Greenwood and Javanovic, 1990; Bencivenga and Smith 1991, 1993; Saint-Paul, 1992; King and Levine, 1993b; Pagano, 1993; Bencivenga, Smith and Starr, 1995; Greenwood and Smith, 1997; Blackburn and Hung, 1998). An important extension to the body of knowledge on the relationship between finance and growth have steered the focus of research on the relative benefits of a financial system based on banks and a financial system based on the markets (see Allen & Gale, 1999, 2000; Beck & Levine, 2002; Ergungor, 2004; Levine, 2005).

Studies in the SADC region on the finance-growth relationship have focused mainly on growth models and the value of a financial system based on banks. Allen and Ndikumana (1998) using four indicators of financial intermediation and three panel techniques found a

positive association between FD and GDP per capita. Aziakpono (2003) researched the finance-growth relationship in the Southern African Customs Union (SACU) and his findings suggest that of all the SACU countries examined, South Africa's domestic financial intermediation is the most effective in stimulating growth. Takaendesa and Odhiambo (2007) explored the causal link between finance and growth in two SADC countries – Zimbabwe and Malawi and find a two-way causal pattern between FD and growth in Malawi and none in Zimbabwe. Odhiambo (2005) finds similar results as in Malawi in a study of the causality relationship between finance and growth in Tanzania. In a study of the finance-growth relation of Zambia's economy, Banda's (2007) conclusions corroborates with the findings of Odhiambo (2005) though using a different methodology. Le Roux and Moyo (2015) in a study of 15 SADC countries suggest that the relationship between financial liberalisation and economic growth is a short-run phenomenon and recommends that SADC adopts measures to increase the level of financial openness in the region in order to increase economic growth. In a comparative study of the Economic Community of West African States (ECOWAS) and SADC, Mahawiya (2015) finds that inflation above the threshold of 17.9% and 14.5% respectively for both regions presents statistically significant detrimental effects on FD. In a country specific study of municipalities in South Africa, Obikili (2015) investigates the significance of political competition on economic growth and shows that in democracies, governments with more freedom to make decisions and less threat from opposition political parties are linked with faster economic growth and improvement in the supply of some public goods.

The policy implications of growth models suggest that government restrictions should be abolished to promote real growth. We argue that these restrictions could only be effectively eliminated in a democratic environment and may directly or indirectly positively affect FD - duly recognised by SADC member states in the SADC Treaty (2006) which stipulates that member states shall gradually develop similar values politically, systems and institutions, promote peace and ensure security for all, among others, with the ultimate goal of attaining higher levels of development and economic growth (SADC, 2006).

The above studies in the SADC region generally show the merits of FD on economic growth, while holding political institutions (e.g. democratic governance) as given except in the micro study of political competition in municipalities by Obikili (2015) as mentioned above. What determines FD is material and lacking in the literature in this region, a gap that we attempt to fill. The role of democratic institutions takes centre stage in this study moving away from the finance – growth nexus to the institutional causes of FD with a focus on political institutions and their effect on FD.

3.3.2 Institutional determinants (democracy and financial development)

The late 1990s saw the emergence of the institutional school of thought which holds that understanding the institutional environment is imperative for FD and has recently attracted considerable attention from both theorists and empiricists (Fergusson, 2006; Beck and Levine, 2004). The law and finance school emphasises the differences in legal origin in explaining the difference in FD across countries. La Porta Lopez-de-Silanes, Shleifer, Vishny (1997, 1998), Djankov et al. (2007). La Porta et al (1998), Rajan and Zingales (2003), Acemoglu and Johnson (2005), Haber, North and Weingast (2008) argue that institutions that ensure: respect of the rule of law, make sure property rights are protected, contracts are enforced and constrain those in powerare shown to have achieved higher levels of FD, a thought adopted in this study.

The protagonists of the legal school of thought of FD argue that the dissimilarity between financial systems based on banks and financial systems based on the marketsis immaterial. For instance, Levine (1998, 2000, 2001) and Levine et al (2000) using cross-country data from La Porta et al (1997, 1998) on differences in corporate law, regulation and law systems, argue that what is crucial for FD is establishing a general legal framework in an environment in which financial systems can effectively and efficiently operate. The legal view, therefore, asserts that only that part of FD that relies on the legal system is important for promoting growth in the economy. As highlighted above, Yang (2011) asserts that of central importance and at a rudimentary level, the legal institutions could be thought of and being brought about and reinforced by democracy. Contrary to the above views, Marcelin and Mathur (2014) present a framework for understanding the interactions between political and legal institutions, property rights protection, and their implications for FD and find little support that common law legal heritage is more suitable than French civil law for some key features of FD. They conclude that different types of institutional and market reforms are more relevant to financial intermediation than legal systems. We argue that market reforms and legal heritage may affect FD through political stability which in turn depends on the state of democracy. The more democratic a country is the more effective market reforms would be and the more independent the judiciary would be to ensure property rights and contract enforcements.

Recent studies have exemplified the fact that a positive electoral democratic system contributes positively to FD. According to Siegle et al (2004) democracy ensures that: political power is not concentrated in the hands of a few individuals or groups, those in power put in place systems that react quickly and positively to the needs of citizens, there is

transparency, there is a system of self-correcting mechanisms without external help and other aspects of good institutions. Haber et al., (2007) contends that democracies, by encouraging citizens to influence or support government and to compete for political power may limit state involvement in the financial system which are sometimes exploitative and opportunistic and thus bring about more rivalry and efficiency in the banking system. North and Weingast (1989) suggest that when there is no political competition, what will be of crucial importance to ensure that property rights are protected and that contracts are enforced will be the fact that political power is not concentrated in the hands of a few individuals or groups. Acemoglu and Johnson (2005) contend that countries that greatly limit the powers of the government will guarantee greater protection of property rights which ultimately lead to more efficient banking and market financial system. In the same line of thinking, La Porta et al., (2002) is of the view that democratic regimes limits government takeover of financial institutions hence encouraging FD. Rodrik (2000) argues that democracies deliver better institutional outcomes because they tend to create more equal opportunities for people, especially in the fields of health, education and employment opportunity, which manifests itself in a higher share of wages in the national income. In general, therefore, according to Rodrik (2000) democracy helps to build better institutions based on local knowledge: political systems that advocate more involved forms of citizen participation and curbing excessive concentration of power are the most successful in assembling knowledge from within the country. Democracy is thought of as an institution beyond others which is crucial for building other good institutions (Rodrik 2000). Therefore, as a meta-institution, democracy ensures effective constraints on governments and effective policy implementation strategies which positively impact on FD.

Huang (2010) argues that in countries where there are no political checks and balances and power is concentrated in the hands of a small group of powerful people, they will be more prone to take care of their interests and limit political participation and competition in the system. If such a powerful group controls an inordinate amount of political power, then the more dictatorial the system which ultimately hinders FD. This, therefore, means limiting the power of elite groups through checks and balances increases political participation ensures the political rights of citizens, ensures that individual rights are protected by the law from unjust governmental or other interference. With these guaranteed, the efficiency of institutions would be increased which is advantageous to FD (Huang, 2010). Girma and Shortland (2008) find that FD is promoted where there is regime change from autocracy to democracy as a result of a general increase in wealth. Inferring from this argument, we assert that an increase in wealth would increase savings and investments and ultimately growth. Intermediation is thus increased, a positive feature of FD. We argue that for

democracy to have a real positive effect on FD, it should be substantive[10] rather than just procedural.

Building from the work of Yang (2011), Cooray (2011), Anwar and Cooray (2012) and Huang (2010), who contend that political institutions, especially democratic transformation foster FD, we posit that FD in SADC countries could be achieved through democracy, controlling for specific economic and social variables in a non-linear relationship. We test this hypothesis in a region characterised by countries with improving but differentiated levels of FD following deregulation in the 1990s Brownbridge and Harvey (1998) and a wave of democratisation though with fragile and predominantly weak institutions Landsberg (2004). Most previous empirical studies on the effect of institutions on FD suggest a linear relationship. We contend that the effect of democracy on FD could be through interactions with certain social and economic policy variables in a relationship that is non-linear. In this respect we follow Minier (2007) who investigated the indirect effect that institutions may have on growth after allowing for several types of non-linearities. We build on this and suggest that the impact of democracy on FD may be non-linear through their interactions with policy variables.

While the positive impact of democracies on FD is mostly positive and convincing as exposed above, some studies have shown that this assertion is somehow ungrounded on its effects on FD and others on growth. On the effect of institutions on growth, the primordial role of institutions in promoting economic development is discounted by Chang (2003) who concludes that institutional development is not the sine qua non of economic development, and institutional reforms in developing countries should not be imposed from outside, but should be allowed to evolve naturally and internally. This argument may accord with the central conclusion of Rodrik (2000) study and the pioneering research by Hausmann, Pritchett and Rodrik (2005: 303) on 'growth accelerations', who suggest that everything we know about economic growth that indicates large-scale institutional transformation is not so necessary for getting growth started, but is very important for sustaining it. These conclusions suggests that the negative effect of institutions on growth may not be conducive for FD if institutions are not in-built and allowed to evolve naturally but imposed from outside. Contemporary, the argument seems to correlate with political instability created in some

[10]We define substantive democracy as one that not only brings about free and fair elections, the separation of powers and the role of opposition parties but ensures respect of the rule of law, protects property rights as well as contract enforcements, creditor and shareholder rights and puts effective constrain on rulers.

countries around the world as international organisations try to encourage and secure democracy leading to the affected countries experiencing low growth and FD.

Some recent studies have shown a weak association between democracy and FD. An empirical study by Yang (2011) finds that the development of the stock market is negatively associated with FD. He contends that the development of the banking sector positively relates to democracy in cross-sectional regressions but vanishes when using panel regressions. Barro (2008) argues that democracy can hamper growth in the nascent developmental stage caused by: the tendency of the majority voting to support programmes that reapportion income from rich to the poor, policies that increase taxes and other distortions that reduce incentives. Also, Barro (2000) suggests that democracies may give in to pressure groups that redistribute resources to themselves; for example agricultural lobbies, defence contractors and trade unions. Barro's (2000) conclusions corroborates with that of Alesina and Perotti (1994) in their early survey of the political economy of growth who assert that growth is influenced not so much by the nature of the political regime (democracy or dictatorship) but by the stability of the political regime transitions from dictatorship to democracy, often associated with socio-economic instability, which are typically periods of low growth. These findings were based on the proxy or proxies for FD applied and the stage of economic development of the country or countries in question.

Studies on the effect of institutions in FD and growth in developed and developing economies as highlighted above show mixed results. It should be worth noting that there is inconclusive evidence that institutions matter for FD and growth. We build on this evidence and test our hypothesis in SADC region where we are not aware of any studies exploring the role of institutions on FD. The methodology and empirical analysis in this thesis attempts to fill this vacuum.

3.4 Stylised Facts and Empirical Evidence:

Stylised facts, as well as empirical evidence provide credence to the role of institutions in promoting FD. Brown (2008) suggests that political development should include a form of democratic government that allows for broad participation by the population with a competitive electoral environment and a high level of political freedom, civil liberties and protection of the rights to property. The quality of institutions should be sufficient to adequately address the needs of the society and have sufficient conflict resolution mechanisms to allow for problem solving within the political system (Brown, 2008). This

suggests that political development is the process of change in the political system which reflects the goals of economic and FD.

3.4.1 Stylised facts on the determinants of financial development

We explore some stylised facts on the link between some important institutional and policy variables used in the study and FD. As mentioned earlier, a huge body of research underscores institutions as a core factor in determining long-run economic growth with some studies showing evidence of the effect of geography to be via institutions (see Acemoglu, Johnson & Robinson, 2001; Dollar & Kraay, 2003; Easterly & Levine, 2003 and Rodrik, Subramanian & Trebbi, 2004). Huang (2010) applies BMA and general to specific analysis to show the effect of institutions, policy and geography on FD. He finds that institutions dominate in explaining variations in FD compared to policy and geography – the powerful role of institutions on FD is highlighted over geography and policy variables. The findings suggest that attempts by the government to improve the standard of institutions (together with sound macro-economic, trade and social policies) could have a beneficial significance on FD. A possible implication may be that institutions could be interacting with these policy variables to affect FD, a feature that suggests non-linearities and taken into consideration in this study.

We follow Huang's (2010) (BMA) procedure to determine the proximate determinants of FD in the SADC region using institutional, economic and social policy variables. We contend that institutional quality (good governance) could be achieved more effectively in a democratic environment which ensures a trustworthy institutional and legal system and a society where all its citizens will be actively involved in the development of the country.We suggest that these features (and much more) of quality institutions are essential recipes conducive for FD. We argue that this relationship may be non-linear by exploring interactions between democracy and policy variables to see the effect on FD – in which case the effect would be indirect.

3.4.2 Empirical evidence on cross-country and panel studies

In this section we review cross-country and panel studies on finance and growth, institutions and growth and institutions and FD. We only mention the various contributions of each study in the literature and methods therein. The relative merits and demerits of panel studies would be explored in the methodology section of the study. We include this section motivated by the fact that the thesis is based on panel studies and to show how some of the methods used in this study deviate from the previous studies in general and of the region in particular,

where no previous study has been executed neither on the basis of the institutional determinants of growth nor on the institutional determinants of FD. This highlights our methodological contributions to the wide body of literature.

3.4.2.1 Finance- growth nexus

Panel proof on the relationship between finance and growth could be drawn from De Gregorio and Guidotti (1995) who empirically find that FD leads to increased GDP growth except when the financial liberation process is unregulated. Odedokun (1996) finds that growth in low income countries respond more to FD comparatively to upper middle income countries. From a micro perspective, Rajan and Zingales (1998) using data from industry find that industries that depend on external sources of finance show improved performance in countries that possess much more developed financial intermediaries and markets. Beck et al. (2000) and Benhabib and Spiegel (2000), find a robust positive link between FD and income per head, total factor productivity and capital accumulation growth rates.Their findings also show a positive link between FD on both savings and investment rates though not very significant statistically. It is worth noting that the results of the latter authors are influenced by specific effects in each country and the application of the different proxies of FD. Ndikumana (2005) show evidence that different indicators of FD relate favourably with investment in the local economy. The implication of Ndikumana's (2005) study suggests that the growth of financial systems increase capital availability conducive to capital accumulation.

Henry (2000) show evidence that the capitalisation of the stock marketaugments private investment in nine of eleven developing countries. In a similar study Rousseau and Watchel (2000), find thatfinancial intermediation and stock market liquidity increases per capita output growth. The study also finds a weak relation between stock market capitalisation and output. By studying the effect of stock markets and the banking sector on growth, Beck and Levine (2004) note that though both banks and stock markets contribute positively towards growth, the financial services provided by stock markets is different from those provided by banks.

Levine, Loayza and Beck (2000) find evidence that the development of institutions that channel funds from lenders to borrowers is crucial and positively affect economic growth and that variation in FD across countries is due to variations in legal and accounting systems. The work of Beck and Levine (2002) corroborates with results of Rajan and Zingales (1998) which suggest that industries which depend more on external finance tend to grow at a faster rate in economies with much more sophisticated financial systems. Rousseau and Watchel (2002) contend that finance tends to retard growth when inflation reaches a

threshold level of 13%-25% and the effects are remarkably positive when inflation falls below the 6%-8%limit. Calderon and Lui's (2003) conclusions reveal a bi-directional relationship between FD and economic growth with a stronger impact in developing economies. They contend that finance affects growth through the investment and productivity growth channels with the latter channel being more pronounced. Christopolous and Tsionas (2004), show that FD and economic growth are co-integrated with a long-run uni-directional causality running from finance to growth. By separating countries into three groupings based on how financially developed they are Rioja and Valev (2004) show evidence that suggests finance as having a strong positive link on real GDP growth in countries where their financial systems are more developed.That is not the case in less financially developed economies where it has been noted that the relationshipequivocal.

On linearities and non-linearities on the finance-growth connection, Ketteni, Mamuneas, Savvides and Stengos (2005) contend that the relationship is linear only when two-way interactions between economic growth, initial per capita income and human capital are considered. In the same spirit, Stengos and Liang (2005), using a semi-parametric approach indicates that the association between finance and growth is non-linear. However, the results would depend on the proxies of FD applied.

All the above panel studies adopt methods using annual data which generally includes: Ordinary Least Squares (OLS), Generalised Least Squares (GLS), Instrumental Variable (IV), regressions and Generalised Method of Moments (GMM), Vector Auto-Regressions (VARs) and Vector Error Correction Models (VECM), semi-parametric partial linear model and augmented semi-parametric partial linear models when non-linearities are investigated. In most cases the results indicate that FD positively impact on economic growth, though in some cases a weak relationship is established. Some studies suggest a bi-directional causality and others show no feedback effect. In all, these relationships have been shown to depend on the level of income of nations, the level of development of financial markets and intermediaries and a host of government and trade policies control variables. Putting the accumulated evidence under the microscope of meta-analysis Valickova, Havranek and Horvath (2014) conclude that the literature as a whole documents an average positive association between FD and economic growth. This conclusion corroborates with an earlier meta-analysis study by Bumann, Hermes and Lensink (2011) showing on the average a positive but weak significant effect of financial liberation on economic growth. If finance contributes moderately towards economic growth, then putting in place or improving those factors that determine FD is important. We focus on democracy and argue that the relationship may not necessarily be linear as the above studies generally seem to suggest.

3.4.2.2 Institutions and growth nexus

The theoretical models of growth of (Solow, 1965; Cass, 1965; Koopmans, 1965; Romer, 1986; Lucas, 1988; Romer, 1990; Grossman & Helpman, 1991; Aghion & Howitt, 1992) have brought significant intuitions in the literatureon the mechanics of economic growth. North (1990) argues that though these theories are still vibrant in economics and their contributions noteworthy, they have arguably not been able to put forward a basicexposition of the mechanics of economic growth. Earlier, North and Thomas (1973) suggest that innovation, economies of scale, education, capital accumulation, and others are only near determinants of growth andin their view; differences in institutions provide the underlying reason behind comparative growth. North (1990:3) offers the following definition: “Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction”. He further emphasised the key implications of institutions since, “In consequence they structure incentives in human exchange, whether political, social or economic” North (1990:3). Central to this study is the hypothesis that political institutions (democracy) influence financial outcomes and are derived internally – they are, at least in part, determined by society or a segment of it as suggested by North (1990). We contendthat the influence of democracy may be indirect through the interaction of social and economic policy variables. Before exploring the effects of institutions on FD, we begin by examining some panel models on the effects of institutions and growth.

Studies have empirically tested the theoretical models on institutions and growth and there is potent evidence that variations in institutions account for heterogeneous growth rates among countries. Theoretical and empirical evidence is provided by Acemoglu, et al., (2002) that variations in economic institutions provide some basic explanations for the diverse differences in economic development across states because of the power of institutions in shaping economic outcomes and constrains on the agents. Kaufmann, Kraay and Mastruzzi (2005) contend that the effect of institutions on economic growth is more significantin the long-run.

The empirics on institutions and growth have generally followed a trend where the different institutional variables enter the analysis. For instance the following variables have been more prominent in the empirical analysis on the relationship between institutions and growth: political stability, property rights and contract enforcements, democracy, the quality of public and civil service, graft, ability of government to formulate and implement good policies and regulations, well defined and established laws that are fairly applied and enforced, public or individual preferences in investment decisions, the efficiency of government regulation of business, civil society, political rights and civil liberties, societal norms, remittances, among

others (See Acemoglu et al. 2003; Glaeser, La Porta, Lopez-de-Silanes & Shleifer, 2004; Rodrik et al. 2004; Kauffman et al. 2005; Lee & Kim, 2009; McClaud & Kumbhakar, 2012; Anwar & Cooray, 2012; Siddique & Ahmed, 2013; among others). The effect of trade and geography on growth controlling for the institutional quality is explored by Rodrik and Subramanian (2003) and finds a positive influence of trade and geography on growth.

Inspired by North's (1981) theoretical model on rent seeking, Mauro (1995) analyses empirically how graft may restrict investments and have a negative impact on economic growth.In a study, Johnson, Kaufmann and Zoido-Lobaton (1998) assert that high taxes and the strength of regulations may not be the cause of the unofficial economy but that this is triggered by the level of corruption. This argument suggests that corruption increase the size of the informal economy leading to low levels of growth. A different view is held by the effect of the strength of regulations. Djankov, La Porta, Lopez-de-Silanes and Shleifer (2001) in a study argue that high levels of regulation are translated into high levels of corruption. Tanzi and Davoodi (1997) show evidence that corruption can decrease the effectiveness of productive effort and the standard of investments provided by the public sector which negatively affects growth. Wei (2000) points out that corruption in a host country reduces foreign direct investment thereby havinga negativeeffect on growth.

Sarte (2001) asserts that the effectiveness of the policies of governmentis paramount in explaining economic growth and differences in growth among countries. The intuition behind this institution demonstrates that the problems faced by countries politically, lack of foresight and excessively complicated administrative procedures or red tape can lead to inefficient spending resulting in large budget deficits which have the potential of reducing growth (Sarte, 2001). Evidence on the negative link between political instability and growth can be drawn on a study by Alesina and Perotti (1994) as well as Londregan and Poole (1990). In a study of 135 economieswith regards to the remittances of migrants, Catrinescu, Leon-Ledesma, Piracha and Quillin (2009) argue that a stable government can direct remittances through formal channels (i.e., via financial institutions) to its recipients. This allows for bank intermediation which has been shown to have a positive effect on economic growth.

Siddique and Ahmed (2012) using an index of institutionalised social technologies along with its sub-indices (institutional and policy rents, political rents and risk reducing institutions) as measures of institutions find evidence that institutions of institutional and policy rents substantially influence long-run economic growth whereas institutions that reduce risk and inhibit political rent were not statistically significant in some cases. This evidence corroborates with findings by Acemoglu and Johnson (2005) who argue that in the absence

of formal risk reducing institutions, informal arrangements develop to provide protection in their place.

The protection of property rights is widely recognised as being the state's responsibility. Gradstein (2004) presents a model where economic performance and enforcement of property rights may reinforce each other. Existing empirical evidence that offers tentative support for this theory include: the work of Chong and Calderon (2000) where the authors explicitly test for mutual causality between good governance and growth, suggesting multiple institutional equilibria whereby good institutions promote growth which then leads to the adoption of good institutions. Hall and Jones (1999) employ subjective evaluation of aspects of governance, such as bureaucratic efficiency, corruption, maintenance of law and order, supplemented by the degree of openness to international trade and present robust findings on the positive effect of good governance on growth. Similar findings were reached by Kaufmann, Kraay and Zoido-Lobaton (1999a) while using an enlarged dataset and a much wider battery of measures of governance quality based on a variety of sources though incidentally dismissing the trade openness variable.

The effect of institutions on growth is not limited to the above panel studies. Generally, the theoretical and empirical studies on institutions and growth seem to corroborate in varying degrees with Acemoglu et al.,'s (2001) conclusions which suggest that political institutions play an important role in determining how economic institutions can positively affect economic growth. They suggest that for this to be possible, rent seeking by those in power must be checked to limit the amount of rent to be captured, their powers constrained and a comprehensive enforcement of property rights by those holding political power. Some studies show evidence that long-term authoritarians appear to be better for growth than democratically elected politicians who succeed in prolonging their term of office (see Bueno de Mesquita, Smith, Siverson & Morrow, 2002). In the same spirit, Nkurunziza and Bates (2003) contend in a study of African economies, that for a given level of democracy, there is an optimal period of tenure beyond which the incumbent leader harms economic growth. The optimal tenure period is largely influenced by the strength of the direct impact of political stability on growth.

The empirical models on the effect of institutions and growth have generally used annual data and the following estimation techniques: Ordinary Least Squares (OLS), Instrumental-Variables (IV) Regressions, Two Stage Least Squares (TSLS), Generalised Method of Moments (GMM) and more recently the GMM System. The results, though mixed, generally seem to suggest that legal and political institutions matter for growth with a feedback relationship in some cases. Our review so far shows that finance is important for growth to

take place and in some studies; there is evidence of a bi-directional causality; that institutions promote growth and there is also evidence of a positive feedback effect. If there exists in some studies a two-way causality between FD and growth and in others a positive feedback effect between institutions and growth, then we use this logic to posit that institutions may affect FD. We address this new area of interest in the SADC region where we are unaware of anyprevious and hypothesise that democracy and its interaction with specific social and economic variables could promote FD in arelationship that may be non-linear. The stage is now set for our review of panel models on the institutional determinants of FD.

3.4.2.3 Institutions and financial development

Roe and Siegel (2011) bring forward strong empirical proof that instability in the political system impedes FD, with its variation of primary determinants that bring about differences in FD around the world. The study further reveals that exogenously determined political instability holds back FD with legal origin, trade openness, basic geography of latitude and corporate law quality as control variables. Empirical results in a study by Chinn and Ito (2005) suggest that a when financial markets are more open, it linearly and non-linearly contributes towards the development of equity markets. They assert that the non-linear contribution is via legal and institutional factors and their level of development – a feature that is widespread in upper middle income economies comparatively to the lower middle and low income economies.

Empirical evidence by Huang (2010) suggests that the development of institutions positively affect FD in the short period in low income countries. The study brings forth precursory evidence suggesting that periods of democratisation is commonly followed by growth in FD. Deepraj and Nabamita (2013) investigates the role of political institutions and culture in creating an efficient financial infrastructure for a country and show evidence that both these types of institutions - political institutions and culture – not only jointly promote FD but behave as complements - the presence of efficient political institutions augment the effectiveness of culture and thus, FD is enhanced.

Andrianova, Demetriades and Shortland (2008) reveal evidence which suggest that the following variables are important determinants of FD: the government's ability to formulate and implement sound policies, the level of regulatory quality, a system where all people and institutions are subject to and accountable by the law and the extent to which all relevant information pertaining to banks are released. They argue that to promote FD in developing economies governments should rather build strong institutions that increase the

effectiveness of private banking instead of privatising or subsidising state banks. Bacerra, Cavallo and Scartascini (2012) build a theoretical model and provide empirical evidence that credit dependence and the role governments play in credit markets would determine the degree of opposition to FD. Their empirical findings suggest that the development of credit markets is positively linked to lower opposition to FD only in countries with sound and effective government capabilities. Miletkov and Wintoki (2012) argue that the positive link between institutional development and FD is due not only to the positive effects of institutions on FD but also can be explained, at least in part, by the effects of exogenous changes in FD on the quality of institutions. These findings by Miletkov and Wintoki (2012) suggest that FD itself has a positive causal effect on the quality of property rights and legal institutions in a country – an indication of bi-directional causality. Aggarwal and Goodell (2009) in a study document that national preference for market financing increases with political stability, societal openness, economic inequality and equity market concentration and decrease with regulatory quality and ambiguity aversion. The results are likely to be of interest in assessing the impact of political and sociological developments on banks and other financial institutions.

A study by Yang (2011) using cross-sectional data finds that democracy is positively linked with the development of banks though the relationship vanishes when panel regressions are applied. The empirical results suggest, with caution that democratic regimes does not guarantee increasing levels of FD. The findings seems to corroborate with the work of Mulligan, Gil and Sala-i-Martin (2004) who contend that democracies seem to increase political competition and the quest for public office but have little effect on the policies of the government. In the same tradition as Siegel, Weinstein and Halperin (2004), we argue that the positive effect of institutions on FD, whether legal or political may be attributed to democracy since it ensures that: political power is not concentrated in the hands of a few, the government react timeously to the needs of the citizens, the government is transparent, there are self-correcting mechanisms within the political system and other good institutions. This relationship may not necessarily be direct. We also contend that the relationship between institutions and FD may exhibit significant indirect effects. We assert that this evidence is at most suggestive unless being put under the critical eye of meta-analysis to be able to draw meaningful conclusions generally on the relationship – an avenue for further research on literature survey.

The estimation techniques applied by most studies to determine the effect of institutions on FD are similar to those applied in determining the effects of institutions on growth with the primordial aim of dealing with the problem of endogeneity. Again, the results though mixed, generally shed credence to the positive role institutions play in determining FD. After

applying some of the current widely used techniques as discussed above, we deviate and contribute methodologically to the body of knowledge by applying the Bayesian and Markov inferences to test the effect of democracy on FD in the SADC region.

According to Glaeser, La Porta, Lopez-de-Silanes and Shleifer (2004) the institutional measures widely used in the literature are flawed because they are not built to reveal either restrictions on government or lasting characteristics of the political landscape – they measure outcomes rather than institutional constraints and that these measures sometimes reflect the decisions made by power-holders rather than restrictions on government (e.g., a country ruled by a dictator who freely chooses good policies should not be ranked as having good institutions). They are highly inconsistent and exhibit mean-reversion and are hardly in correlation with the unbiased legal restrictions on government (Glaeser et al., 2004). If democracy does not adhere to the above, this could serve as a limit to the study in terms of its explanatory power.

3.5 Conclusion

The chapter begins by discussing the functions of the financial system in relation to how the different countries under study are faring in terms of efficiently performing these functions. These functions relate explicitly and implicitly to the proxies of FD applied in the study. We argue that the state of democratic governance in each income group/country would have a significant influence on how these functions are performed which ultimately determines how developed the financial system is. The literature on the finance growth nexus is described, with studies in the SADC region being dominated by endogenous growth models of FD. Studies on the institutional determinants of FD are seen to be conspicuously absent in the region. We focus on the effect of political institutions especially democracy (which is seen as an institution beyond other institutions) on FD. We highlight the fact that past studies on the effect of democracy and FD have been both theoretical and empirical. Empirical analysis on the link between institutions and FD in the literature has yielded mixed results with a trend skewing more to a positive relationship. The empirical strategies to test the various hypotheses in the literature have been largely IV techniques with the objective of mitigating endogeneity and omitted variable biases but to a limited extent. By suggesting the Bayesian and Markov inferences, we argue that these biases could be better taken care of. Finally, we acknowledge the weaknesses that may inhibit the institutional measures highlighted above, though there is still no consensus among institutional economists on these issues. The Polity IV measures are still widely accepted as a measure of the state of democracy of

countries. The study proceeds in the next chapter and specify the models and estimation techniques that will enable us achieve our three main objectives.

CHAPTER 4

EMPIRICAL MODEL SPECIFICATION AND ESTIMATION TECHNIQUES

4.1 Introduction

This chapter presents an overview of the models that will be used to test the hypotheses postulated in the study, variable selection and operationalisation. The models would test the following aspects based on our hypothesis: (i) The effect of institutions - democracy, autocracy and constraint on executives on FD; (ii) the probability of switching between regimes of high FD and low FD following political regime changes and (iii) examine how a shock in the institutional variables affects FD compared to the social and economic variables (real variables). First we specify the different models that will be used to test the hypotheses. Secondly, we present a conceptual description of each variable followed by operationalisation. We provide a summary of the data followed by panel data techniques. The use of panel data is justified through its merits. Its demerits are also highlighted together with the endogeneity problem, which still comprises a significant research gap despite developments in recent methods to erradicate this problem. Finally, appropriate diagnostic tests are presented to ensure robust results.

4.2 Model Specification

The models that have been widely used to test the effect of institutions on FD include, Ordinary Least Squares (OLS) and Instrumental Variable Regressions (IV) which include Two Stage Least Squares Regression (TSLS), Generalised Method of Moments (GMM), Difference and System Generalised Method of Moments (system GMM) (See Yang, 2011; Huang, 2010; Cooray, 2011; Deepraj & Nabamita, 2013; Hafer, 2013; Siong Hook, Hui Boon & Azman-Saini, 2014; among others).

In our initial analysis, we apply OLS, GMM, difference and system GMM to test the effect of political institutions (democracy) on FD. To test how shocks on institutional variables used in the study impact on FD compared to social and economic variables we apply the Bayesian Vector Autoregressive Model (BVAR). Though the primary aim of using the BVAR models is for forecasting, our main objective of applying the BVAR is to determine how FD reacts to impulses of the institutional variables compared with the social and economic variables used as controls. To determine whether the probability of staying in a regime of weak/low FD in countries experiencing weak/low FD is high compared to countries experiencing a higher level of FD, we apply the Markov Switching Model assuming constant volatility. In order to test our hypotheses we specify the following models. We begin with the traditional models

that have widely been used to test this relationship (OLS and GMM) before specifying models that are now popular in dealing with endogeneity (difference and system GMM).

Estimation method 1: OLS and GMM.

To determine the significance of explanatory variables in explaining FD we begin our analysis by estimating a panel model using the following estimation techniques: Robust Ordinary Least Square (ROLS) and Generalised Method of Moments (GMM). We use robust least square - MM estimations to cater for outliers in the panel. The benefit of using panel data is that it takes into consideration more degrees of freedom and greater variability in the sample than cross-sectional data, with the effect of improving the efficiency of the estimates, Greene (2011). We use IV estimations to tackle the likelihood of endogeneity of institutional, policy and social variables that act as regressors. Endogeneity bias may result in estimates that are not robust. Recently these methods of analysis have been widely applied in the literature on the connection between institutions and FD (see Huang, 2010; Yang 2011; Aggarwal et al., 2011; Anwar & Cooray, 2012; Miletkov & Wintoki, 2012; Bacerra, Cavallo & Scartascini, 2012; Deepraj & Nabamita, 2013; among others). In the spirit of Huang (2010), we make an informed choice of control variables for each income group by employing the significant variables determined by the Bayesian Model Averaging (BMA)[11]. We start with the traditional OLS estimator to estimate the model and modify it step by step by applying, GMM, difference and system GMM estimators for each income group.

The panel model takes the following form:

$$F_{it} = \alpha F_{it-1} + \beta D_{it} + \gamma' \rho_{it} + \mu_t + \delta_i + \varepsilon_{it} \quad (4.1)$$

Where: F_{it} is a measure of FD in a country, i at time t (these include bank deposits, private credit and liquid liabilities); D_{it} is the value of institutional variables which include democracy (procedural or substantive[12] -We measure substantive democracy by the variable "S Polity IV". We use dummy variables to compute a series for each country. Where the index of democracy (the combined polity score) is greater than or equal to six, it takes the value 1 and 0 otherwise. Marshall (2014:31) suggest that "Polity IV denotes cases of 'major democratic transition' defined by a six-point or greater increasein the combined POLITY score") or interaction between democracy and specific economic or social variables, executive constraints, autocracy; ρ_{it} is the value of control variables determined by BMA; μ_t

[11] We use the approach developed by Raftery et al. (1997)

[12] In determining whether a country's democracy standings are procedural or substantive, we computed the mean polity IV values for the period under study (1975-2013). Where the mean value is greater than 6, we suggest that the country's democracy is substantive otherwise procedural.

is the time fixed effect; δ_i is the country fixed effect; ε_{it} is the random error term that represents all other variables. We hold that the transitory errors ε_{it} are not carried over into future time periods

First we determine the effect of institutions without controls. Equation 4.1 without controls collapses to $F_{it} = \alpha F_{it-1} + \beta D_{it} + \mu_t + \delta_i + \varepsilon_{it}$. Then a step by step introduction of controls ($\gamma' \rho_{it}$) and interactions are done based on variables of the best five models determined by BMA. This procedure is executed for all estimators specified in our initial analysis. Non-linearities in the relationship between institutions and FD would be exposed by interactions between democracy and specific BMA determined control variables.

Model 2: Difference and System GMM

According to Roodman (2009), the difference and system GMM estimators are appropriate for panel analysis and contain assumptions about the process of data-generation which have not been dealt with by the other IV estimators. These include that fact that:

(i) The current realisations of the dependent variable may be influenced by past ones in a dynamic process.

(ii) There may be fixed individual effects which are randomly distributed and does not favour cross-section regressions that assume time independent effects. They accommodate a panel setup, where changes over time can be used to ascertain the values of the estimated variables.

(iii) Some of the explanatory variables may be endogenous.

(iv) The unsystematic shocks may have individual-specific patterns of unequal variabilityand the errors associated with a given time period carry over into future time periods.

(v) The unsystematic shocks do not correlated across individuals.

Also, Roodman (2009) contends that some exogenous variables can have an effect on past ones, for instance the lagged dependent variable. The estimators do not allow for external instruments to be included in the model suggesting that only the lags of instrumental variables may be included. Instrument proliferation has, however, been identified as a potential weakness of the difference and system GMM. It has been noted by Roodman (2009) that this bias is common to all IV regressions and becomes more accentuated when the numbers of instruments increase. Sadly, there seem to be little direction from past studies on the appropriate number of instrumentsand even when the instruments are not “too many” the bias is still encountered (Ruud 2000: 515). To mitigate the possibility of bias

due to instrument proliferation we follow Miletkov and Wintoki (2012) and limit the instrument set to at most two lags of the regressant and regressors. The different estimation techniques allows for robustness checks of the estimates for each method used.

Arellano and Bover (1995) and Blundell and Bond (1998) suggested the system GMM estimator that allows controlling for the joint endogeneity of regressors through the application of instruments that are internal. This involves combining equation (4.1) with a first difference equation (4.2). We instrument equation (4.1) is with the first differences of the variables that have been lagged, while the equation (4.2) is instrumented with lagged levels of the variables making them exogenous to fixed effects[13]. Equation (4.1) is transformed to take the following form:

$$F_{it} - F_{it-1} = \alpha(F_{it-1} - F_{it-2}) + \beta(D_{it} - D_{it-1}) + \gamma'(\rho_{it} - \rho_{it-1}) + \mu_t + \delta_i$$

$$+(\varepsilon_{it} - \varepsilon_{it-1}) \quad (4.2)$$

The definitions of the variables are the same as in equation (4.1). The GMM estimator is based on the assumption that the error terms are not serially correlated and that the explanatory variables are weakly exogenous or not correlated with future realisations of the error terms under which the following moment condition holds for the first difference estimator;

$$E[F_{it-s}\,; (\varepsilon_{it} - \varepsilon_{it-1})] = 0; \text{ where } i = 1, \ldots..10, t = 3, \ldots..38 \text{ and } s \geq 2. \quad (4.3)$$

$$E[D_{it-s}; (\varepsilon_{it} - \varepsilon_{it-1})] = 0; \text{ where } i = 1, \ldots..10, t = 3, \ldots..38 \text{ and } s \geq 2. \quad (4.4)$$

$$E[\rho_{it-s}; (\varepsilon_{it} - \varepsilon_{it-1})] = 0; \text{ where } i = 1, \ldots..10, t = 3, \ldots..38 \text{ and } s \geq 2. \quad (4.5)$$

Equation (4.1) is instrumented with lagged first differences of variables which lead to the additional moment condition as follows:

$$E[\Delta F_{it-s}; (\omega_i - \varepsilon_{it})] = 0; \text{ for } s = 1 \quad (4.6)$$

$$E[\Delta D_{it-s}; (\omega_i - \varepsilon_{it})] = 0; \text{ for } s = 1 \quad (4.7)$$

$$E[\Delta \rho_{it-s}; (\omega_i - \varepsilon_{it})] = 0; \text{ for } s = 1 \quad (4.8)$$

Where: ΔF_{it-s}, ΔD_{it-s}, and $\Delta \rho_{it-s}$ are the lags of first differences.

[13] Cooray (2011) contends that lagged values do not always serve as good instruments and the estimated results may be sensitive to the choice of instruments. The use of other instruments may be attempted by the researcher, though this may be impeded by the lack of data. This problem has been highlighted in recent studies by Barbosa and Eiriz (2009) and Suyanto, Salim and Bloch (2009). The use of other instruments (such as stock market variables) in the study is impeded by unavailability of data in most of the countries under study.

We capture non-linearities in the relationship between democracy and FD by executing statistical interactions between democracy variables and the policy and social control variables for each income group of countries.

Model 3: Markov Switching Model (MSM)

We apply the Markov Switching Model to FD. Essentially, we determine the probabilities and smooth probabilities of moving from a state of weak or low state of FD to a high FD state and the expected duration of being in a particular state. We suggest that if policy makers are informed of the volatility and duration of such volatility as a result of institutional and economic shocks, appropriate policies may be executed to ensure stable improvement in FD.

Hamilton's (1989) MSM, is one of the most widespread non-linear time-series models that studies have applied in the past. According to Hsu and Kuan (2001), the model involves numerous equations that can distinguish the behaviour of the data series in different regimes. When switching occurs between the different arrangements, the model can express more intricate constant changing structures. Hsu and Kuan (2001) notes that a new characteristic of the MSM is that what governs the transition process is an unseen factor that ensues a first order Markov chain which is appropriate in explaining data that is connected and that exhibits changing structures in distinctive periods of time.

This study applies the first version of the MSM that emphasis on the average behavioural pattern of the variables (Hamilton, 1989). This version of the MSM and other modifications have been extensively used to analyse economic data and financial time-series data; (see Hamilton, 1988, 1989; Engel & Hamilton, 1990; Lam, 1990; Garcia & Perron, 1996; Diebold, Lee & Weinbach, 1994; Engel, 1994; Filardo, 1994; Sola & Driffill, 1994; Kim & Yoo, 1995; Schaller & van Norden, 1997; Kim & Nelson, 1998; Ang & Bekaert, 2002; Haas, Mittnik & Paolella, 2004; Bianchi, 2012, among others).

We estimate the following Markov Switching Model with conditional mean:

$$\begin{cases} F_t = \propto_{01} + \sum_{i=1}^{p} \beta_{1i} F_{t-i} + \sum_{i=1}^{p} \theta_{1i} D_{t-i} + \sum_{i=1}^{p} \gamma'_{1i} \rho_{t-i} + \varepsilon_{t,1}; & \text{if} S_t = 1 \\ F_t = \propto_{02} + \sum_{i=2}^{p} \beta_{2i} F_{t-i} + \sum_{i=2}^{p} \theta_{2i} D_{t-i} + \sum_{i=2}^{p} \gamma'_{2i} \rho_{t-i} + \varepsilon_{t,2}; & \text{if} S_t = 2 \end{cases} \quad (4.9)$$

Where $\varepsilon_{t,j} \sim N(0, \sigma_j^2)$; the definitions of the variables are the same as in equation (4.1). S_t = 1 and S_t=2 are the two states – high FD and weak/low FD.

The essential attributes of F_t are simultaneously resolved by unsystematic features of shocksε_t and the variable that describes the regimeS_t. In particular, Kuan (2002) suggest that the Markov state variables mutates the model structures and the changing probabilities determine the duration of each state. The categorisation of the regimes in the Markov Model are based on probability and determined by data. Kuan (2002) contends that since the state variables are not observable it may be difficult to interpret.

The first-order supposition of the Markov modelnecessitates that the probability of being in a stateis conditional on the previous state, with the following transition matrix, (Hamilton, 1989):

$$\boldsymbol{P} = \begin{bmatrix} \square(s_t = 1|s_{t-1} = 1) & \square(s_t = 2|s_{t-1} = 1) \\ \square(s_t = 1|s_{t-1} = 2) & \square(s_t = 2|s_{t-1} = 2) \end{bmatrix}$$

$$= \begin{bmatrix} P_{11} P_{21} \\ P_{12} P_{22} \end{bmatrix} \qquad (4.10)$$

Where $P_{ij}\ (i,j = 0,1)$represents the statechanging probabilities of $s_t = j$ given that $s_{t-1} = i$.The state changing probabilities satisfy$P_{i0} + P_{i1} = 1$. The transition matrix controls the unsystematicresponse of the state variable in question, and it contains only two parameters $(P_{00}\ and\ P_{11})$.

The expected time periodto be in state 1 is given by:

$\sum_{k=1}^{\infty} k\, P_{11}^{k-1}\ 1 - P_{11}\ = \frac{1}{1-P_{11}}$and the expectedtime periodto be in state 1 state 2 is $\frac{1}{1-P_{22}}$; see Hamilton (1989).

The appropriateness of the MSM is informed by the the following hypotheses:

H_0:The switching parameters (intercepts) are the same.

H_1:The state variables are independent – It can be expressed compactly as $H_1: P_{00} + P_{11} = 1$

Rejecting H_0 suggests that switching does occur. Accordingly, Hamilton (1996) suggests that conventional likelihood tests may be applied to test the hypothesis of independent state variables such as the Wald test.

Model 4: Bayesian Vector Auto Regression (BVAR).

In order to obtain the parameters of interest for BVAR we estimate the following panel vector auto-regressions:

$$\left.\begin{aligned} BD_{it} &= \propto + \sum_{p=1}^{k} K_p BD_{i,t-p} + \sum_{p=1}^{k} \beta_p D_{i,t-p} + \sum_{p=1}^{k} \gamma'_p \rho_{i,t-p} + \mu_t + \delta_t + \varepsilon_{it} \\ PC_{it} &= \propto + \sum_{p=1}^{k} K_p PC_{i,t-p} + \sum_{p=1}^{k} \beta_p D_{i,t-p} + \sum_{p=1}^{k} \gamma'_p \rho_{i,t-p} + \mu_t + \delta_t + \varepsilon_{it} \\ LL_{it} &= \propto + \sum_{p=1}^{k} K_p LL_{i,t-p} + \sum_{p=1}^{k} \beta_p D_{i,t-p} + \sum_{p=1}^{k} \gamma'_p \rho_{i,t-p} + \mu_t + \delta_t + \varepsilon_{it} \end{aligned}\right\} \quad (4.11)$$

Where:$BD_{it,}PC_{it,}and\ LL_{it}$are the measures of FD (bank deposits, private credit and liquid liabilities respectively) in a country i at time t. D_{it} is the value of democracy (procedural or substantial or interaction between democracy and specific economic or social variables; ρ_{it} is the value of control variables determined BMA; μ_t is the time fixed effect; δ_i is the country fixed effect; ε_{it} is the unsystematic error term that captures all other variables. We assume that the transient errors ε_{it} are a vector of shocks that may be simultaneously connected but are unconnected with their own past values and unconnected with all the explanatory variables. The parameters $\propto, K, \beta\ and\ \gamma'$ are of interest. According to Gianni and Giannini (1997) the past values of variables determined within the model appear as regressors, hence simultaneity is not a problem and the estimates of OLS are reliable. Furthermore, though the shocks may be simultaneously connected, OLS yields accurate estimates and is the same as GLS since all the equations in the model have homogenous explanatory variables (Gianni and Giannini, 1997).

According to Sims and Zha (1998), the fundamental aspect of Bayesian analysis requires an understanding and a determination of the prior, likelihood and posterior distributions. In Bayesian statistics and econometrics, the researcher's belief is considered external information and forms the prior while the likelihood is the information contained in the data. Both the prior and the likelihood are probability distributions using external information and the data sample respectively. Applying Bayes' theorem, the prior distribution is combined with the likelihood to determine the posterior distribution (Sims and Zha, 1998)

Litterman (1986) notes that the ultimate goal of Bayesian estimation is to determine the posterior mean, variance, skewness and kurtosis of the parameters of interest. Given that $k = (\beta, \varepsilon)$ denote the parameter of interest and y the data, $\pi\ k$ the prior distribution, $l(y/k)$ the likelihood, then the posterior distribution $\pi\ k/y$ is the distribution of θ given the data y and may be derived by:

$$\pi\ k/y\ = \frac{\pi\ k/y\ l(y/k)}{\pi\ k/y\ l(y/k)\partial k} \tag{4.12}$$

The denominator $\pi\ k/y\ l(y/k)\ \partial k$ is a normalising constant which has no randomness and thus the posterior is commensurate with the likelihood multiplied by the prior, given by $k/y\ \propto \pi\ k\ l(y/k)$. We relate this general framework to the BVAR models, according to Sims and Zha, (1998). To link this conventional structure to BVAR models, the likelihood function and the posterior moments can be derived Litterman, 1986, Sims and Zha (1998). We apply the Litterman/Minnesota prior distribution and it is very popular in the BVAR literature, Doan, Litterman and Sims (1984)[14]. The Litterman/Minnesota prior is a prior type based on normal distribution. The MCMC simulation technique used to obtain the parameters of equation (4.11) is the Gibbs sampler.

We apply BVAR to determine impulse responses and forecast variance decomposition on FD given shocks on institutional, economic or social variables. We use the impulse response function to determine the impact of shocks on the present and subsequent values of the dependent variables. According to Pesaran and Shin (1998) a shock to a particular variable does not only affect that variable but passed on to all the other dependent variables via the VAR structure which is dynamic. Consequently, Pesaran and Shin (1998) finds that if the innovations of the error term happening during the same period of time are uncorrelated, then the impulse response interpretation would be straight forward. They note that innovation on a particular variable is then simply a shock to the dependent variable in question.It has been observed by Pesaran and Shin (1998) that innovationsare often correlated, and seen to have a common featurethat cannot be linked with a particular variable and as suchit is common practise to mutate the impulses to make them unconnected for proper interpretation.Given that the transformation is Ω, then:

$$\omega_t = \Omega\varepsilon_t \sim (0, M) \tag{4.13}$$

Where:M is a diagonal covariance matrix.The researcher, discretionally, may include any of the options below for M: the researcher may set the impulses to one unit of one standard

[14] We rely on Litterman (1986) for the formal derivation of the likelihood function, posterior and prior moments. See appendix.

deviation of the residuals; make the impulses statistically independent (orthogonal) by reciprocating the Cholesky element of the error covariance matrix (Lutkepohl, 2007); make general the impulses by constructing a set of statistically independent innovations that does not respond to VAR ordering; determine structural decomposition that makes use of statistically independent transformation projected from structural factorisation matrices (see Gianni and Giannini (1997); Pesaran and Shin (1998); Lütkepohl (2007). More importantly, we compute forecast error variance decompositions of FD to appraise the crucial determinants over a certain time period and their part played in bringing about FD.

4.3 Variable Description and Operationalisation:

4.3.1 Dependent variables

In the hypotheses, we use three dependent variables as proxies for FD to provide the greatest possible insight into the effects of FD. Our primary measures of FD include (i) the share of bank deposits to the GDP (hereafter bank deposits). This includes the total assets held by commercial banks and other financial institutions that deal with demand deposits as a percentage of the GDP.(ii) the share of bank credit to the private sector, expound as the credit issued by banks and other financial intermediaries to the private sector expressed as a percentage of the GDP (hereafter private credit). These do not include credit issued by the government or any of its agencies, the central and developmental banks. This measure encapsulates the activities of financial intermediaries in general that are furnished to the private sector. These two are standard measures of FD used in different studies (see King and Levine, 1993; Huang, 2010; Aggarwal, Demirguc-Kunt and Peria, 2011; Miletkov and Wintoki, 2002, among others). (iii) We include two additional measures[15]; the ratio of commercial bank assets over the sum of commercial bank and central bank and liquid liabilities of banks and non-bank financial intermediaries taken as a percentage of the GDP. Huang (2010) contends commercial bank assets divided by the sum of the assets of commercial bank and central bank (hereafter commercial bank/central bank) taken as a percentage of the GDP elucidates the advantages of the financial system as described above.The study applies liquid liabilities of banks and non-bank financial intermediaries (hereafter liquid liabilities) as one of the proxies for FD.Huang (2010) suggests thatthis indicator measures the size in relation to the economy of financial intermediaries. It includes three types of financial institutions: the central banks, commercial banks and other financial institutions. We follow the view of Levine (1997) that the indicators of FD used in the study

[15] One variable will be dropped in the lower middle and low income group of countries. This would be done depending on how these variables are correlated with each. For the upper income group of countries, the variables are highly correlated so we apply the principal component analysis.

are more appropriate for developing economiesbecause they are skewed more towards bank development than the development of the capital market. The functions of the financial system discussed in the literature review are more likely to be dispensed by banks.

4.3.2 Explanatory variables: potential determinants

The prospective determinants of FD in this study are chosen from a variety sources. These determinants of FD constitute variables that are time-invariant (fixed factors) and those that are time variant (evolve slowly over time) such as the factors that deal with institutions (Huang, 2010) The candidate determinants are grouped into three categories – institutional variables, policy variables and socialvariables.

4.3.2.1 Institutional variables

This study applies some general institutional indicators, with a focus on political institutions and the role they play in affecting on FD. Our primary institutional variables are drawn from the Polity IV Database, Marshall, Jaggers and Gurr (2014) averaged over 1960 to 2013. The different variables include a measure of democracy that reflects the quality of government, the right to vote in public or political elections, political checks and balances and the right to participate in the civil and political life of the society and a state without discrimination or repression.Sometimes this variable is referred to as the “combined polity score”, and it is computed by deducting the autocracy from the democracy score (Marshall et al. 2014). The variables used in computing the democracy and autocracy scores include: (the rule of law, how different groups or organisations compete for political power, transparency in the hiring of executives, non-interference in the duties of the chief executive andlimits on the decision making powers of the chief executive). Each country is ranked on how democratic or autocratic they are based on the aforementioned criteria. The scores are quantified and ranges from 0 to 10. Correspondingly, the polity 2 score ranges from -10 to 10. Higher values suggest more democratic regimes (Marshall et al. 2014).

Our next main institutional variable of interest is the constraint on executives, which according to Glaeser, La Porta, Lopez-de-Silanes and Shleifer (2004) is arguably the appropriate measure of institutions since it measures institutional constraints and not outcomes. Constraint on executives indicates the extent to which the chief executive must take into account the preferences of others when making decisions. Marshall et al. (2014) operationally defines this variable as one that measures thelimits on the decision making powers of the chief executive, whether they are individuals or as a group. Any accountability

group[16] may press on such limitations. In democracies in more developed nations the legislature plays this role. The embracement of democracy has seen African countries adopt legislatures though accountability groups that is in most cases de facto one-party regime. According to Marshall et al. (2014) what is important and concerning, however, are the mechanisms that would ensure checks and balances in the decision making process. Constraint on executives carries a 7 point scale with higher values showing greater independence of the chief executive. For standardisation purposes, we rescale all values to lie between 0 and 100 (as percentages) before estimating the models.

We apply the log of GDP per capita as a measure of the quality of legal institutions and the level of economic development in a country which have been shown to have a positive effect on FD, motivated by the works of La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997, 1998); Beck, Demirguc-Kunt and Levine (2007) and Djankov, McLiesh and Shleifer (2007). The justification behind the use of per capita income as a proxy for legal institutions arises from its association with law enforcement (La Porta et al, 1997, 1998) where the quality of law enforcement improves sharply with the level of per capita income. In related studies, Kaufmann, Kraay and Zoido-Lobaton (1999a), Gurr and Marshall (2000), show a very strong link between income per capita and institutional quality (voice and accountability, regulatory burden, rule of law, graft, constraint on executives and property rights) in advanced and developing economies regardless of the institutional measure used. Applying the aggregate governance index, Kaufmann et al., (1999b) show a very strong positive correlation between per capita income and the aggregate governance index. Therefore, using per capita income as a measure of the quality of legal institutions may have been motivated by its high positive and significant correlation with the quality of law enforcement, institutional quality and the aggregate governance index.

4.3.2.2 Policy variables

To examine whether macro-economic variables, serving as control variables, explain cross-country variations in FD, the study applies a variety of economic and trade indicators. To account for country size and the level of economic development we include the real GDP per capita, defined as the log real GDP per capita (Aggarwal et al. 2011). To capture macro-economic mismanagement and fluctuations the study uses the standard deviation of the annual rate of inflation as proposed by Huang (2010) over 1975-2010. Inflationary effects on FD have been shown by the work of Boyd, Levine and Smith (2001) - they suggest that inflation distorts economic agents' decision making regarding nominal magnitudes,

[16] Other accountability groups may include: the party in power, the military, influential advisers and an independent judiciary.

discouraging financial intermediation, and promoting savings in real assets. Sulaiman (2014), shows evidence that FD is negatively correlated with inflation both in the short and long-run, in a study of the relationship between inflation and FD in Nigeria, Generally, the association between inflation and real economic activity is negative especially with countries where inflation rates are high. Some studies have shown that the threshold levels of inflation do matter and have an effect on FD (See Barnes (2001), Khan, Senhadji & Smith (2001), Keho (2009) among others). Both theoretical and empirical findings suggest that there are thresholds, possibly more than one in the relationship between financial activity and inflation. This is contingent on the specific measure of FD of a country (Sulaiman, 2014). In this study, we consider inflation as a control variable for all income groups and whether or not it would be used in the different models in the different income groups would depend on the results from BMA.

A black market premium[17] according to Fischer (1993) signals a significant imperfection in the exchange market. This, in turn, typically has adverse implications for economic performance. Research has shown that countries with significant black market premiums tend, on average, to have lower rates of economic growth (Fischer, 1993). While there are theoretical studies that show the level effects of black market premium, there has been no study, to our knowledge, that links black market premium to FD. Studies investigating the determinants of FD employ black market premium as one of the battery of control variables suggesting it may be playing an important role in influencing the effect of other variables on FD. For instance, Gupta (1981) argues that an increase in the black market rate (increasing its premium), given the official exchange rate, creates an incentive for residents abroad to channel their remittances through the black market. This increases the receipts in terms of the local currency but decreases the amount of foreign currency accruing to the central bank and reduces the aggregate level of deposits. Aggarwal et al. (2011), Demirguc-Kunt, Lopez-Cordova, Martinez Peria and Woodruff (2011) provide evidence of a positive link between remittances and FD. This suggests that if remittances are channelled through the black market, per se, as a result of an increase in premium, this may negatively affect FD through a decrease in deposits and credit intermediated by the local banking sector. Generally, we contend that exchange market imperfections make it hard for foreign exchange to flow to the most productive activities, thus impairing the allocation of resources and hence FD. We define black market premium as the logarithm of one plus the black market premium divided by 100.

[17] Black market premium: It is calculated as the premium in the parallel exchange market relative to the official market (i.e. the formula is (parallel exchange rate/official exchange rate-1) x100).

According to Cooray (2011), the government's participation in the financial sector can be classified under two views: the political view and the development view. Proponents of the political view include La Porta et al. (1999, 2002) and Lopez-de-Silanes et al. (1997) argue that in a quest to achieve its political objectives a clash of government's interest may lead to dissatisfactory results especially in countries where property rights are not very strong. The development view argues that a strategy that government can use to beat market failure and increase development in developing countries is by decreasing costs and increasing access to finance (Gerschenkron, 1962 and Lewis, 1950). We argue that government expenditure is mostly determined by the political objectives of the government in power to achieve some developmental goals. If this is the case, then government involvement may yield positive or negative outcomes for FD depending on how skewed its policies are towards its political goals with conflicting interests and away from its developmental interest. We measure the size of the government by including government expenditure, defined as log of government spending as a percentage of the GDP (Cooray, 2011).

Chinn and Ito (2002, 2006) find that current and capital account openness are positively affecting FD. To capture this aspect we use openness in the current account defined as the logarithm of one plus trade share, the sum of exports and imports, over GDP. $\{\ln[100(X + M)/GDP]\}$. Capital account openness is captured in the study by foreign direct investments, defined as log of foreign direct investment to the GDP (Do & Levchenko, 2007). Across the balance of payments, these flows intermediated by banks may affect FD. Current theoretical and empirical studies support the view that the level of trade openness in a country is related to both its quality of institutions Levchenko (2007) and its level of FD Beck (2002; Rajan & Zingales, 2003 and Do & Levchenko, 2007). Where trade openness is determined by BMA as an appropriate control variable to be included in the model for an income group, an interraction with democracy is carried out to determine its effect on FD.

4.3.2.3 Social variables

The study applies two social variables in the model – human capital development measured by secondary school enrolment and population. The stock of human capital plays an important role in the process of economic development (see Romer, 1986; Lucas, 1988). We suggest that effective intermediation by banks would be limited given inadequate levels of human capital development. The association may be indirect through its interaction between institutional or policy variables. From the political point of view, the role of human capital development can be interpreted following Lipset's (1960) views, who suggest that human capital leads to more harmless politics and a low incidence of political upheaval or conflict in society. Lucas (1988) argues that the main societal benefit of human capital development is

not improvements in technology but political: courts and legislators replace guns. We infer from this argument and suggest that improvements in political stability brought about by democracy improve human capital development which is conducive for FD. School enrolment and years of schooling have been used as control variables in the literature of the nexus between institutions and FD and as a proxy for human capital development (see Glaeser et al. 2004; Cooray, 2011; Anwar & Cooray, 2012; Vieira, MacDonald & Damasceno, 2012; among others). We define human capital development as the logarithm of secondary school enrolment as in Anwar and Cooray (2012) with the data sourced from the World Development Indicators (2015).

The study uses total population as one of the control variables which measures the size of the market. According to the World Development Indicators (2015) total population is defined following the de facto definition. It includes all those who live permanently in the country irrespective of their legal status or citizenship. It excludes those seeking asylum that are not permanently resident in the country where they are seeking asylum in. Huang (2010) contends that there is a strong connection between the size of the population and the indices of FD. This relationship can be drawn from the fact that smaller economies tend to have higher proportion of liquid liabilities and private credit with a possibility of considerably affecting the general results when analysing panel data (Huang, 2010). Our data, however, does not exhibit this trend. The correlation between liquid liabilities and population [-0.0857(0.30)], private credit and population [-0.012(0.88)] are both negative and insignificant considering the probability values in parenthesis (P>0.05). In this study the level of population is used in logs in order to mitigate heteroscedasticity.

4.4 The Data

The primordial objective of this study is to determine the impact of political institutions, particularly democracy on FD in the SADC region. The main focus of interest is a panel of 10 out of 15 economies in the region over the period 1975-2013. Annual data for a period of 38 years is ample for a panel data study that is characterised by constant change. The sample begins in 1975 due to the availability of financial data. We use a bootstrap-based multiple imputation methodology to deal with any missing data, Honaker and King (2010:563). "What multiple imputations do is to fill in the holes in the data using a predictive model that incorporates all available information in the observed data along with any prior knowledge". The procedure involves creating separate data sets and maintaining the observed data while the missing values are determined using different imputations. The multiple imputation techniquetakes good account ofall information in a data set and hence more appropriatefor conventional statistical procedures; the method does not come up with any new data values

and as such gives precise estimates of uncertain deductions resulting in the process. The fact that the technique does not “manufacture” any data, it gives precise estimates of the unreliability that may stem from any deductions (Honaker & King, 2010).

The data for our dependent variables is obtained from the World Bank’s Financial Structure and Economic Development Database (2015), while that of institutional variables are drawn from the Polity IV Database (Marshall, Jaggers & Gurr, 2014) averaged over 1960 to 2013 The data for our explanatory control variables are obtained from the World Development Indicators (2015) and from the Penn World Table 7.1 (2015). A summary of the different variables, description and sources will be presented in appendix A.

4.5 Empirical Strategy

4.5.1 Why panel data?

The data for each income group is normalised[18] to make comparison easier before we proceed to combining it into a panel dataset. According to Gujarati (2003), panel data has many benefits over cross-section or time-series data: (i) first, since panel data, as in the case of this study, relates to countries over time, thereis non-uniformity in the dataset. The strategies of panel data estimation can effectively deal with such non-uniformity by designating variables that are individual and specific. Second, panel data gives “more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency” (Gujarati, 2003:673). Third, panel data enables more complicated behavioural models and minimises the possibility of bias if broader aggregates were used. Wooldridge (2002) notes that panel data is also used to allow unobserved variables to be correlated with explanatory variables in the panel. In comparison with cross sectional or time series data panel data has the advantage ofbetterimproving the empirical analysis (Wooldridge, 2002)

This is not to suggest that there are no problems with panel data modelling. Pesaran and Smith (1995) observe that the omitted variable and non-uniformity bias is present in panel data regression analysis. This occurs when the unseen country effects are added in the disturbance term, and this creates bias and unreliable estimates. Bonin and Wachtel (2003),

[18] We rescale all numeric variables in the data in the order [0 1]. This is done using the following formula.
$X_{new} = \frac{X - X_{min}}{X_{max} - X_{min}}$ Where X is the variable in the data to be normalized, X_{new} is the normalised variable, X_{min} is the minimum value of the variable in the data and X_{max} is the maximum value of the variable.

argue that a spurious aggregate relationshipwould be generated bymaking country effects unchanging in panel regressions. This makes it inappropriate to advice on policy suggestions from such an extensive comparative analyses.

4.5.2 Model diagnostics

Inferences from panel data are particularly sensitive to model specification and care must be taken to determine the correct estimation method. We carry out several tests to determine the appropriateness of a variety of estimators.

4.5.2.1 Stationarity and unit root test

Gujarati (2003) advances two crucial motives for data to be stationary. First, it minimises the likelihood of spurious OLS regressions. Second, it makes forecasting feasible. Since the main aim of this study is not to forecast, we would require a stationary series in order to avoid any spurious results in our initial analysis. Brooks (2002) argues that the incorporation of variables in a regression that are not stationary make the conventional suppositions of large sample invalid, suggesting that the statistical significance of the variable in question and the overall significance of the model will be flawed. To induce stationarity in a series according to Harris (1995) the series must be differenced a certain number of times. All variables included in our model are checked for stationarity to avoid any stochastic trend in the series and differenced where necessary to induce stationarity.

In a panel dataset, testing for unit root may be challenging but recent statistical advances in panel unit root testing have made it possible to obtain more reliable and valid tests. In general, the panel unit root tests average the Augmented Dickey-Fuller (ADF) tests across the panel. The Im, Pesaran and Shin (1997, 2003) test is probably the most common of the panel unit root tests but requires a balanced panel. The study uses two unit root tests developed by Im, Pesaran and Shin (1997, 2003) (IPS) and Levin, Lin and Chu (2002) (LLC) to investigate the panel time-series characteristics of the variables in the model. These two techniques apply to a balanced panel, which conformsto the balanced panel approach adopted for this study. However, the IPS represents a heterogeneous panel test whereas the LLC can be considered a pooled unit root test.

4.5.2.2 Levin, Lin and Chu Test (LLC)

Levin, Lin, and Chu, (1992, 1993) developed the first unit root test to be applied for panel data analysis. The test is formulated by the following equation:

$$\Delta_{,} = \rho_{t-} + \alpha_{} + \alpha\ t + \iota_{it}, i = ,2,...N, t = ,2,...T \qquad (4.14)$$

the time element (*t*) and individual effects (α) are included. According to Levin et al., (1992, 1993), it is important to note that the known relationships of the variables are an important source of non-uniformity in this model since the coefficient of the lagged regressand is confined to be identical across all units in the panel; u_{it} is assumed to be randomly chosen and follows an additive unchanging autoregressive moving average (ARMA) process for each individual:

$$U_{it} = \sum_{j=1} \quad \iota_{it-} + \cdot_{t} \qquad (4.15)$$

then-th moment prerequisites are supposed toensure the fragile convergence in Phillips (1987) and Phillips-Perron's (Phillips & Perron, 1988) unit root tests. The LLCconsiders sub categories of model (4.14), which are all estimated by OLS as pooled regression models.

Levin et al. (1992, 1993) notes that equation (4.14) makes provisionfor fixed effects for bothunits and time trends. When unit fixed effects are used it brings about non-uniformity in the data since the coefficient of the lagged regressand is confined to be the same across all units of the panel. The LCC test surmisesidentical autoregressive coefficients between individuals i.e. $\rho_i = \circ$ for all i, and test the null hypothesis $H_0 : P_i = \rho =)$ against the alternative hypothesis $H_a : \rho_i = \rho <)$ for all i.

The LLCtest, however, is not without its drawbacks. Maddala and Wu (1999) contend thatsince the test relies heavily on the on the independent and identically distributed supposition, its applicability to cross sectional data where correlation among the variables is present becomes flawed. Another significant demerit of the test lies in the fact that the parameters are considered homogenous across the panel.

$$H_0 : \rho = \rho = .. = \rho_N = \rho =)$$
$$H_0 : \rho = \rho = .. = \rho_N = \rho <) \qquad (4.16)$$

Maddala and Wu (1999) warn that under some circumstances, the null makes sense but as for Maddala (2001) the alternative hypothesis is too strong to be considered in empirical case. This drawback has been dealt with by the *IPS* (1997, 2003) test, who developed a unit root test that does not take into account the homogenous first-order supposition under the alternative hypothesis.

4.5.2.3 Im, Pesaran and Shin Test (IPS)

The Im-Pesaran-Shin (1997) test extends the LLC configuration to accommodate non-homogeneity in the value of the change in the response variable ($\Delta Y\ under\ it$)in the alternative hypothesis.

The IPS equation is algebraically presented as follows:

$$\Delta y_{it} = \alpha_{0i} + \beta_i y_{it-1} + \sum_{j=1} \Delta_{i-} + \varepsilon_{it} \qquad (4.17)$$

Where, $i = 1,2,\ldots\ldots N,$ and $t = ,2\ldots\ldots T$

The null and alternative hypothesis can be written as:

$H_0 : \rho_i =)$ For all i against the alternative:

$H_a : \{\rho_i <)$ For all $i = \ ;\ldots, N$

$\{p_i =)$ For $i = N_1 + ,\ldots, N$ with $0 < N_1 \leq N$

The representation, therefore, makes provision for some of the series, not all, to possess unit roots. The IPS test hence computes different unit roots for the different cross-sectional units (*N*). It then defines their *t*-bar statistic as a straightforward mean of the individual ADF statistics, t_{iT} , for all the null as:

$$\bar{t} = \frac{1}{N}\sum_{I=1}^{N} t_{iT}$$

(Im et al. 1997, 2003). The *IPS t*est assumes that *iT t* are independent and identically distributed (*i.i.d*) random variables that possess finite first and second moments. Therefore, applying the Lindeberg-Levy central limit theorem, which guarantees the convergence of *t*-bar to a normal distribution as the sample size increases (*N*→ ∞) under the null hypothesis. A uniformity of the *t*-bar statistic is done by IPS (2003) by working out values for the mean and variance using Monte Carlo techniques for the values of *T* and *p si′*.

As a result, IPS (2003) test suggest that under the null hypothesis, all the series in the panel are considered as having a non-stationary process while under the alternative hypothesis; a fraction of the series in the panel is assumed to be stationary. This deviates from the LLC test, which supposes that all series in the panelexhibit constant mean variance autocorrelation etc. under the alternative hypothesis. The level errors and i, t are assumed to affect their future levels with different properties and differing variances across units (Im et al. 1997, 2003).

The *IPS* test considers the use of a group-mean Lagrange multiplier (LM) statistic to test the null hypothesis. The ADF regressions are computed for each unit and a standardised statistic computed as the mean of the LM test for each equation. The IPS test also suggests the use of a group-mean *t*-bar distribution, where the statistics from each ADF test are averaged across the panel and adjustment factors are needed to translate the *t*- distribution of t-bar into a normal distribution under the null hypothesis. The IPS test demonstrates that it has better finite sample performance than the LLC test. (Im et al. 1997, 2003).

The results of group unit root tests for all the variables used in the study (institutional, policy and social variables) are reported in chapter 5. We report only the group unit root test results for brevity. The unit root test for individual variables are reported in appendix B.

4.5.2.3 Bayesian Model Averaging (BMA)

A considerable number of studies have been executed to determine the sources of FD culminating in a large number of candidate factors. These determinants that have been used to establish different theories under specific settings and suggest that the occurrence of one determinant does not preclude the occurrence of another, thereby, raising the robustness of the determinants in any cross-section regression used to explain FD (Huang, 2010). This raises the problem of model uncertainty which has been mitigated by the application of BMA, one of the most famous methods among others (Huang, 2010). It has been applied to rigorously test the results of cross-country growth regressions following the ground-breaking works by Levine and Renelt (1992), Sala-i-Martin (1997a, b), Fernandez, Ley and Steel (2001) and Sala-i-Martin, Doppelhofer and Miller (2004).

According to Huang (2010), in BMA possible models are determined by applying Bayesian techniques and the unpredictability about each model are epitomized using probability distributions. He suggests that the mean of all parameters' posterior distribution under the possible models are determined with weights attached. These weights are the Posterior Model Probabilities (PMPs) which is the conditional probabilities that are assigned after the relevant evidence is taken into account.Bayes factors (the relative evidence in the data) are needed to calculate the PMP needed to evaluate the possible models. An estimate to the Bayes factor is the Bayesian Information Criterion (BIC), (Huang, 2010). The derivation of BMA is described below.

We apply a version of BMA in this study suggested by Raftery, Madigan and Hoeting (1997). This version treats all the models that show the least-fit as having a zero PMP. Objectively,

they suggest that the principle of parsimony is used and applying the Occam's Window technique the number of models is greatly reduced though with the presence of model uncertainty. The posterior probabilities for the models with proper fit are then calculated and then the models with the worst fit are excluded by the Occam's Window (Raftery, et al. 1997). In this study we use the variables of the best five models generated using the bicreg software for R (Hoeting, Raftery & Volinsky, 1999). The cumulative posterior probability of the five best models is calculated during the computational procedure. Huang (2010) follows Raftery (1995), Sala-i-Martin et al. (2004) and Malik and Temple (2009) on deriving the posterior probability of inclusion in BMA as shown below.

Consider that there are so many models given by, $\{X_1, \ldots X_m\}$ and the data is given by Z. The vector of parameters (ω) for every model is given by $\beta_i = (\beta_{i1}, \beta_{i2} \ldots \beta_{i\omega})$, i = 1, 2 . . . m. The procedure is as such that the first model is obtained by constraining some of the parameters of the second model or not (nested models). The unknown parameters are treated in the Bayesian framework as random variables.
Let us consider the parameter of interest be denoted by y.The posterior distribution of y given data Z is derived according to the following rule.

$$P(y|Z) = \sum_{i=1}^{m} P(y|Z, X_m) P(X_m|Z) \qquad (4.18)$$

$P(X_k|Z)$ denotes the Posterior Model Probabilities and $P(y|Z,X_k)$ represents the posterior distribution of y given the data Z and model X_k.

Equation (4.18) contains all relevant information required to make inferences on y. This indicates that the posterior distribution of y given data Z is a weighted average of its posterior distributions given data Zfor every specific model. Applying Bayes' theorem we obtain an expression for the posterior is given by:

$$P(X_m|Z) = \frac{P\ Z\ X_m\ PX_m}{\sum_{1}^{m} Z\ X_i\ PX_i} \qquad (4.19)$$

Where:

$P(X_m)$ isthe prior probability of model i (i = 1, 2 . . . m),
$P(Z|X_i)$ is the probability of the data given X_i, alternatively regarded as the likelihood for model X_i

Given that $P(X_1) = P(X_2) = \cdots P(X_m) = \frac{1}{m}$., suggesting that no preference is given to any model, thePosteriorModeProbabilities $P(X_m|Z)$ boils down to:

$$P(X_m|Z) = \frac{P\ Z\ X_m}{\sum_{1}^{m} Z\ X_i} \quad (4.20)$$

Identifying the value of $P(Z|X_m)$ would require a comparison ofmodel X_m with a baseline model (X_0), (a null model). A null model, often used as a baseline model represents one in which no regressors are included.

Consider that $\propto_{m0}$ be the Bayes factor for model M_k against model M_0, that is

$$\propto_{m0} = \frac{P\ Z\ X_m}{P(Z|X_0)} \quad (4.21)$$

Then

$$2 \log \propto_{m0} = 2 \log P(Z|X_m) - 2 \log P(Z|X_0) \quad (4.22)$$

Following Raftery's (1995) approach, multiplying the logarithm of the data evidence by two, given by("2 log $\propto_{m0}$"), can be intimated as an estimation of the difference between the values for BIC for the baseline model and model $X_m$as expressed below:

$$2 \log \propto_{m0} \approx BIC_0 - BIC_m \quad (4.23)$$

Given that $BIC_0 = 0$ provides an estimation for the posterior probability $P(Z|X_m)$, which is

$$P(Z|X_m) \propto \exp(-\frac{1}{2} BIC_m) \quad (4.24)$$

Then an expression for thePosteriorModeProbabilities $P(X_m|Z)$ yields

$$P(X_m|Z) \approx \frac{\exp(-\frac{1}{2} BIC_m)}{\sum_{i=1}^{m} \exp(-\frac{1}{2} BIC_i)} \quad (4.25)$$

The cumulative posterior probabilities of inclusion of the significant variables of the five best models are automatically calculated using the bicreg software for R and reported for each income group in chapter five. The significant variables for the best model serve as our explanatory variables when we estimate the different models to explain FD for each income group.

4.5.2.4 Pooling of data and the panel poolability test

We need to determine whether the observations from the different income groups can be mergedor alternatively set apart across time and country. We determine whether the panel of countries be treated as homogenous or not.According to Gujarati (2003), combining all observations as a single group across time while assuming that there are no varying effects by country would suggest a pooled analyses. We make use of the F-test to evaluate statistically whether there exists a difference between pooling and non-pooling of observations worthy of attention. The hypothesis testing for pooling suggest a null hypothesis stipulating that there is no dissimilarity of any significance (Gujarati, 2003)

When testing for poolabilitynull hypothesis assumes that the slope coefficients are identical. In panel data models Gujarati (2003) employs an F-test to determine poolability across sections. To carry out the F-test we save the sum of squared residuals for both the restricted model (SSE_r) and the unrestricted model (SSE_u) after running an OLS regression for each cross section.We may conclude that the restricted model is a pooled model if the test applies to all the coefficients including the constant, otherwise, a fixed one way model with fixed effects that are cross-sectional.

We follow Gujarati (2003) in determining the value of the F (calculated F). If N and T represents the number of cross-sections and time periods respectively, then the number of observations is n=NT. Given that k be the number of explanatory variables excluding the constant, we can determine the degree of freedom for the unrestricted model to be df_u = n-N(k+1). If the constant is included then the degree of freedom for the restricted model becomes df_r=n-k-1 and the number of restrictions is q=(N-1)(k+1). If however the restricted model is the fixed one-way model, the degree of freedom is df_r = n-k-N and the number of restrictions is q=(N-1)k. The F test is thus presented as follows: Given that $SSE_r=R_r$ and $SSE_u=R_u$, then:

$$F = \frac{(R_r - R_u)/q}{R_u/df_u} \sim F(q, df_u) \qquad (4.26)$$

The test in this study applies to all coefficients including the constant, which implies that the restricted model is the pooled model (Gujarati, 2003).

Beck and Katz (2004) argue that the F-test often rejects pooling of which the benefits of pooling outweigh the costs and that the crucial decision is whether the observation is generated by the same process as the others. Grouping the countries under study according to income levels tends to suggest homogeneity to a greater extent in economic, political and

to a lesser extent social policies. We lean towards Beck and Katz (2004) in this respect and estimate a pooled model for every income group – a fixed effects model as against a random effects model. In estimating a fixed effects model, we assume that the slope multipliers are the same and the intercepts may vary across countries. We use a series of dummy variables to account for differences in coefficients, Gujarati (2003). However, with very large panels, the huge volume of dummy variables depletes many of the degrees of freedom from the model and may also have difficulty in determining the effect of time-invariant variables. Essentially, a Hausman test is often applied to decide whether to estimatea fixed effects model ora random effects model Hausman (1978). The pooling tests results are reported in chapter five.

4.5.2.5 Autocorrelation and Heteroskedasticity

In order to avoid the violation of these two classical assumptions when dealing with OLS estimators we executed econometric tests for autocorrelation and heteroskedasticity on our model. Autocorrelation can be thought of as the interdependence between the residuals of a time-series data which renders the OLS estimators no longer unbiased, i.e. of low variance for possible values of the parameters (Gujarati, 2003). According to Toll, Mignon and VanZyl (2003) autocorrelation may arise when economic variables exhibit trend and cycles or when certain important variables are excluded from non-linearity in the data. When autocorrelation is present then OLS estimates become inefficient and necessitate the use of generalised least square estimators (Toll, et al., 2003). The Breusch-Godfrey serial correlation LM test is applied to test for autocorrelation since it provides more accurate results than the DW statistic (Gujarati, 2003).

Gujarati (2003) suggests that the presence of heterokesdasticity violates the assumption of equal variance in the data and thatin a panel dataset the presence of heterokesdasticity means the variance of one country will not be the same across all countries. The use of Ordinary Least Squares estimation when there is heteroskedasticity implies that more weight is placed on the estimations with large mean square errors than on those with small mean square errors, rendering the least square parameters inefficient, though unbiased and consistent (Gujarati, 2003). Transforming the variables by incorporating the natural log of explanatory variables, which has been done in this study, can correct for heterokesdasticity. We expect no heteroskedasticity in the model though this is confirmed using the Breusch-Pagan-Godfrey Test. The results for the test of autocorrelation and heteroskedasticity are reported in appendices C and D.

4.5.2.6 Dealing with endogeneity, omitted variable bias, estimation risk and sample bias.

Aggarwal et al., (2011) points out that the data may experience the econometric problems of endogeneity, omitted variable bias. Theoretically we, expect some simultaneity between financial market development and political development and also unobserved factors that have effects on political development and financial market development.

The potential for endogeneity biases may arise from measurement error, reverse causation and omitted variables, Aggarwal et al (2011). Endogeneity occurs when there are some degrees of simultaneous interaction between dependent and independent variables. These suggest that the endogenous variables may be correlated with the disturbance term, Nickell (1981) and may result in inconsistent estimates if Ordinary Least Square estimators re used. Omitted variables are also likely to result in inconsistency and biased results.

To address these problems, a more general approach would involve the use of instrumental-variables – variables that are highly correlated with the endogenous variable and uncorrelated with the disturbance term and cannot act directly on the dependent variable - have been suggested more currently by Blundell and Bond (1998). It is a difficult process finding variables that meet such requirements especially when appropriate external instruments have to be sought. Instrument variable regressions (IV regressions) have been used in an attempt to redress the potential for endogeneity arising from measurement error, omitted factors, and/or reverse causation, though to a limited extent because the potential for bias sometimes still prevails (Roodman, 2009).

Once an appropriate instrument is found within the model, it can be estimated applying the GMM estimator. This method has been improved upon with time by introducing lags of endogenous variables as instruments Anderson and Hsiao, (1982) and much later by Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998), to what is now popularly known as the difference and system GMM estimator. The Arellano-Bond approach uses lagged values of endogenous variables as instruments, which proved to be weak according to Arellano and Bover (1995), and Blundell and Bond (1998). To handle the weak instrument problem they assume that the mean is stationary and proceed and integrate the initial difference equations with appropriate lagged level instruments and lagged first difference instruments.Huang (2010) points out that the first difference instruments are weak in the presence of persistent data and suggest that the system GMM estimator is much more efficient. We apply the GMM, difference and system GMM to this study to address these problems.

One of our objectives is to determine how shocks in institutional and policy variables affect FD. We apply the Bayesian Vector Autoregressive Model to achieve this objective. Bayesian models assume that parameters are variables generated from the posterior distribution. Apart from taking care of the curse of dimensionality in BVAR models suggested by Banbura, Giannone and Reichlin (2010), Muteba (2017) suggests that generally Bayesian models account for estimation risk and sample bias which previous studies on finance growth and finance institution association have benignly neglected. Bayesian inferences in the study account for model uncertainty, estimation risk and sample bias. It also accounts for the problem of over parameterisation and provides better forecasts (Sevinç & Ergûn, 2009)

4.6 Conclusion:

The chapter begins by specifying the models to be employed to analyse the relationship between institutions and FD. Our initial analysis systematically presents four models widely used in the literature – the classical OLS, GMM, difference GMM and system GMM. We then introduce the Markov switching and BVAR models to the FD literature to determine the probability of switching between regimes of weak or low FD and high FD and how shocks in the social and economic variables affect FD respectively. We suggest the results may inform policy in the countries of the different income groups. All the explanatory variables used in the different models are determined objectively by using Bayesian Model Averaging. The chapter also describes the various sources of data from which the variables were obtained, the necessary data transformation and the procedure in dealing with missing data. Panel model techniques and the various methods of dealing with endogeneity, omitted variable bias, estimation risk and sample bias are discussed. Having discussed the analytical framework, the study heads on to apply them using three FD indicators for each income group and a battery of control variables to determine the effect of democratic institutions on FD. The analyses will be done in accordance with our three main objectives of the study.

CHAPTER 5

DATA ANALYSIS AND EMPIRICAL FINDINGS

5.1 Introduction:

In this chapter, the study presents the econometric analysis and the empirical findings from the three income groups (upper middle, lower middle and low-income) using the models and the methodology discussed in the previous chapter. Thus, for each income group the chapter employs OLS, GMM, difference and system GMM estimators to determine the effect of democratic institutions on FD. For each income group we apply BVAR to show how innovations in institutional variables affect FD together with the variance decomposition for each variable. The effect of the institutional variables is compared to those of the real variables that are determined by BMA for each income group. Finally, we apply the Markov Switching Model with constant volatility to determine the probabilities of moving from a state of weak or low state of FD to a state of high FD and the expected duration of being in a particular state of FD. The chapter is divided into six sections, including the introduction and conclusion. Generally the empirical findings and analyses will be based on the objectives[19] of the study. The empirical findings in section two will be based on the first objective of the study. The panel regression results would inform our findings. Before proceeding with the panel regressions, we execute BMA to select our explanatory variables. We proceed with descriptive statistics, correlations of the determined institutional and policy variables used as controls in the models. This section will further include poolability tests, stationarity tests and the tests for autocorrelation and heteroskedasticity[20]. To achieve the second objective of the study, section three will analyse the findings of the Markov Switching model. The third objective is achieved in section four by analysing the impulse responses of shocks to institutional variables on FD using BVAR. Section five assesses the effect of increasing democratisation on FD and section six concludes. All tables and graphs in this section are the author's own determination using data from the sources stipulated in appendix A.

5.2 Empirical findings and analysis for all income groups based on panel regression results.

In this section, the study presents the findings and analysis for all the income groups based on the panel regression results. We first present the results of BMA that determine the key policy and social variables to be applied as control variables for the income groups, followed by descriptive statistics and correlations, stationarity and poolability tests.

[19] These objectives were outlined in chapter 1; page 15.
[20] Heteroscedasticity and Autocorrelation tests are reported in appendices C and D respectively.

5.2.1 BMA for upper middle, lower middle and low income countries:

To determine which control variables are to be used in the model each time we use a different proxy (bank deposits, liquid liabilities and private credit[21]) for FD, we apply BMA. Before applying BMA, pools of 16 determinants that are widely used in the literature are identified common for all income groups[22]. The variables presented in the table are those of the five best models which could either be positively or negatively associated with FD. Nuisance parameters are marginalised out of the joint posterior distribution (Huang, 2010). A variable that is conspicuously absent for the upper and lower middle income countries after applying all three proxies for bank development in BMA is inflation. Boyd et al., (2001) finds evidence indicating negative association between inflation and both banking sector development and equity market activity. This could suggest that the low rate of inflation is having a minimal negative effect on FD for these groups of countries. The results indicate that for upper middle income countries the control variables include: population, school enrolment, government expenditure, per capita income and the lags of private credit and liquid liabilities. For the lower middle income group, the results suggest that the control variables include: per capita income, school enrolment, black market premium, foreign direct investment, population, government expenditure and the lags of private credit and liquid liabilities. Finally, the control variables determined for the low income group include: school enrolment, foreign direct investment, inflation, trade openness, government expenditure and per capita income and lags of bank deposits and liquid liabilities. From the BMA findings, per capita income, school enrolment and government expenditure appear as significant controls for all income groups. Any control variable with a posterior probability of inclusion of less than 10 percent is excluded from the model except the institutional variables of interest. Their posterior probability of inclusion together with their mean and standard deviation are presented in tables 4.1a, 4.1b and 4.1c below.

[21] These three proxies for financial development were determined by using principal component analysis in chapter 4 (section 4.3.1). The first principal component is associated with bank deposits; the second principal component is associated with liquid liabilities while the third is associated with private credit analysed from the factor scores.

[22] The determinants include: executive constraints, procedural democracy, substantive democracy, autocracy, black market premium, FDI, trade openness, population, school enrolment, government expenditure, GDP per capita, inflation, lag GDP per capita and lags of dependent variables.

Table 4.1a: Upper middle income –Results from BMA

Variables	P!=0	EV	SD	Parameter estimates (sign)
[Bank deposits]- 36 models selected with (CPP) of 0.4554				
Constraint on executives	33.2	0.06	0.10	(+)
Polity IV	34.9	-0.02	0.03	(-)
S Polity IV	75.0	-0.16	0.12	(-)
Population	100.0	0.19	0.05	(+)
School enrolment	100.0	0.18	0.04	(+)
Government expenditure	100.0	-0.18	0.04	(-)
Per capita income	100.0	-0.02	0.03	(-)
[Private credit] – 21models selected with CPP of 0.5828				
Constraint on executives	100.0	-0.29	0.06	(-)
Autocracy	7.1	0.01	0.06	(+)
S Polity IV	100.0	0.27	0.06	(+)
Population	7.2	0.00	0.01	(-)
Per capita income	100.0	-0.02	0.05	(-)
Lag private credit	100.0	-0.31	0.07	(-)
Government expenditure	52.0	-0.01	0.02	(-)
[Liquid liabilities]- 31 models were selected with CPP of 0.4497				
S Polity IV	25.5	-0.04	0.09	(-)
Autocracy	85.5	-0.77	0.44	(-)
Per capita income	23.5	-0.05	0.11	(-)
Lag liquid liabilities	100.0	0.49	0.08	(+)

Notes: the dependent variables are in parenthesis. BMA yields P!=0 which shows the posterior probability that the variable is in the model (in%). The column headed "EV" shows the BMA posterior mean, and the column headed "SD" shows the BMA posterior standard deviation for each variable. The last column shows the signs of the parameter estimates of the best 5 models found. The variables of the best 5 models are selected together with their cumulative posterior probability (CPP) of inclusion.

Table 4.1b: lower middle income - Results from BMA

Variables	P!=0	EV	SD	Parameter estimates (sign)
[Bank deposits]- 27 models selected with (CPP) of 0.5429				
Constraint on executives	54.1	-0.52	1.98	(-)
Autocracy	50.3	0.04	0.05	(+)
Black market premium	48.0	0.36	0.01	(-)
Per capita income	100.0	0.47	0.08	(+)
[Private credit] – 33 models selected with CPP of 0.4290				
Constraint on executives	100.0	80.45	6.71	(+)
Autocracy	14.2	-0.01	0.03	(-)
Polity IV	41.8	0.03	0.05	(+)
Black market premium	100.0	-80.52	6.71	(-)
School enrolment	100.0	0.76	0.09	(+)
Lag private credit	100.0	0.94	0.05	(+)
Foreign direct investment	19.7	0.09	0.25	(+)
Government expenditure	58.0	-0.32	0.22	(-)
[Liquid liabilities]- 22 models were selected with CPP of 0.5384				
Polity IV	18.8	0.02	0.05	(+)
Autocracy	17.6	-0.02	0.07	(-)
Per capita income	21.4	0.07	0.15	(+)
Lag liquid liabilities	100.0	-0.41	0.09	(-)
Population	24.1	-0.06	0.13	(-)

Notes: the dependent variables are in parenthesis. BMA yields P!=0 which shows the posterior probability that the variable is in the model (in%). The column headed “EV” shows the BMA posterior mean, and the column headed “SD” shows the BMA posterior standard deviation for each variable. The last column shows the signs of the parameter estimates of the best 5 models found. The variables of the best 5 models are selected together with their CPP of inclusion.

Table 4.1c: Low income - Results from BMA

Variables	P!=0	EV	SD	Parameter estimates (sign)
[Bank deposits]- 22models selected with (CPP) of 0.5798				
Constraint on executives	12.0	0.02	0.07	(+)
Autocracy	100.0	-2.39	0.28	(-)
Inflation	39.0	3.39	5.12	(+)
Lag bank deposits	100.0	0.47	0.08	(+)
S Polity IV	100.0	0.52	0.09	(-)
FDI	8.3	0.23	1.08	(+)
[Private credit] – 27 models selected with CPP of 0.4982				
School enrolment	49.0	-0.27	0.34	(-)
Trade openness	93.0	-96.74	43.28	(-)
Government expenditure	89.0	-0.39	0.21	(+)
Per capita income	100.0	-2.92	0.73	(-)
Inflation	8.0	0.56	2.51	(+)
[Liquid liabilities]- 34 models were selected with CPP of 0.4676				
Polity IV	100.0	-1.03	0.29	(-)
School enrolment	34.3	-0.19	0.31	(-)
Government expenditure	72.3	-0.39	0.31	(-)
Lag liquid liabilities	21.8	-0.03	0.07	(-)

Notes: the dependent variables are in parenthesis. BMA yields P!=0 which shows the posterior probability that the variable is in the model (in%). The column headed "EV" shows the BMA posterior mean, and the column headed "SD" shows the BMA posterior standard deviation for each variable. The last column shows the signs of the parameter estimates of the best 5 models found. The variables of the best 5 models are selected together with their CPP of inclusion.

5.2.2 Correlation and descriptive statistics of key policy and social variables for each income group:

The descriptive statistics of the economies of the upper middle income countries portray some heterogeneity with respect to foreign direct investment, population and black market premium. However, significant homogeneity of these economies is found with per capita income, trade openness, government spending and school enrolment. These suggest that though these countries are within the same income group, they may differ in certain economic and social characteristics. Though these countries fall within the same income group, South Africa and to a lesser comparative extent, Mauritius, have significantly more developed economies as opposed to Botswana and Namibia. Correlation among the variables is weak and sometimes negative. However, school enrolment and GDP per capita and government spending show a relatively high positive correlation, consistent with conventional wisdom that these three variables are closely associated. An increase in government expenditure (a fundamental component of the GDP) on human capital development which often takes centre stage in the governments' expenditure programmes in

developing economies has a positive effect on economic growth (Idenyi, Onyekachi & Ogbonna, 2016)

The economies of the lower middle income countries exhibit significant homogeneity with respect to trade openness, school enrolment, and government expenditure. However, heterogeneity of the economies of this income group is found when considering GDP per capita, inflation, population, foreign direct investment and black market premium. These suggest that these countries though within the same income group may differ in certain economic and socialfeatures. The social and economic variables generally exhibit very low and sometimes negative correlation. Per capita income, trade openness and government spending, however, are highly positively correlated suggesting a close relationship where government spending is thus directed more towards economic growth and encouraging foreign trade in an increasingly globalised world economy.

The descriptive statistics of the low income countries show some heterogeneity with respect to FDI, inflation, school enrolment and black market premium. However, significant homogeneity of the economies of this income group is found with respect to government spending, population, trade openness and GDP per capita. Again these results suggest that though these countries are within the same income group, they may differ in certain economic and social characteristics. Correlation among the social and economic variables is found to be low and sometimes negative with the exception of population and trade openness showing a relatively high correlation. The correlation between country size (population) and openness is well documented. Murphy, Shleifer and Vishny (1989) argues that market size determines the extent to which firms can benefit from each other through positive spill overs in a globalised setting.The correlation between school enrolment and government expenditure suggests the governments' prioritised spending towards human capital development. One may conclude from Rahman's (2013) inferences on the relationship between GDP, GDP per capita, unemployment and literacy rates that the high correlation between GDP per capita and school enrolment may suggest that appropriate policies to increase the literacy rate of a country through high rates of school enrolment will reduce unemployment and increase GDP per capita. These may be having a positive feedback effect on FD and growth. Tables 5.1a and 5.1b; 5.1c and 5.1d; 5.1e and 5.1f below show the descriptive statistics and correlations of time-varying control variables for the upper middle, lower middle and low income countries respectively.

Table 5.1a: Correlation table with probabilities for key policy and social variables in the upper middle income countries

Correlation / Probability	GDP per capita	Inflation	Trade openness	Government expenditure	School enrolment	Population	Foreign direct investment	Black market premium
GDP per capita	1.000000							

Inflation	-0.053945	1.000000						
	(0.5222)	-----						
Trade openness	-0.229181	-0.182730	1.000000					
	(0.0059)	0.0289	-----					
Government expenditure	0.392452	-0.277903	-0.072183	1.000000				
	(0.0000)	(0.0008)	(0.3916)	-----				
School enrolment	0.860850	-0.037974	-0.498888	-0.350871	1.000000			
	(0.0000)	(0.6525)	(0.0000)	(0.0000)	-----			
Population	0.334777	0.156958	-0.801771	-0.181012	0.611507	1.000000		
	(0.0000)	(0.0612)	(0.0000)	(0.0305)	(0.0000)	-----		
Foreign direct investment	0.238205	-0.088807	0.065787	-0.101575	0.121958	-0.040697	1.000000	
	(0.0042)	(0.2915)	(0.4350)	(0.2274)	(0.1468)	(0.6294)	-----	
Black market premium	-0.142547	0.001517	0.225748	0.016617	-0.211392	-0.068565	0.090599	1.000000
	(0.0894)	(0.9857)	(0.0067)	(0.8438)	(0.0113)	(0.4158)	(0.2819)	-----

Notes:The variables are defined in sections 4.2.1.2 and 4.2.1.3 in chapter 4. The values in brackets are the probabilities.

Table 5.1b: Descriptive statistics of key policy and social variables in the upper middle income countries

	GDP per capita	Inflation	Trade openness	Government expenditure	School enrolment	Population	Foreign direct investment	Black market premium
Mean	2699.510	8.309207	88.77503	20.43626	61.57072	10092015	1.712209	6.255639
Median	2598.513	8.032797	91.79650	19.46003	63.31561	1506037.	0.079947	3.941658
Maximum	5180.968	41.99951	140.0978	35.43803	95.69964	49320150	210.0531	42.44000
Minimum	785.8697	0.406950	33.86652	10.45355	14.57889	821942.0	-2.966545	-28.21000
Std. Dev.	914.0991	5.110084	29.01203	5.746800	20.98228	15867808	17.56189	10.97276
Observations	151	151	151	151	151	151	151	151

Notes: The variables are defined in sections 4.2.1.2 and 4.2.1.3 in chapter 4

Table 5.1c: Correlation table with probabilities for key policy and social variables in the lower middle income countries

Correlation / Probability	GDP per capita	Inflation	Trade openness	Government spending	School enrolment	Population	Foreign direct investment	Black market premium
GDP per capita	1.000000							

Inflation	-0.285114	1.000000						
	0.0028	-----						
Trade openness	0.779491	-0.429487	1.000000					
	0.0000	0.0000	-----					
Government spending	0.713070	0.014289	0.403975	1.000000				
	0.0000	0.8833	0.0000	-----				
School enrolment	0.308061	-0.395455	0.390826	-0.069975	1.000000			
	0.0012	0.0000	0.0000	0.4718	-----			
Population	-0.520953	0.274214	-0.759427	-0.326098	-0.315763	1.000000		
	0.0000	0.0041	0.0000	0.0006	0.0009	-----		
Foreign direct investment	-0.114932	-0.094374	-0.094698	-0.194273	0.287527	0.030941	1.000000	
	0.2362	0.3313	0.3296	0.0439	0.0026	0.7506	-----	
Black market premium	-0.406182	0.206995	-0.532000	-0.217169	-0.310163	0.458130	-0.000900	1.000000
	0.0000	0.0316	0.0000	0.0240	0.0011	0.0000	0.9926	-----

Notes: The variables are defined in sections 4.2.1.2 and 4.2.1.3 in chapter 4. The values in brackets are the probabilities

Table 5.1d: Descriptive statistics of key policy and social variables in the lower middle income countries

	GDP per capita	Inflation	Trade openness	Government expenditure	School enrolment	Population	Foreign direct investment	Black market premium
Mean	1367.424	29.67699	101.5083	21.62136	31.46991	3705868.	0.306168	41.45769
Median	1055.026	13.34872	111.7527	19.56947	31.98386	1714590.	0.000000	10.27500
Maximum	4223.082	542.5762	191.9663	39.83057	58.11352	12926409	6.764707	600.0000
Minimum	314.3101	3.437884	14.26850	8.827588	5.260414	517024.0	-1.311630	-107.4318
Std. Dev.	1080.315	58.70193	58.20152	8.225601	11.77533	3741700.	0.977895	93.99152
Observations	113	113	113	113	113	113	113	113

Notes: The variables are defined in sections 4.2.1.2 and 4.2.1.3 in chapter 4.

Table 5.1e: Correlation table with probabilities for key policy and social variables in the low-income countries

Correlation Probability	GDP per capita	Inflation	Trade openness	Government spending	School enrolment	Population	Foreign direct investment	Black market premium
GDP	1.000000 -----							
INFLATION	0.034523 (0.7228)	1.000000 -----						
TOPEN	-0.038381 (0.6933)	0.144122 (0.1367)	1.000000 -----					
GOV	0.256758 (0.0073)	-0.118421 (0.2222)	-0.047704 (0.6239)	1.000000 -----				
SCH	0.240164 (0.0123)	-0.263703 (0.0058)	-0.356419 (0.0002)	0.397095 (0.0000)	1.000000 -----			
POP	-0.032205 (0.7407)	-0.041713 (0.6682)	0.428091 (0.0000)	-0.463658 (0.0000)	-0.136426 (0.1592)	1.000000 -----		
FDI	-0.178284 (0.0649)	-0.058935 (0.5446)	0.232310 (0.0155)	0.014037 (0.8854)	0.140101 (0.1481)	0.104075 (0.2838)	1.000000 -----	
BMP	-0.059862 (0.5383)	0.082648 (0.3951)	0.061578 (0.5267)	-0.075488 (0.4375)	-0.197349 (0.0406)	0.135897 (0.1608)	-0.059072 (0.5437)	1.000000 -----

Notes: The variables are defined in sections 4.2.1.2 and 4.2.1.3 in chapter 4. The values in brackets are the probabilities.

Table 5.1f: Descriptive statistics of key policy and social variables in the low-income countries

	GDP per capita	Inflation	Trade openness	Government expenditure	School enrolment	Population	Foreign direct investment	Black market premium
Mean	284.1519	54.05327	51.76603	15.15605	16.99884	11931102	0.019063	308.6332
Median	197.1479	17.75671	46.97866	15.07680	13.52122	11867336	0.000000	56.77000
Maximum	567.4543	1096.678	187.3392	31.55443	49.50807	23390765	0.836936	4806.890
Minimum	126.1884	1.024222	19.36594	2.047121	0.000000	5301861.	-0.283145	-2578.242
Std. Dev.	153.7380	133.5411	26.57583	4.570875	14.17488	4109034.	0.105681	983.2058
Observations	113	113	113	113	113	113	113	113

Notes: The variables are defined in sections 4.2.1.2 and 4.2.1.3 in chapter 4.

5.2.3 Correlation and descriptive statistics of financial development indicators

The four measures of FD exhibit very low positive and in some cases negative correlation in the lower middle and low-income countries (see table 5.2a below). In the upper middle income countries, bank deposits, private credit and liquid liabilities exhibit significantly very high positive correlation with each other while the correlation between commercial bank/central bank with bank deposit, private credit and liquid liabilities is relatively low but significant. Generally, the FD indicators are highly correlated in the upper middle income

countries. We apply the Principal Component Analysis[23] Hotelling (1933) to reduce the dimensionality of the correlated banking measures by expressing their common variation through their principal components. The principal components are orthogonal to each other so that each of them measures a particular aspect of banking quality (Hotelling, 1933). Based on the maximum likelihood method and scree plot, the first three principal components account for 97% of the variance in the data. The first principal component is associated with bank deposits; the second principal component is associated with liquid liabilities while the third is associated with private credit. These conclusions result from analysing the factor scores obtained from the Principal Component Analysis (Brown, 2008). The results are reported in table 5.2b.

Table 5.2a: Correlation of key financial development indicators:

Upper middle income				
	Liquid liabilities	private credit	commercial/central bank	Bank deposits
Liquid liabilities	1			
Private credit	0.7456(0.00)	1		
Commercial bank/CB	0.2086(0.01)***	0.2874(0.00)***	1	
Bank deposits	0.8715(0.00)***	0.8218(0.00)***	0.3030(0.00)***	1
		Lower middle income		
Liquid liabilities	1			
Private credit	0.1985(0.04)**	1		
Commercial bank/CB	0.3152(0.01)***	0.4034(0.00)***	1	
Bank deposits	0.7176(0.00)***	0.1451(0.13)*	0.3835(0.00)***	1
Low-income				
Liquid liabilities	1			
Private credit	0.1542(0.11)*	1		
Commercial bank/CB	0.1743(0.07)**	0.0859(0.37)	1	
Bank deposits	-0.0142(0.88)	-0.0472(0.67)	0.1254(0.19)	1

Notes: ***, **, * denote significance at 1 percent, 5 percent and 10 percent respectively.

[23]Huang (2010) asserts that the principal components are transformed into new indices that are uncorrelated. The variances of the principal components are so low that they become of less importance and hence the bulk of the variation in the data will then be captured by a small number of indices.

Table 5.2b: Eigenvalues, Eigenvectors and factor scores of the Principal Component Analysis

Eigenvalues				
Measure	Value	Proportion	Cumulative value	Cumulative proportion
Liquid liabilities	2.7484	0.6872	2.7488	0.6872
Private credit	0.8850	0.2213	3.6338	0.9085
Bank deposts	0.2558	0.0640	3.8897	0.9724
Commercial/central bank	0.1102	0.0276	0.0276	1.0000

	Eigenvectors			Factor scores	
PC 1	0.5508	-0.2264	0.5814	0.5541	0.8861
PC 2	0.5474	-0.0970	-0.7923	0.2483	0.8367
PC 3	0.5759	-0.1174	0.1637	-0.7922	0.9834
PC 4	0.2551	0.9620	0.0768	0.0587	0.3022

Notes: All values are based on the data for the four measures of financial development for the upper middle income countries.

In the lower middle income countries, the commercial bank/central bank exhibits a significant and positive correlation with the other three variables (bank deposits, private credit and liquid liabilities). Dropping one of them (commercial bank/central bank in this case) per se, may not result in any bias since these are dependent variables. Bank deposits, private credit and liquid liabilities are retained as these measures are often used as the standard measures of FD in the literature as highlighted above. In the low-income countries, bank deposits are negatively correlated with private credit and liquid liabilities while the correlation between liquid liabilities, commercial bank/central bank and private credit is significantly low (8.5%). The highest correlation in the low-income group of countries is between commercial bank/central bank and liquid liabilities (17.4%). We retain liquid liabilities to ensure consistency on the three measures of FD for each income group of countries. The three measures include; bank deposits, private credit and liquid liabilities. Since these indicators generally measure the size of the banking system, FD in this study encapsulates bank-based intermediation.

The average (X) ratios of the FD indicators and their associated standard deviations (SD) in the upper middle, lower middle and low-income countries are reported in table 5.3:

Table 5.3: Descriptive statistics of financial development variables:

Share of bank credit to the private sector to GDP		
Upper middle income[a]	Lower middle income[b]	Low income[c]
$X = 34.24; SD = 20.69$	$X = 12.38; SD = 5.35$	$X = 8.75; SD = 8.00$
Share of bank deposits to GDP		
$X = 39.99; SD = 18.76$	$X = 23.77; SD = 8.73$	$X = 19.71; SD = 40.83$
Share of commercial bank assets over the sum of commercial bank and central bank assets to GDP		
$X = 90.91; SD = 15.73$	$X = 73.86; SD = 28.74$	$X = 74.16; SD = 19.26$
Share of liquid liabilities to GDP		
$\mathrm{X} = 46.53; \mathrm{SD} = 18.91$	$\mathrm{X} = 30.04; \mathrm{SD} = 11.64$	$\mathrm{X} = 20.43; \mathrm{SD} = 18.26$

Notes: [a] include Botswana, Mauritius, Namibia and South Africa, [b] include Lesotho, Swaziland and Zambia and [c] include Malawi Mozambique and Zimbabwe. All values are in percentages.

The descriptive statistics above clearly indicate that there is significant heterogeneity of FD across the countries under study. The average share of bank credit, bank deposits the share of commercial bank assets to the total assets of commercial banks and the central bankas a percentage of the GDP is highest in the upper middle income countries and lowest in the low-income countries. This general trend tends to indicate differentiated levels of development being experienced in the financial sectors of the countries under study. The trend corroborates with Mowatt (2001), Nyawata and Bird's (2004) arguments who suggest that financial liberalisation may generally not have achieved the desired level of deepening perceived in the SADC's financial sector with sluggish performance coming from the lower middle and low incomes countries in the region.

5.2.4 Descriptive statistics of main institutional variables for all income groups

Table 5.4a: Descriptive statistics of main institutional variables – combined polity score

Polity 2- Combined polity score (Democracy minus Autocracy scores)				
Upper middle income countries				
	X	SD	Group X	Group SD
Botswana	6.4	0.8		
Mauritius	8.9	4	6.1	1.93
Namibia	3.2	2.7		
South Africa	6.0	0.22		
Lower middle income countries				
Lesotho	-0.35	6.46		
Swaziland	-8.6	0.46	-3.43	2.51
Zambia	-1.33	0.63		
Low-income countries				
Malawi	-1.84	6.75		
Mozambique	-1.41	5.73	-1.73	5.34
Zimbabwe	-1.91	3.56		

Notes: all values are in percentages.X is defined as the mean and SD the standard deviation. The values reported are the author's own calculations.

The results on table 5.4a above suggest that the average level of democracy in the upper income group countries is 6.6 signifying a relatively high level of democratisation (substantive democracy) in these countries compared to the other income groups. The standard deviation (1.93) is relatively small signifying a lower possibility of transition from democracy to autocracy for this income group compared to the other income groups. Assessing the average of each country in the upper middle income group shows Namibia as the outlier. The low average score is as a result of the fact that only data from 1990 to 2013 is available but the number of observations for the group was used to compute the mean, otherwise Namibia could have obtained an average democracy score of 5.4, which is still low but close to the 6.6 mark. The average in the lower middle and low-income countries are similar and are negative (-3.43 and -1.73 respectively) indicating that generally, these groups

of countries are still battling to put their democratic credentials in place. The low-income countries show a large deviation from the mean indicating some homogeneity in respect of transition from democracy more towards autocracy. Judging from the mean level of democracy and the associated standard deviation, for individual countries and as a group, there is a significant heterogeneity in democratic governance in the upper middle and lower middle income countries.

Table 5.4b below illustrates the average values and standard deviations of executive constraints obtained by the different income groups.

Table 5.4b: Descriptive statistics of main institutional variables – Constraint on executives:

	Constraint on executives			
	Upper middle income countries			
	X	SD	Group X	Group SD
Botswana	6.08	0.86		
Mauritius	7	0	5.76	1.23
Namibia	2.97	2.48		
South Africa	6.62	1.60		
	Lower middle income countries			
Lesotho	3.62	2.89		
Swaziland	1.35	0.48	2.75	1.79
Zambia	3.27	2.0		
	Low-income countries			
Malawi	3.11	2.24		
Mozambique	3.18	0.87	3.23	1.56
Zimbabwe	3.40	1.58		

Note: all values are in percentages.$X$is defined as the mean and SD the standard deviation. The values reported are the author's own calculations.

As expected, the upper middle income countries outperformed the lower middle and low-income countries, judging from the individual and group averages obtained. Considering the mean level of executive constraint and the associated standard deviation, one finds

significant heterogeneity between the different income groups with the upper middle income countries obtaining an average group score of 5.76 and a standard deviation of 1.3. The low standard deviation suggests that generally countries in this income group tend to effectively constraint the powers of the chief executive. The case of Mauritius stands out where the country obtained an average score of 7 on 7 and 0 deviation suggesting that the institutionalised decision making powers of the chief executive is fully constraint or to a greater extent. The group averages of the lower middle income and low-income countries stand at 2.75 and 3.23 and associated standard deviations of 1.79 and 1.56 respectively suggesting the executive powers of the chief executives are less constrained, an indication ofautocratic rule. The situation is more prevalent in two of the lower middle income countries' political regimes (Lesotho and Swaziland) characterised by absolute monarchies in varying degrees with the preferences of the monarchy much more entrenched in Swaziland than in Lesotho. This suggests why Swaziland may have obtained the lowest score compared to the other countries under study.

5.2.5 Pooling tests for each income group

Since we are having a panel of different countries, we determine whether to treat them as homogeneous or heterogeneous, hence one needs a statistical test to conclude whether they are generally the same or different. The results from the F-test below indicate that the critical F (F^{cr}) is greater than the calculated F (F^{c}) test suggesting that the countries under consideration for each income group are the same. This implies that the impact of explanatory variables is the same across these countries; therefore, a restricted model is preferred over an unrestricted model. The pooling test results for upper middle, lower middle and low income countries are presented in table 6.1a, 6.2b and 6.3c respectively below.

Table 6.1a: Poolability tests for upper middle income countries.

RSS_{ur}	RSS_r	F^c	F^{cr}	n	k	m
[Bank deposits]:						
0.7859	0.8271	2.2367	2.46	151	15	4
[Private credit]:						
0.4696	0.4893	1.7898	2.46	151	15	4
[Liquid liabilities]:						
2.5194	2.9402	7.1263	2.46	151	15	4

Notes: the dependent variables are in parenthesis. The other variables are defined as follows: RSS_{ur} is the residual sum of squares for the unrestricted model; RSS_r is the residual sum of squares for the restricted model,; F^c is the calculated F value; F^{cr} is the critical value; m is the number of restrictions; k is the number of regressors; and n is the number of observations. Generally, $F^{cr}>F^c$ – suggest that the impact of explanatory variables are the same across income groups.

Table 6.1b: Poolability tests for lower middle income countries.

RSS_{ur}	RSS_r	F^c	F^{cr}	n	k	m
[Bank deposits]:						
0.2518	0.2565	0.8679	3.09	113	13	3
[Private credit]:						
1.4098	2.8973	0.7102	3.09	113	13	3
[Liquid liabilities]:						
1.6570	1.6626	2.4025	3.09	113	13	3

Notes: the dependent variables are in parenthesis. The other variables are defined as follows: RSS_{ur} is the residual sum of squares for the unrestricted model; RSS_r is the residual sum of squares for the restricted model,; F^c is the calculated F value; F^{cr} is the critical value; m is the number of restrictions; k is the number of regressors; and n is the number of observations. Generally, $F^{cr}>F^c$ – suggest that the impact of explanatory variables are the same across income group.

Table 6.1c Poolability test for Low-income countries:

RSS_{ur}	RSS_r	F^c	F^{cr}	n	k	m
[Bank deposits]:						
6.6475	7.1099	3.0916	3.09	106	14	3
[Private credit]:						
7.7377	8.0087	1.6110	3.09	106	14	3
[Liquid liabilities]:						
13.8084	14.6488	2.7996	3.09	106	14	3

Notes: the dependent variables are in parenthesis. The other variables are defined as follows: RSS_{ur} is the residual sum of squares for the unrestricted model; RSS_r is the residual sum of squares for the restricted model,; F^c is the calculated F value; F^{cr} is the critical value; m is the number of restrictions; k is the number of regressors; and n is the number of observations. $F^{cr}>F^c$ – suggest that the impact of explanatory variables are the same across income groups.

5.2.6 Unit root, autocorrelation and heteroskesdasticity tests of variables for each income group

Results from both LLC and IPS confirm that all the variable series for all the income groups are stationary at level as shown by *P*-values of the series which are below the accepted norm of 5%. This implies that all series are integrated at order 0 i.e. they are all [*I* (0)]. The results from LLC and IPS tests for the upper middle, lower middle and low income groups are reported in tables 7.1a, 7.2b and 7.3c respectively below. The stationarity tests for each variable reject the null hypothesis of a unit root at 5% for all income groups and are reported in the appendix B. The results of heteroskesdasticity test indicate an observed R-squared probability of less than 0.05 for all income groups, indicating the presence of heteroskedasticity exists in the model. However, white cross-section weights were used to correct its presence. The results are reported in appendix C for all income groups. Lastly,

autocorrelation tests are executed to determine whether the OLS estimators are of minimum variance. The results from appendix D suggest that we accept the null hypothesis of no serial correlation in the model. This is indicated by the probability of the *F*-statistic being greater than 0.05 for all income groups, a strong indication of the absence of autocorrelation in the model.

Table 7.1a: Group unit root test summary for upper middle income countries

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-19.3752	0.0000	4	151
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-48.8009	0.0000	4	151
ADF - Fisher Chi-square	1387.63	0.0000	4	151
PP - Fisher Chi-square	1072.43	0.0000	4	151

Notes: ** **Probabilities** for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality

Table 7.1b: Group unit root test summary for lower middle income countries

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-11.3375	0.0000	3	113
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-28.9001	0.0000	3	113
ADF - Fisher Chi-square	810.533	0.0000	3	113
PP - Fisher Chi-square	725.973	0.0000	3	113

Notes: ** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 7.1c: Group unit root test summary for low-income countries

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-16.7522	0.0000	3	113
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-34.1995	0.0000	3	113
ADF - Fisher Chi-square	954.951	0.0000	3	113
PP - Fisher Chi-square	961.238	0.0000	3	113

Notes: ** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality

The study now proceeds into the empirical analyses which are based on the following estimation techniques: OLS, GMM, difference and system GMM. The study makes the following panel specification.

$$F_{it} = \alpha F_{it-1} + \beta D_{it} + \gamma' \rho_{it} + \mu_t + \delta_i + \varepsilon_{it} \quad (5.1)$$

All the variables are defined as in equation 4.1 of chapter 4. We apply all three measures of FD (bank deposits, private credit and liquid liabilities) as the dependent variables. Our conclusions will be drawn based on all three measures. All control variables employed are determined by BMA to mitigate model uncertainty which tends to change depending on the measure of FD used. The institutional variables of key interest for all income groups include; democracy (procedural and substantive), constraint on executives, autocracy and per capita income. We expect democracy (procedural and substantive), constraint on executives and per capita income to positively affect FD. The effect of autocracy on financial development is expected to be negative for all income groups. For all income groups we use Hansen's statistics to test the validity of over-identifying restrictions. We do not reject null in all IV regressions suggesting that our instrument set is appropriate for all income groups.

5.2.7 Democratic institutions and financial development: Cross-section results for the upper middle income countries:

Tables 8.1a, 8.1b, and 8.1c display the results for the effects of democratic institutions on FD using the traditional OLS and instrumental variable (IV) estimators. Table 8.1d presents an analysis of t(z)-statistics and probabilities in all regressions. The results reported are based on the analyses of tables 8.1a, 8.1b, and 81.c condensed into table 8.1d for easy interpretation. This procedure is followed for all income groups. The results indicate that the coefficients of constraints on executives and procedural democracy are generally positive and significant, in support of the hypothesis that democracy and executive constraints positively impacts on FD. The coefficient of autocracy is negative and insignificant; giving credence to the hypothesis that autocracy may tend to render sub-optimal outcomes for FD. However, the coefficients of substantive democracy and per capita income are found to be negative, an unexpected sign, but however, statistically insignificant. The interaction between per capita income, government expenditure and procedural democracy are positive, though insignificant suggesting that the effect of per capita income and government spending on FD is increased with democracy. The interactions tend to suggest some non-linearities between democracy and FD through its effects on policy variables such as government expenditure and per capita income.

Table 8.1a: OLS, GMM, Difference GMM (DGMM) and system GMM (SGMM) fixed effect estimation (1975-2013) Dependent variable – Bank deposits

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	-0.05(0.7)	-0.02(0.7)	0.09(0.40)	0.21(0.63)
Executive constraints	0.12*(0.08)	0.11*(0.07)	0.32***(0.00)	0.44***(0.00)
S Polity IV	-0.11***(0.00)	-0.10*(0.06)	-0.27***(0.00)	-0.30***(0.00)
Polity IV	0.13**(0.01)	0.10*(0.16)	0.13(0.34)	-0.79*(0.10)
Government expenditure	-0.19(0.38)	-0.16(038)	-0.10(0.67)	-0.11(0.82)
Population	0.53*(0.09)	0.69***(0.00)	0.67*(0.10)	0.68(0.51)
School	0.06(0.69)	0.09(0.40)	0.01(0.94)	0.41(0.27)
Lag bank deposits	-0.03(0.55)	0.04(0.48)	0.08***(0.23)	0.17*(0.11)
Per capita income	-1.48***(0.00)	-1.47***(0.00)	-1.40***(0.00)	-0.82**(0.01)
Polity IV*Government	0.14(0.60)	0.14(0.57)	0.04(0.89)	0.13(0.86)
Polity IV*school	-0.16(0.5)	-0.25(0.15)	-0.07(0.76)	-0.69(0.38)
Polity IV*per capita income	1.29***(0.00)	1.2***(0.00)	1.2***(0.00)	0.70*(0.08)
Polity IV*population	-0.66*(0.17)	-0.94***(0.00)	-0.95*(0.14)	-1.11(0.49)
Constant	-0.005(0.85)	0.006(0.82)	-0.0004(0.93)	0.002(0.69)
Hansen's J statistic		2.22(0.31)	5.68(0.11)	4.53(0.13)
Country dummy	Yes	Yes	Yes	Yes
Observations	151	151	151	151
Number of countries	4	4	4	4
R-squared	0.75	0.75	0.85	0.35

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

Table 8.1b: OLS, GMM, Difference GMM (DGMM) and system GMM (SGMM) fixed effect estimation (1975-2013) Dependent variable – Private credit

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	0.04(0.76)	0.03(0.85)	0.05***(0.00)	0.44**(0.00)
Executive constraints	-0.22*(0.06)	-0.20***(0.00)	-0.19***(0.00)	-0.34**(0.01)
polity IV	-0.17***(0.00)	-0.13**(0.04)	-0.13***(0.00)	-0.31**(0.03)
S Polity IV	0.11***(0.00)	0.10***(0.01)	0.09***(0.00)	0.18*(0.1)
Government expenditure	-0.31**(0.03)	-0.25**(0.03)	-0.26***(0.00)	-0.32*(0.06)
Population	0.32**(0.04)	0.33***(0.00)	0.37***(0.00)	-0.02(0.68)
Lag private credit	-0.31***(0.00)	-0.17*(0.14)	-0.16***(0.00)	-0.46***(0.00)
Per capita income	-0.18***(0.00)	-0.22***(0.00)	-0.22***(0.00)	-0.13**(0.01)
Polity IV*Government	0.35**(0.05)	0.15*(0.06)	0.28***(0.00)	0.36*(0.10)
Polity IV*population	-0.34*(0.07)	-0.36***(0.00)	-0.41***(0.00)	0.01(0.83)
Constant	0.03*(0.15)	0.02(0.49)	-0.0003(0.26)	0.003(0.64)
Hansen's J statistic		3.40(0.18)	5.70(0.22)	4.71(0.21)
Country dummy	Yes	Yes	Yes	Yes
Observations	151	151	151	151
Number of countries	4	4	4	4
R-squared	0.37	0.34	0.99	0.55

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

Table 8.1c: OLS, GMM, Difference GMM (DGMM) and system GMM (SGMM) fixed effect estimation (1975-2013)
Dependent variable – Liquid liabilities

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	-0.74**(0.03)	-0.26(0.75)	-0.43***(0.00)	-0.15**(0.01)
Executive constraints	0.11(0.39)	0.10(0.60)	0.36***(0.00)	0.39**(0.02)
polity IV	0.17*(0.11)	0.08(0.53)	0.35***(0.00)	0.38(0.34)
S Polity IV	-0.11*(0.11)	-0.03(0.76)	-0.34***(0.00)	-0.36**(0.02)
Lag liquid liabilities	0.44***(0.00)	0.59***(0.00)	0.62***(0.00)	-0.15**(0.01)
Per capita income	-0.16(0.37)	-0.19***(0.00)	-2.3***(0.00)	-0.26(0.41)
Polity IV*Per capita income	-2.13(0.62)	-0.03***(0.70)	0.02(0.41)	0.22(0.66)
Constant	-0.01(0.90)	-0.01(0.90)	-0.003(0.68)	-0.02*(0.09)
Hansen's J statistic		4.5(0.19)	6.00(0.09)	5.01(0.06)
Country dummy	Yes	Yes	Yes	Yes
Observations	151	151	151	151
Number of countries	4	4	4	4
R-squared	0.35	0.30	0.90	0.21

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

Table 8.1d: Analyses of t (z)- statistics and P-values in all regressions - Upper middle income countries:

Explanatory variables of interest/dependent variables	(+) significant	(+) insignificant	(-) significant	(-) insignificant
Autocracy				
Bank deposits	0	2	0	2
Private credit	2	2	0	0
Liquid liabilities	0	0	2	2
Constraint on executives				
Bank deposits	4	0	0	0
Private credit	2	2	0	0
Liquid liabilities	2	2	0	0
Democracy (procedural)				
Bank deposits	2	1	1	0
Private credit	0	0	4	0
Liquid liabilities	3	1	0	0
Democracy (substantive)				
Bank deposits	0	0	4	0
Private credit	4	0	0	0
Liquid liabilities	0	0	3	1
Per capita income				
Bank deposits	0	0	4	0
Private credit	0	0	4	0
Liquid liabilities	0	0	3	1

Notes: Bank deposits, private credit and liquid liabilities are the dependent variables. All control variables are determined by BMA. The values in the table indicate the sign and significance of the explanatory variable of interest in all regressions. The analyses are based on tables [(iii)a, (iii)b and (iii)c above)

5.2.8 Democratic institutions and financial development: Cross-section results for the lower middle income countries:

The model represented by equation (5.1) informs our empirical analysis in this section. The control variables include black market premium, school enrolment, foreign direct investment, population and lags of dependent variables. These variables tend to change depending on the measure of FD used. Our key variables of interest which represent democratic institutions are: democracy (procedural and substantive), constraint on executives, autocracy and per capita income.

The regression results obtained from OLS, GMM, difference GMM and system GMM using bank deposits, private credit and liquid liabilities are reported in tables 8.2a, 8.2b and 8.2c respectively. An analysis of the regression results is presented in table 8.2d. The results

generally indicate the coefficients of autocracy, substantive democracy and constraint on executives to be either negative and insignificant or significant. In this case we do not reject our hypothesis that autocracy negatively affects FD. Contrary to our hypothesis substantive democracy and constrained on executives negatively affects FD. The results, however, are consistent with the data – we find from the descriptive statistics that the level at which executives are constrained in this income group is limited and that democracy is far from substantive. These may be having a negative impact on FD. What clearly emerges from the findings is that ingredients of autocracy prevalent in the political regimes of these countries may be acting as an incentive for chief executives not to take into account the preferences of others when making decisions, thereby creating an environment of instability. Venieris and Steward (1987) assert that uncertainty lowers saving mobilisation and hence negatively affecting FD. Apart from Zambia, Lesotho and Swaziland adopted a form of governance where succession of people from the same family play a prominent role with a small group of people in both countries playing a key role in the governing of the country. "In the case of Lesotho a constitutional monarchy was adopted with the king as head of state while the prime minister is head of government….Despite the positive developments regarding electoral reform in Lesotho and the consequent inclusiveness and broad political representation in the National Assembly, political tension is still rife in the small mountain kingdom" (Matlosa, 2006:9-10). Matlosa (2006) further contends that the governance system in Swaziland is still very much authoritarian and that the country has not embraced multi-party electoral democracy despite the political pressure being heaped on the country's leadership.

The coefficient for procedural democracy is positive but insignificant as expected while per capita income seems to be contributing positively towards FD, showing some consistency with the hypothesis. Procedural democracy being insignificant shows its minimal contribution to FD. Though the results are somewhat mixed as expected when applying different measures of FD, what seems to emerge from the models suggests that democratic institutions in this group of countries contribute minimally in enhancing FD. Non-linear relationships between democracy and FD emerge through per capita income and black market premium for this income group.

Table 8.2a OLS, GMM, Difference GMM (DGMM) and system GMM (SGMM) fixed effect estimation (1975-2013) Dependent variable – Bank deposits

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	0.08**(0.03)	0.11*(0.10)	0.12***(0.00)	-0.04(0.70)
Executive constraints	-0.17***(0.00)	-0.10*(0.13)	-0.10***(0.00)	-0.27***(0.00)
S Polity IV	-0.01(0.34)	-0.01(0.40)	-0.01***(0.00)	0.01(0.83)
Polity IV	0.001(0.97)	-0.00*(0.83)	0.003***(0.00)	0.001(0.99)
Lag bank deposits	0.03(0.71)	0.02(0.64)	0.03***(0.00)	-0.43***(0.00)
Per capita income	0.49***(0.00)	0.51***(0.00)	0.50***(0.00)	0.17*(0.11)
Polity IV*per capita income	0.91(0.64)	0.74*(0.57)	-0.00(0.61)	1.12(0.31)
Constant	0.01(0.14)	0.01(0.11)	0.001(0.64)	-0.005(0.59)
Hansen's J statistic		6.34(0.06)	5.27(0.08)	6.21(0.059)
Country dummy	Yes	Yes	Yes	Yes
Observations	113	113	113	113
Number of countries	3	3	3	3
R-squared	0.31	0.29	0.99	0.57

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

Table 8.2b: OLS, GMM, Difference GMM (DGMM) and system GMM (SGMM) fixed effect estimation (1975-2013) Dependent variable – Private credit

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	-0.05(0.26)	-0.05*(0.08)	-0.05***(0.00)	0.01(0.98)
Executive constraints	-0.07(0.56)	-0.03(0.54)	-0.03***(0.00)	-0.34**(0.01)
polity IV	0.01(0.90)	0.05(0.58)	2.89**(0.03)	0.05(0.87)
S Polity IV	-0.02*(0.12)	-0.02(0.22)	-0.03***(0.00)	-0.04(0.95)
Foreign direct investment (FDI)	0.56**(0.04)	0.57**(0.03)	0.49***(0.00)	2.30(0.89)
School enrolment	0.75***(0.01)	0.80***(0.00)	0.82***(0.00)	0.88*(0.10)
Lag private credit	0.85***(0.00)	0.85***(0.00)	0.85***(0.00)	0.63(0.56)
Per capita income	-0.10(0.29)	-0.09(0.42)	-0.08***(0.00)	-0.17(0.82)
Polity IV*black market premium	1.46*(0.10)	0.97**(0.32)	0.42***(0.00)	6.56(0.23)
Polity IV*FDI	-0.03(0.9)	-0.47(0.74)	-0.28(0.2)	-2.55(0.89)
Polity IV x School enrolment	-1.66(0.3)	-1.08(0.33)	-0.31*(0.11)	0.28(0.97)
Constant	-0.17***(0.00)	-0.17***(0.00)	-0.001(0.62)	-0.43(0.62)
Hansen's J statistic		5.08(0.11)	5.86(0.06)	4.32(0.14)
Country dummy	Yes	Yes	Yes	Yes
Observations	113	113	113	113
Number of countries	4	4	4	4
R-squared	0.91	0.91	0.97	0.78

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

Table 8.2c: OLS, GMM, Difference GMM (DGMM) and system GMM (SGMM) fixed effect estimation (1975-2013) Dependent variable – Liquid liabilities

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	-0.09(0.39)	-0.06(0.31)	-0.06***(0.00)	-0.02(0.72)
Executive constraints	-0.11(0.40)	0.001(0.99)	0.005(0.69)	0.02(0.78)
polity IV	-0.29(0.22)	-0.28*(0.12)	1.65***(0.00)	-0.17(0.29)
S Polity IV	-0.03(0.28)	-0.03(0.25)	-0.02***(0.00)	0.42***(0.00)
Lag liquid liabilities	-0.39***(0.00)	-0.27**(0.05)	-0.29***(0.00)	-0.75***(0.00)
Per capita income	0.32*(0.11)	0.39***(0.00)	0.37***(0.00)	0.28(0.60)
Population	-0.15(0.22)	-0.12(0.43)	-0.09***(0.00)	0.37(0.55)
Polity IV x Population	-58.50**(0.04)	-0.88**(0.01)	-0.0001(0.99)	-5.52(0.18)
Polity IV*Per capita income	-2.51(0.56)	-49.87(0.82)	-1.85(0.16)	-10.19*(0.06)
Constant	0.01*(0.42)	0.02*(0.08)	0.0002(0.94)	-0.01(0.64)
Hansen's J statistic		5.58(0.08)	3.59(0.06)	5.09(0.10)
Country dummy	Yes	Yes	Yes	Yes
Observations	113	113	113	113
Number of countries	4	4	4	4
R-squared	0.28	0.26	0.98	0.32

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

Table 8.2d: Analyses of t(z)- statistics and P-values in all regressions:

Explanatory variables of interest/dependent variables	(+) significant	(+) insignificant	(-) significant	(-) insignificant
Autocracy				
Bank deposits	3	0	0	1
Private credit	0	0	2	2
Liquid liabilities	0	0	1	3
Constraint on executives				
Bank deposits	0	0	4	0
Private credit	0	0	1	3
Liquid liabilities	0	3	0	1
Democracy (procedural)				
Bank deposits	1	2	1	0
Private credit	1	3	0	0
Liquid liabilities	1	0	1	2
Democracy (substantive)				
Bank deposits	0	1	1	2
Private credit	0	0	2	2
Liquid liabilities	1	0	1	2
Per capita income				
Bank deposits	4	0	0	0
Private credit	0	0	0	4
Liquid liabilities	3	1	0	0

Notes: Bank deposits, private credit and liquid liabilities are the dependent variables. All control variables are determined by BMA. The values in the table indicate the sign and significance of the explanatory variable of interest in all regressions. The analyses are based on tables [(iii)a, (iii)b and (iii)c above)

5.2.9 Democratic institutions and financial development: Cross-section results for the low-income countries

The results reported indicate that the coefficients of per capita income, procedural and substantive democracy are generally negative and insignificant, suggesting that democracy and per capita income do not play any significant role in improving FD, a finding not consistent with our hypothesis but expected for this income group following analysis of the descriptive statistics of the institutional variables. The coefficient of executive constraints is positive and significant in line with our hypothesis but inconsistent with the analysis of data on institutional variables, while autocracy is positive and insignificant – inconsistent with the hypothesis and data on institutional variables. The effect of autocracy on FD is, however, insignificant. There are two possible interpretations of this result. The autocrat with unconstrained powers could be carrying out policies that positively affect FD or the powers of the executive are now more constrained due to a decrease in autocracy and as such having a positive effect on FD. Overall, the results from the above models, though somehow mixed, seem to suggest that democratic institutions could be having a minimal impact on improving FD for this income group. This evidence corroborates with the results obtained from the lower middle income countries. The coefficient of trade openness, per capita income and school enrolment are negative when entered linearly into the models but becomes positive on interaction with democracy. This suggests that the positive effect of democracy on FD may be non-linear through its interaction with these policy and social variables. The regression results are reported in tables 8.3a, 8.3b and 8.3c, respectively. Analyses of the regression results are presented in table 8.3d.

Table 8.3a OLS, GMM, Difference GMM (DGMM) and system GMM (SGMM) fixed effect estimation (1975-2013)

Dependent variable – Bank deposits

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	-0.47**(0.02)	-0.24(0.43)	-0.24***(0.00)	-0.75(0.40)
Executive constraints	0.89***(0.00)	-0.16(0.70)	-0.09**(0.03)	3.93*(0.08)
S Polity IV	-0.44***(0.00)	0.10(0.65)	0.09***(0.00)	-1.15(0.52)
Polity IV	-1.05(0.54)	-0.55(0.51)	-0.025(0.22)	-0.73(0.74)
Lag bank deposits	0.02(0.80)	0.12*(0.14)	0.12***(0.00)	-0.05(0.64)
Per capita income	-2.59***(0.00)	-1.29(0.29)	-1.28***(0.00)	-2.31(0.39)
Inflation	18.5***(0.00)	5.61(0.522)	6.06***(0.00)	23.32(0.39)
FDI	-0.31(0.93)	3.01(0.27)	2.75***(0.00)	5.15(0.42)
Polity IV x FDI	20.7(0.78)	13.3(0.64)	8.45*(0.10)	-156.52(0.64)
Polity IV x Inflation	75.9(0.56)	41.3(0.47)	10.3*(0.17)	-385.83(0.63)
Polity IV x per capita income	2.49(0.86)	1.29(0.87)	0.14(0.91)	-5.12(0.92)
Constant	-0.43***(0.00)	-0.05(0.71)	0.003*(0.17)	-0.002(0.97)
Hansen's J statistic		3.56(0.06)	5.39(0.08)	3.38(0.07)
Country dummy	Yes	Yes	Yes	Yes
Observations	113	113	113	113
Number of countries	3	3	3	3
R-squared	0.28	0.06	0.99	0.46

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

Table 8.3b: OLS, GMM, Difference GMM (DGMM) and system GMM (SGMM) fixed effect estimation (1975-2013) Dependent variable – Private credit

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	0.33(0.18)	0.29**(0.02)	0.32***(0.00)	0.32(0.21)
Executive constraints	-0.29(0.27)	0.13(0.46)	0.25***(0.00)	0.74(0.57)
polity IV	-0.64(0.69)	-1.14(0.21)	-0.09(0.28)	-0.18(0.70)
S Polity IV	0.29*(0.10)	0.002(0.98)	-0.04(0.65)	-0.23(0.78)
Government expenditure	0.59***(0.00)	0.53***(0.00)	0.43***(0.00)	0.35(0.44)
Inflation	13.2**(0.05)	5.41(0.32)	-1.12(0.70)	-7.98(0.77)
Per capita income	-3.0***(0.00)	-3.78***(0.00)	-3.53***(0.00)	-1.36(0.34)
School enrolment	-0.46*(0.08)	-0.63***(0.00)	-0.61***(0.00)	-0.36(0.25)
Trade openness	-94.2***(0.01)	-85.3**(0.02)	-77.3***(0.00)	5.92(0.92)
Lag private credit	-0.04(0.63)	0.08(0.16)	0.03(0.72)	-0.58**(0.04)
Polity IV x Government	8.81(0.20)	3.24(0.28)	-0.24(0.75)	-6.64(0.42)
Polity IV x Inflation	15.29(0.91)	59.6(0.45)	-310.8***(0.00)	-992.14(0.17)
Polity IV x Per capita income	34.11(0.32)	14.5(0.21)	1.60(0.53)	-7.29(0.83)
Polity IV x trade openness	847.18(0.31)	426.5(0.56)	2120.6***(0.00)	6107*(0.10)
Polity IV x school enrolment	8.05(0.36)	0.92(0.78)	-5.34***(0.00)	-18.16(0.23)
Constant	-0.17(0.18)	-0.13*(0.09)	0.008(0.55)	0.03(0.32)
Hansen's J statistic		2.80(0.10)	5.91(0.01)	3.69(0.15)
Country dummy	Yes	Yes	Yes	Yes
Observations	113	113	113	113
Number of countries	3	3	3	3
R-squared	0.41	0.34	0.91	0.42

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

Table 8.3c: OLS, GMM, Difference GMM (DGMM) and system GMM (SGMM) fixed effect estimation (1975-2013)
Dependent variable – Liquid liabilities

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	0.09(0.70)	-0.08(0.52)	-0.14**(0.02)	0.48(0.20)
Executive constraints	0.25(0.30)	0.05(0.82)	0.37*(0.08)	2.49*(0.10)
polity IV	1.08***(0.00)	0.81*(0.11)	-0.78***(0.00)	-0.87(0.25)
S Polity IV	-0.19(0.27)	-0.09(0.58)	-0.13(0.42)	-2.06**(0.03)
Per capita income	-0.29(0.68)	-0.20(0.48)	0.04(0.81)	-0.52(0.63)
Government expenditure	-0.14(0.47)	-0.09(0.40)	-0.06(0.33)	0.38(0.33)
School enrolment	-0.29(0.21)	-0.07*(0.69)	0.005(0.93)	-0.01(0.97)
Lag liquid liabilities	-0.12*(0.08)	-0.12(0.17)	-0.14***(0.00)	-0.27*(0.10)
Polity IV x school enrolment	22.0***(0.00)	17.5**(0.01)	10.8**(0.01)	-2.83(0.82)
Constant	-0.03(0.66)	0.01(0.85)	0.003(0.83)	-0.01(0.82)
Hansen's J statistic		4.22(0.24)	3.06(0.11)	5.81(0.07)
Country dummy	Yes	Yes	Yes	Yes
Observations	113	113	113	113
Number of countries	3	3	3	3
R-squared	0.45	0.42	0.87	0.23

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported

Table 8.3d: Analyses of t(z)- statistics and P-values in all regressions:

Explanatory variables of interest/dependent variables	(+) significant	(+) insignificant	(-) significant	(-) insignificant
Autocracy				
Bank deposits	0	0	3	1
Private credit	2	2	0	0
Liquid liabilities	0	2	1	1
Constraint on executives				
Bank deposits	2	0	1	1
Private credit	1	2	0	1
Liquid liabilities	2	2	0	0
Democracy (procedural)				
Bank deposits	0	0	0	4
Private credit	0	0	0	4
Liquid liabilities	2	0	1	1
Democracy (substantive)				
Bank deposits	1	1	1	1
Private credit	1	1	0	2
Liquid liabilities	0	0	1	3
Per capita income				
Bank deposits	0	0	2	2
Private credit	0	0	3	1
Liquid liabilities	0	0	0	4

Notes: Bank deposits, private credit and liquid liabilities are the dependent variables. All control variables are determined by BMA. The values in the table indicate the sign and significance of the explanatory variable of interest in all regressions. The analyses are based on tables 5.18a, 5.18b and 5.18c above.

5.2.10 Summary of panel regression results

The above results overwhelmingly suggest that democratic institutions on average contribute positively towards FD using all three proxies for FDfor the upper middle income group. The results also show autocracy as having a negative association with FD. These findings are consistent with evidence shown by Girma and Shortland (2008), Huang (2010), Yang (2011), Miletkov and Wintoki (2012), Deepraj and Nabamita (2013), among others and imply that legal and institutional development which is positively associated with democracy matter for FD.For the lower middle income countries the results generally suggest that the contribution of democratic institutions to FD is mixed, skewed towards having minimal impact on FD. While there seems to be a positive contribution of procedural democracy and per capita income to FD as expected, their contributions are statistically insignificant. For the lower income group results of the panel regressions suggest that per capita income and both substantive and procedural democracy negatively affects FD, while the effect of constraints on executives seems to be positive and significant. The effect of autocracy is positive but

insignificant. What stands out is that weak legal and democratic institutions may be exerting negative effects on FD possibly as a result of political instability. This evidence seems to correlate with Matlosa's (2006) observations for this group of countries. His findings suggest that the countries in this income group have a pervasive trend of an entrenched de jure one-party system that ensures the continued dominance of ruling parties and constraints open competition for political power. Such conditions may provide a perfect recipe for political instability as has been observed in Mozambique and Zimbabwe. With the effect of autocracy and shocks thereof having a positive effect on FD, we follow La Porta, Lopez-de-Silanes, Pop-Eleches and Shleifer (2004) and argue that such hegemony may entrench some competitive form of authoritarianism or advanced authoritarianism masked as democracy with the choices made by authoritarian regimes and not the constraints on them have allowed these countries to make some gains towards FD.

5.3 The fragility of financial development in the SADC region

One of our main objectives is to determine the probability of switching between states of high FD and weak or low FD following political regime changes. The study estimates the following MSM with constant volatility for all income groups to achieve this objective.

$$\left.\begin{aligned} F_t = \propto_{01} + \sum_{i=1}^{p} \beta_{1i} F_{t-i} + \sum_{i=1}^{p} \theta_{1i} D_{t-i} + \sum_{i=1}^{p} \gamma'_{1i} \rho_{t-i} + \varepsilon_{t,1}; \quad \text{if} S_t = 1 \\ F_t = \propto_{02} + \sum_{i=2}^{p} \beta_{2i} F_{t-i} + \sum_{i=2}^{p} \theta_{2i} D_{t-i} + \sum_{i=2}^{p} \gamma'_{2i} \rho_{t-i} + \varepsilon_{t,2}; \quad \text{if} S_t = 2 \end{aligned}\right\} \quad (5.2)$$

Where $\varepsilon_{t,j} \sim N(0, \sigma_j^2)$; the definitions of the variables are the same as in equation (4.1). S_t = 1 and S_t=2 are the two states –high FD state and weak/low FD state. High FD shows the state of FD relative to the other income group of countries; in other words, the income group in question is financially developed compared to the other income groups.For all income groups, we consider regime 1 as a state of high FD and regime 2 a state of low/weak FD. Here, we report results from the simple switching model with unchanging transition probabilities. It is important to note that the model assumes simple switching and the probability of being in regime 1 and regime 2 depends on the origin state.The probability of being in regime 1 and regime 2 may be state independent. We run Markov switching regressions to this effect and the results suggest a higher probability of being in a state of high FD for the upper middle income countries than the lower middle and low-income countries, though the values are different as expected. These results are not reported as they deviate from the objective of this section but are available on request. These probabilities would imply a certain expected duration in a regime given by a number of years

since we are applying annual data in the study. Applying the Wald test, we reject the null hypothesis that the parameters are the same, suggesting that switching does occur.The results of the filtered and smooth regime probabilities that show the probabilities of transition from regime 1 (high FD) to regime 2 (low FD) are reported in the appendix E for all income groups.

5.3.1Empirical findings from the upper middle income countries

Using bank deposits, liquid liabilities and private credit as the dependent variables the following mean transition probabilities and expected durations are reported in table 9.1a below. It is expected that being in a state of high FD, these countries would spend an average of nine years in that state and an average of five years if in a state of low FD. These results suggest that these countries in general have an 0.80 chance of experiencing high FD and remaining in that state for an average of 9 years compared to a 0.75 chance of experiencing low FD and being in that state for an average of just 5years. This evidence lends some credence to a narrow version of the financial instability hypothesis which contends thatwhen the economy experiences periods of long prosperity itswitches from a stable system to an unstable system in its financial relations. Suggestive of the probabilities and expected durations, appropriate government policies towards improving FD may result in much more positive and sustainable outcomes for the financial sector for this income group of countries.

Table 9.1a: MSM: State dependent transition probabilities and expected durations

Constant transition probabilities: Bank deposits

P(i, k) = P(s(t) = k | s(t-1) = i)

(row = i / column = j)

	1	2
1	0.94725151	0.4453788
2	0.05274849	0.5546212

Constant expected durations:

	1	2
	18.957888	2.245279

Constant transition probabilities: Liquid liabilities

P(i, k) = P(s(t) = k | s(t-1) = i)

(row = i / column = j)

	1	2
1	0.8325418	0.1132244
2	0.1674582	0.8867756

Constant expected durations:

	1	2
	5.971639	8.832018

Constant transition probabilities: Private credit

P(i, k) = P(s(t) = k | s(t-1) = i)

(row = i / column = j)

	1	2
1	0.6176658	0.195987
2	0.3823342	0.804013

Constant expected durations:

	1	2
	2.615512	5.102379

Mean Constant transition probabilities:

P(i, k) = P(s(t) = k | s(t-1) = i)

(row = i / column = j)

	1	2
1	0.799153	0.251530
2	0.200846	0.748469

Constant expected durations:

	1	2
	9.181679	5.393225

Notes: the mean constant transition probabilities and expected durations are calculated from the transition probabilities for each proxy for financial development. The expected duration is calculated as $1/1\text{-}P_{11}$ for regime 1 and $1/1\text{-}P_{22}$ for regime 2 (Hamilton, 1989). (i) Being the state of high financial development and (k) the state of weak or low financial development; (P) the probability; s(t) the present state of FD; s(t-1) the previous state.

5.3.2 Empirical findings from the lower middle income countries

Using bank deposits, liquid liabilities and private credit as the dependent variables, the mean transition probabilities and expected durations are reported in table 9.1b below. The results suggest that these countries in general have a 0.53 chance of experiencing high FD and remaining in that state for an average of 2 years compared to a 0.79 chance of experiencing low FD and being in that state for an average of just 5years.The expected duration of being in a state of low FD for this income group of countries is 5 years on average and may spend 2 years in a state of high FD.This evidence portrays some volatility in financial development given the duration of being in a particular state, suggesting that though policies might be in place to improve FD as reflected in their policies to reform the financial sector, appropriate implementation may be lacking in steering these group of countries towards a stable FD path.

Table 9.1b: Markov Switching Model: State independent transition probabilities and expected durations

Constant transition probabilities: Bank deposits

P(i, k) = P(s(t) = k | s(t-1) = i)

(row = i / column = j)

	1	2
1	0.4477442	0.1042139
2	0.5522558	0.8957861

Constant expected durations:

	1	2
	1.810755	9.595648

Constant transition probabilities: Liquid liabilities

P(i, k) = P(s(t) = k | s(t-1) = i)

(row = i / column = j)

	1	2
1	0.6585067	0.1853622
2	0.3414933	0.8146378

Constant expected durations:

	1	2
	2.928315	5.394843

Constant transition probabilities: Private credit

P(i, k) = P(s(t) = k | s(t-1) = i)

(row = i / column = j)

	1	2
1	0.4893995	0.3346974
2	0.5106005	0.6653026

Constant expected durations:

	1	2
	1.958478	2.987773

Mean constant transition probabilities:

P(i, k) = P(s(t) = k | s(t-1) = i)
(row = i / column = j)

	1	2
1	0.531883	0.208071
2	0.468116	0.791908

Mean constant expected durations:

	1	2
	2.136220	4.806047

Notes: the mean constant transition probabilities and expected durations are calculated from the transition probabilities for each proxy for financial development. The expected duration is calculated as $1/1\text{-}P_{11}$ for regime 1 and $1/1\text{-}P_{22}$ for regime 2 (Hamilton, 1989)(i) Being the state of high financial development and (k) the state of weak or low financial development; (P) the probability; s(t) the present state of FD; s(t-1) the previous state.

5.3.3 Empirical findings from the low income countries

For this income group of countries, the mean probability of being in a state of low FD is 0.96 while the mean probability of being in a state of high FD is 0.69. The expected duration of remaining in a state of low FD on the average is 26 years compared to 3 years in a state of high FD. The evidence suggests that this group of countries is still experiencing some democratic institutional drawbacks in steering their economies towards achieving higher levels of FD. The results seem to reflect those obtained in the lower middle income countries but with a much higher probability of being in a state of low FD and being in that state for very long periods of time. These findings are reported in table 9.1c below.

Table 9.1c: MSM: State independent transition probabilities and expected durations

Constant transition probabilities: Bank deposits

P(i, k) = P(s(t) = k | s(t-1) = i)

(row = i / column = j)

	1	2
1	0.7224248	0.0350533
2	0.2775752	0.9649466

Constant expected durations:

	1	2
	3.602627	28.527943

Constant transition probabilities: Liquid liabilities

P(i, k) = P(s(t) = k | s(t-1) = i)

(row = i / column = j)

	1	2
1	0.81932	0.0305657
2	0.18068	0.9694342

Constant expected durations:

	1	2
	5.534646	32.71634

Constant transition probabilities: Private credit

P(i, k) = P(s(t) = k | s(t-1) = i)

(row = i / column = j)

	1	2
1	0.5523177	0.04971932
2	0.4476823	0.95028068

Constant expected durations:

	1	2
	2.233726	20.112905

Mean constant transition probabilities:

P(i, k) = P(s(t) = k | s(t-1) = i)

(row = i / column = j)

	1	2
1	0.698021	0.038446
2	0.301979	0.961554

Mean constant expected durations:

	1	2
	3.3114867	26.01044

Notes: the mean constant transition probabilities and expected durations are calculated from the transition probabilities for each proxy for financial development. The expected duration is calculated as $1/1\text{-}P_{11}$ for regime 1 and $1/1\text{-}P_{22}$ for regime 2 (Hamilton, 1989) (i) Being the state of high financial development and (k) the state of weak or low financial development; (P) the probability; s(t) the present state of FD; s(t-1) the previous state.

5.3.4 Summary of the findings of the MSM

Consistent with one of our hypothesis, we show evidence in the Markov Model that countries in this income group have a 0.80 probability of being in the regime of high FD and 0.75 probability of being in a state of low FD and expected to spend an average of 9 years and 5 years in these states respectively. We contend from the findings that relatively stronger democratic institutions may be helping in sustaining FD though susceptible to instability which may act as a hindrance to attaining meaningful FD levels. We suggest that appropriate government policies in strengthening institutions may mitigate instability and foster FD with the likely potential of producing long-term gains in the financial sectors for this income group. For the lower middle income group we also find some consistency with one of our hypothesis.We show evidence that countries in this income group have a 0.53 probability of being in the regime of high FD compared to a 0.79 probability of being in a state of low FD and expected to spend an average of 2 and 5 years on average in these states, respectively. The duration in each state suggests some volatility in FD which may be attributed to ineffective implementation of designed policies which may be resulting from democratic institutional weaknesses. Finally, for the low income group of countries the weak state of democratisation tends to corroborates the findings of the MSM where countries in this income group experience a 0.96 chance of being in a state of low FD and a 0.69 chance of attaining a high FD state. These groups of countries are expected to spend on the average 26 years in the state of low financial development and only 3 years if they move into a state of high FD. Though high volatility is not exhibited, the long periods of being in a state of low FD is concerning. A diagrammatic representation of the transition probabilities (smooth and filtered) of FD are shown in appendix E. The vertical axis for each graph represents the probabilities and the horizontal axis show the panel data number of observations for each income group. Filtered probability refers to an estimate of the probability at time *t* based on data up to and including time *t* (but excluding time *t+1,……,T*). Smoothed probability refers to an estimate of the probability at time *t* using all the data in the sample. Applying the time-varying transition probabilities, we can demonstrate how the expected duration of FD changes over time.

5.4 Impulse responses of financial development to shocks in the institutional variables.

In this section, we present the findings and analysis for all the income groups based on the BVAR results in order to achieve our third objective. The empirical analyses are based on the following BVAR specification.

$$\left.\begin{aligned} BD_{it} &= \propto + \sum_{p=1}^{k} K_p BD_{i,t-p} + \sum_{p=1}^{k} \beta_p D_{i,t-p} + \sum_{p=1}^{k} \gamma'_p \rho_{i,t-p} + \mu_t + \delta_t + \varepsilon_{it} \\ PC_{it} &= \propto + \sum_{p=1}^{k} K_p PC_{i,t-p} + \sum_{p=1}^{k} \beta_p D_{i,t-p} + \sum_{p=1}^{k} \gamma'_p \rho_{i,t-p} + \mu_t + \delta_t + \varepsilon_{it} \\ LL_{it} &= \propto + \sum_{p=1}^{k} K_p LL_{i,t-p} + \sum_{p=1}^{k} \beta_p D_{i,t-p} + \sum_{p=1}^{k} \gamma'_p \rho_{i,t-p} + \mu_t + \delta_t + \varepsilon_{it} \end{aligned}\right\} \quad (5.3)$$

All the variables in equation (5.3) are defined as in equation (4.1). We report impulse responses and variance decomposition following shocks to each of the institutional variables and the control (policy) variables for each income group. Cholesky decomposition is generally used to ascertain the collection of equations in order to obtain the impulse response function (Lutkepohl, 2007). As exemplified in the methodology, we apply Bayesian VAR estimates with the Litterman/Minnesota prior type. This suggests that our impulse responses contain prior information and updated by information in the data. However, the decomposition implies that the ordering of variables is of crucial importance and tends to yield different results with different ordering. We apply the Cholesky ordering with adjusted degree of freedom to obtain the impulse responses. The variables follow the ordering in which they are listed below[24]. Unlike Hassan, Sanchez and Yu (2011) we determine the forecast error of the endogenous variables (bank deposits, private credit and liquid liabilities) decomposed over different time horizons[25] into components attributed to unexpected shocks (or innovations) of each endogenous policy and institutional variables using the dynamic BVAR system. The impulse responses all show a 95% credible interval for the 10 periods. This means that the forecast in FD following shocks in the institutional, policy and social variables lies with a 95% probability in the interval over the forecast horizon.

[24] The order of the variables is as follows: procedural democracy, substantive democracy, executive constraints, autocracy and per capita income before any social and/or economic variable of importance, depending on the income group and the proxy of FD applied.
[25] We apply horizons of 2, 5 and 10 years.

5.4.1 Variance decompositions and impulse responses for upper middle income countries.

The forecast error variance decompositions of FD in BVAR for this income group are presented in table 10.1a after 2, 5 and 10 years ahead, while table 10.1b shows the contribution of each variable to variations in FD10 years ahead on the average (mean variation) using all three proxies for FD. The results suggest that after 10 years on the average, substantive democracy and constraints on executives contribute more towards variations in FD among the institutional variables.

Table10.1a: Forecast error variance decomposition of financial development based on BVAR

Period	S Polity	Polity	xcon	auto	school	pop	pky	Gov't	Bank Deposits
					Bank deposits (dependent variable)				
2 years ahead	7.02	0.22	4.32	0.29	2.06	5.98	0.01	0.23	79.8
5 years ahead	6.22	0.32	4.16	0.33	11.52	5.94	0.01	0.28	71.2
10 years ahead	6.22	0.32	4.16	0.33	11.52	5.94	0.01	0.28	71.2
									Private credit
					Private credit (dependent variable)				
2 years ahead	0.39	0.01	0.19	0.06	-	1.08	0.81	0.02	97.41
5 years ahead	0.53	0.01	0.48	0.07	-	1.21	0.96	0.36	96.36
10 years ahead	0.56	0.01	0.48	0.07	-	1.21	0.96	0.36	96.36
									Liquid liabilities
					Liquid liabilities(dependent variable)				
2 years ahead	0.46	0.03	0.13	0.05	-	-	0.05	-	99.27
5 years ahead	1.05	0.05	0.77	0.08	-	-	0.09	-	97.59
10 years ahead	1.13	0.05	0.90	0.09	-	-	0.09	-	97.73

Notes: bank deposits, private credit and liquid liabilities are proxies for financial development. The other variables are defined as follows: Spolitiy IV –substantive democracy; Polity IV- procedural democracy; xcon- constraint on executives; auto-autocracy; school-school enrolment; pop-population; pky-per capita income; gov't-government expenditure.

Table10.1b: Mean variance decomposition of innovations to institutional and real sector variables ten years ahead- Upper middle income countries

S Polity	Polity	xcon	auto	school	pop	pky	Gov't
				Bank deposits			
6.2	0.2	4.1	0.3	11.5	5.9	-	0.2
				Liquid liabilities			
1.1	0.1	0.9	0.1	-	-	0.1	-
				Private credit			
0.6	0.01	0.5	0.1	-	1.2	1.0	0.4
				Mean variation			
2.6	0.1	1.8	0.2	3.8	2.4	0.4	0.2

Notes: All variables are defined as in tabl10.1a above

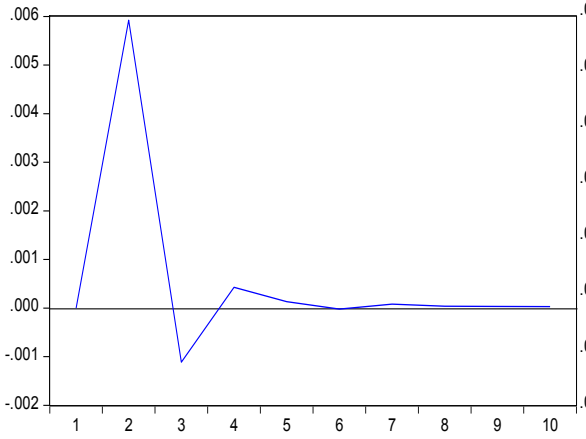
We turn to the BVAR analysis by first highlighting the effect of shocks on the institutional and policy variables on FD for the income group and then providing an analysis of the forecast error variance decomposition of FD. It is conventional that a variable in any VAR analysis explains a huge proportion of its forecast error variance (Hassan et al., (2011). This is the case for all income groups. For all income groups, the response of FD would influence the direction of policy accordingly. Figures 1 to 6 portray how innovations to the institutional, policy and social variables affect FD.

Procedural democracy

A positive shock in democracy causes FD to increase in the first few years when using bank deposits, private credit and liquid liabilities as proxies for FD in the upper middle income countries. Bank deposits and liquid liabilities decline but remain positive, Figure 4a and 4b, respectively. Private credit, however, declines and stays negative (See Figure 4c). In all, using the three proxies for FD, a shock in procedural democracy positively impacts on FD. Procedural democracy accounts for an average of just 0.10% of the variation in FD for this income group of countries. The results are consistent with the outcome of our initial estimates with democracy having a positive relationship with FD for the upper middle income countries.

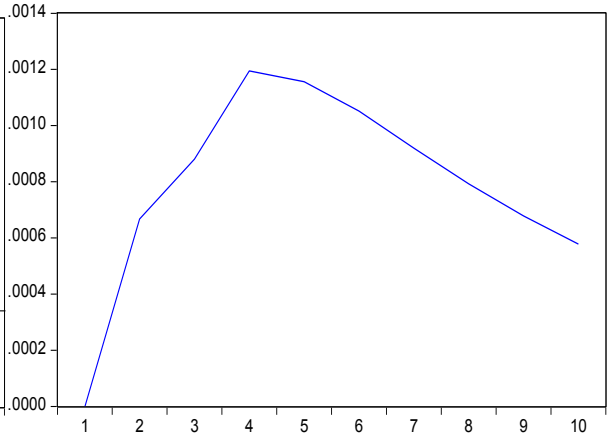
Figures 4a, 4b and 4c: FD response to shocks in procedural democracy

Figure 4a



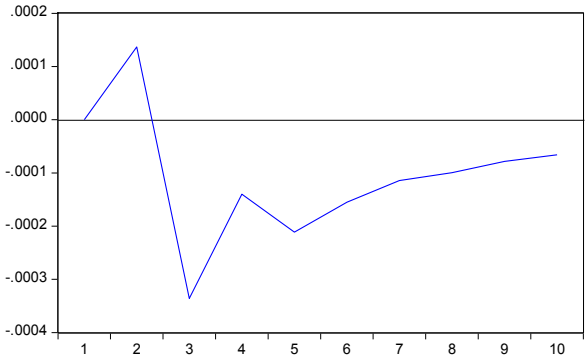
Response of bank deposits to one SD procedural democracy Innovation

Figure 4b



Response of liquid liabilities to one SD procedural democracy innovation

Figure 4c



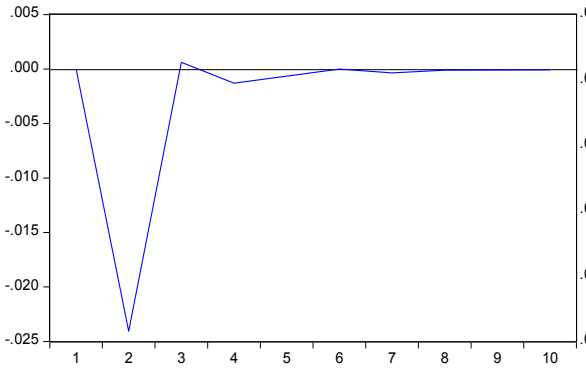
Response of private credit to one SDprocedural democracy innovation

Substantive democracy

An innovation to substantive democracy portrays a J-curve effect - a short-term decline in private credit and bank deposits that gradually ends uprising in both. The response of private credit is negative for the entire period (figure 5c) while the response of bank deposits is negative for the first four years and then stays positive for the rest of the period (figure 5a). The shock sharply increases liquid liabilities but it gradually decays in the long-term. It stays positive throughout with the highest positive effect during the second year (figure 5b). In all, a one standard deviation shock to substantive democracy is positive for FD. Substantive democracy accounts for averagely 2.6% of the variation in FD in the upper middle income countries and explains the highest proportion of the variation in FD among the institutional variables.

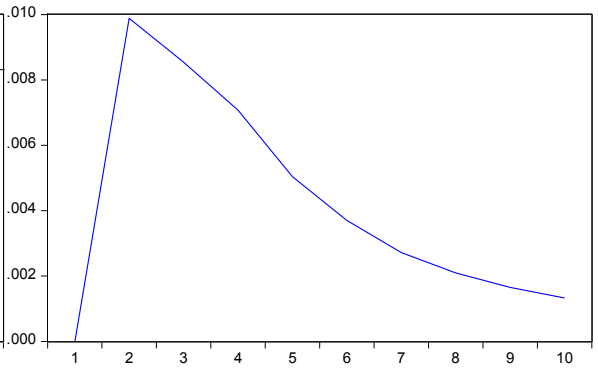
Figures 5a, 5b and 5c: FD response to shocks in substantive democracy

Figure 5a



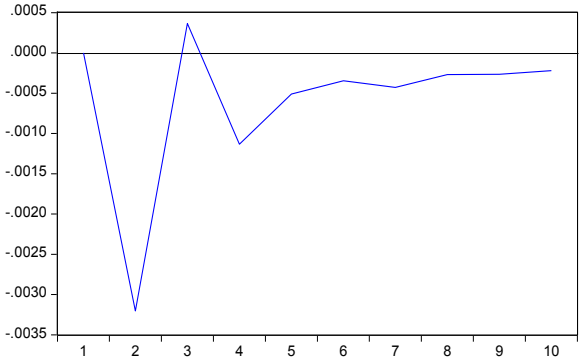
Response of bank deposits to one SD substantive democracy innovation

Figure 5b



Response of liquid liabilities to one SD substantive democracy innovation

Figure 5c



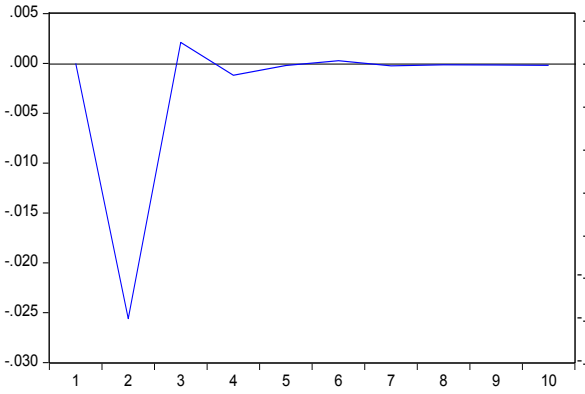
Response of private credit to one SD substantive democracy innovation

Constraint on executives

A shock in constraints on executives is initially negative for private credit (figure 6c) and bank deposits (figure 6a) for the first year, increases in the second year for all variables measuring FD and decreases in the third year before dying out and remaining negative for liquid liabilities and private credit (figures 6b and 6c respectively). Though the results are seemingly mixed it weighs more on a positive impact on FD. Generally, when the impulse is constraint on executives, the response of FD is positive for upper middle income countries. Using all measures of FD, constraints on executives averagely explains 1.5% of the variation in FD in the region.

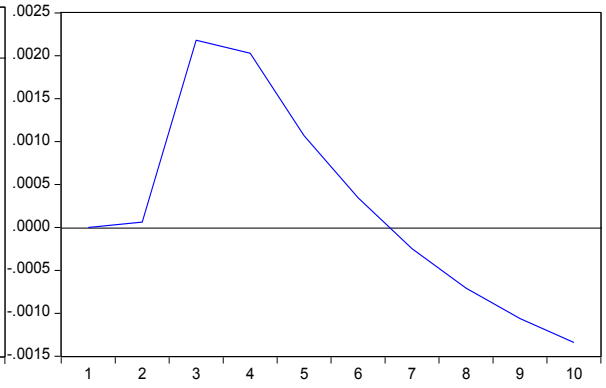
Figures 6a, 6b and 6c: FD response to shocks in procedural democracy

Figure 6a



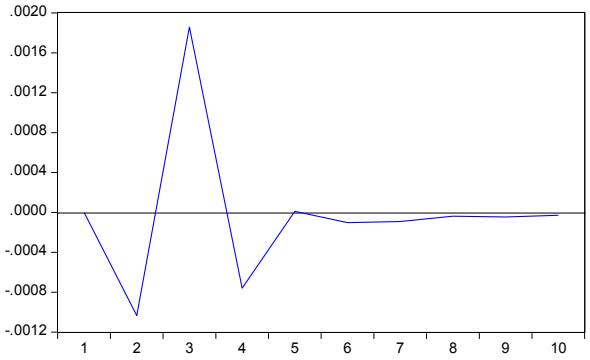
Response of bank deposits to one SD constraints on executives innovation

Figure 6b



Response of liquid liabilities to one SD constraints on executive innovation

Figure 6c



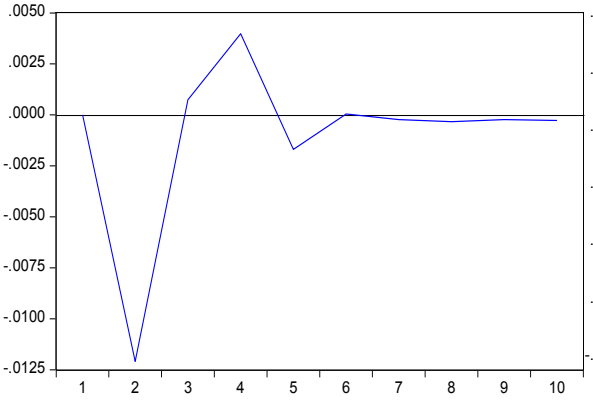
Response of private credit to one SD constraints on executive innovation

Autocracy

Shocks to autocracy are mostly negative after six years before levelling off using bank deposits and private credit as measures ofFD (figure 7a and 7c respectively). The shocks fluctuate after the first few years but stay positive (figure 7b) when the FD proxy is liquid liabilities. The response of bank deposits and private credit to a shock in autocracy is negative for at least eight years (figures 7a and 7c respectively). Generally, innovations to autocracy negatively affect FD for this income group of countries. This tends to correlate with the results of our initial estimates with autocracy portraying a negative and insignificant relationship. Variations in autocracy explain averagely 0.2% of the variation in FD for the group of countries under study.

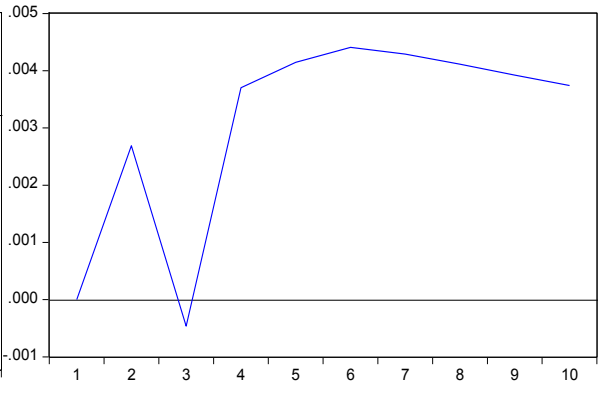
Figures 7a, 7b and 7c: FD response to shocks in autocracy

Figure 7a



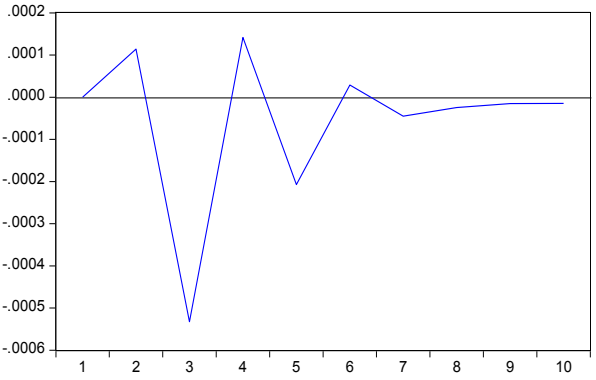
Response of bank deposits to one SD autocracy innovation

Figure 7b



Response of liquid liabilities to one SD autocracy innovation

Figure 7c



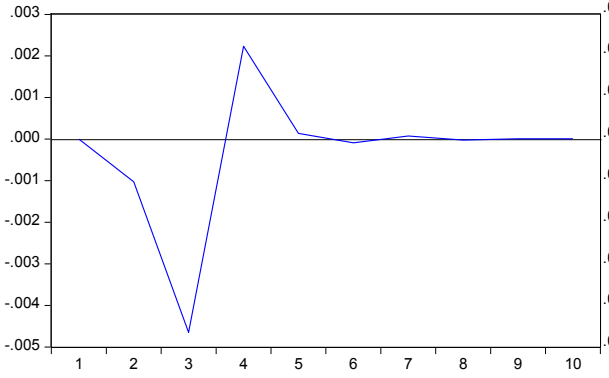
Response of private credit to one SD autocracy innovation

Per capita income

Shocks to per capita income increase liquid liabilities and private credit during the first two periods. Liquid liabilities stay positive for the entire period (figure 8b) but private credit declines sharply after two periods before increasing and briefly stays positive and then levelling off (figure 8c). Bank deposits experience an initial decline after the shock before sharply rising after three periods before decaying (see figure 8a). The response of shocks to per capita income is mostly negative for bank deposits, positive for liquid liabilities and private credit. Generally, when the impulse is per capita income, the response of FD is positive. Per capita income averagely accounts for 0.40% of variation in FD for the upper middle income countries.

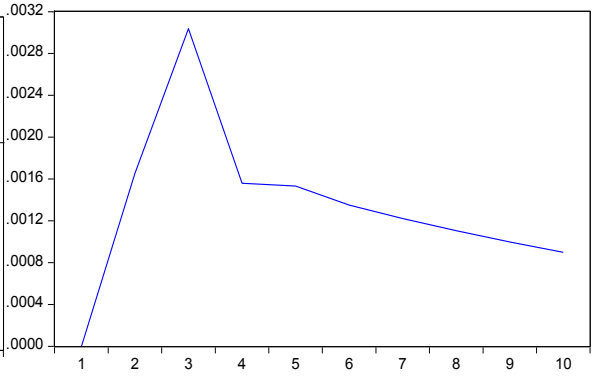
Figures 8a, 8b and 8c: FD response to shocks in per capita income

Figure 8a



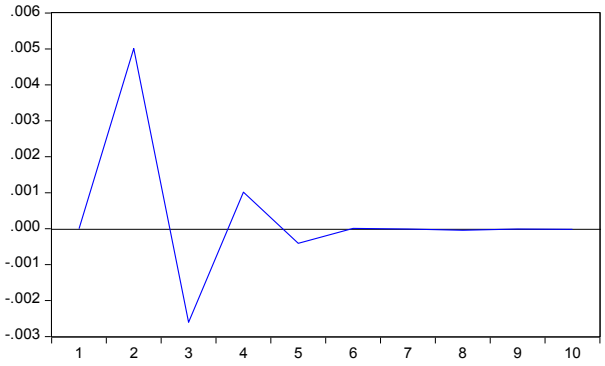
Response of bank deposits to one SD per capita income innovation

Figure 8b



Response of liquid liabilities to one SD per capita income innovation

Figure 8c



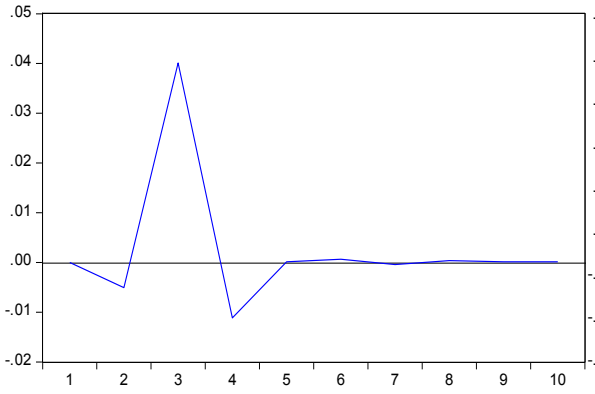
Response of private credit to one SD per capita income innovation

Response of financial development to shocks in social and economic (policy) variables

This section analyses the response of FD to shocks in some of the important social and economic variables used as control variables for the study. The results tend to suggest that a shock in school enrolment and population positively affects FD in the upper middle income countries (figures 9a and 9b respectively). Shocks to school enrolment (which is not an institutional measure) explain 3.8% of fluctuations in FD in general compared to an average of 2.6% for substantive democracy, 0.10% for procedural democracy, 1.8% for constraint on executives, 0.2% for autocracy and 0.4% for per capita income. This evidence tends to suggest the primacy of human capital over institutions in determining FD. This seems to corroborate with Djankov et al., (2003) findings who contend that institutional outcomes depend on educational endowments. FD responds positively to a shock to government spending (figure 9d) which in turn accounts for 0.2% of variations in FD – though not very significant. Innovations to population positively affect FD (figure 9c) and account for 2.4% of the variation in FD. The evidence seems to suggest that appropriate government fiscal policies may be influencing FD positively for this income group.

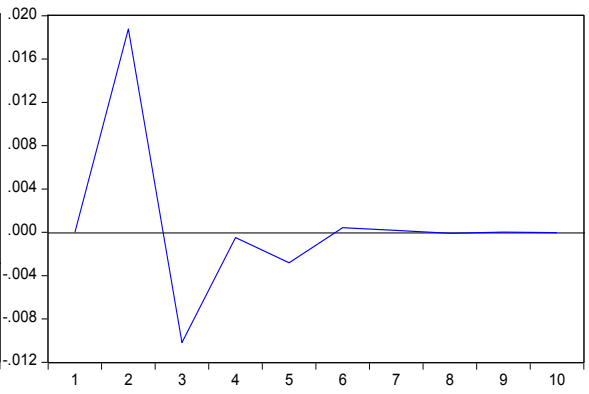
Figures 9a, 9b, 9c and 9d: FD response to shocks in school enrolment, population and government spending

Figure 9a



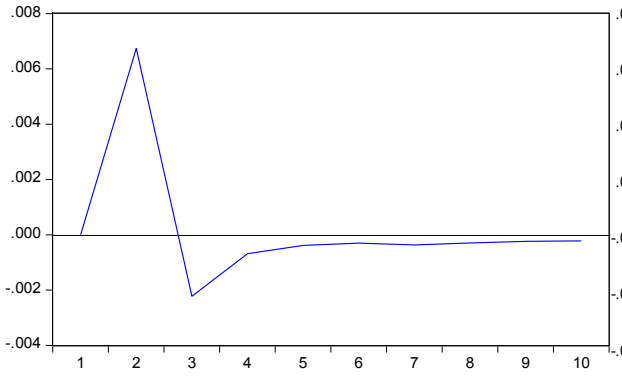
Response of bank deposits to one SD school enrolment innovation

figure 9b



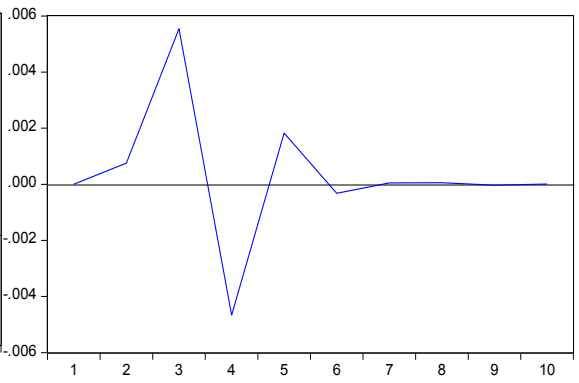
Response of bank deposits to one SD population innovation

Figure 9c



Respose of private credit to one SD population innovation

Figure 9d



Response of private credit to one SD government expenditure innovation

5.4.2 Variance decompositions and impulse responses for lower middle income countries.

We first provide an analysis of the variance decomposition of FD and then highlight the effect of shocks on the institutional and policy variables on financial development for the income group. Similar to the upper middle income group, the dependent variables in any VAR analysis explains a huge proportion of its forecast error variance as stipulated above.

The response of FD to shocks on institutional and real variables would influence the direction of policy especially when innovations negatively affect FD. A negative response to financial development following a shock would require the strengthening of institutions which may reduce political instability and hence instability of the financial system with the effect of improving confidence in the financial system and the saving and investment choices of

consumers and producers. A negative response to FD following a shock may trigger economic policies that impact on real variables with a positive feedback effect on FD. For instance, a shock to school enrolment that negatively affects FD may require some fiscal policy action; in this case an increase in government spending in education and training which may translate in the long-term to an increase in financial inclusion and hence positively influencing direct and indirect financing. A more educated and banked population would more probably increase the net worth households and firms thereby reducing risks associated with asymmetric information(adverse selection and moral hazard) hence increasing lending. Risk amelioration is thereby achieved.

The results from innovations to institutional and policy variables and responses of FD together with their variance decomposition is based on the BVAR specification in equation 5.3 above. Tables 10.1c and 10.1d portrays the results of variance decomposition and their mean values respectively for the lower middle income group with the three proxies for FD while figures 10 to 15 show the effect of shocks to institutional, policy and social variables on FD.

Table 10.1c: Forecast error variance decomposition of financial development based on BVAR

Period	S Polity IV	Polity IV	xcon	auto	school	pop	pky	fdi	Bank Deposits
					Bank deposits (dependent variable)				
2 years ahead	0.001	0.17	0.13	0.31	-	-	1.57	-	97.75
5 years ahead	0.07	0.17	0.13	0.37	-	-	1.65	-	97.50
10 years ahead	0.08	0.17	0.13	0.37	-	-	1.74	-	97.36
									Private credit
					Private credit (dependent variable)				
2 years ahead	0.02	0.02	0.04	0.34	5.61	-	0.05	0.51	98.71
5 years ahead	0.52	0.02	0.24	0.32	9.01	-	0.09	0.79	97.33
10 years ahead	0.58	0.02	0.57	0.36	9.44	-	0.09	0.80	97.28
									Liquid liabilities
					Liquid liabilities(dependent variable)				
2 years ahead	0.01	0.11	0.14	0.68	-	0.06	0.01	-	99.27
5 years ahead	0.67	0.12	0.28	1.21	-	0.06	0.01	-	97.59
10 years ahead	0.69	0.12	0.28	1.24	-	0.06	0.01	-	97.73

Notes: bank deposits, private credit and liquid liabilities are proxies for financial development. The other variables are defined as follows: Spolitiy IV –substantive democracy; Polity IV- procedural democracy; xcon- constraint on executives; auto-autocracy; school-school enrolment; pop-population; pky-per capita income; fdi-foreign direct investment

Table 10.1d: Mean variance decomposition of innovations to institutional and real sector variables ten years ahead

S Polity IV	Polity IV	xcon	auto	school	pop	pky	fdi
				Bank deposits			
0.08	0.17	0.13	0.36	-	-	1.73	-
				Liquid liabilities			
0.69	0.12	0.28	1.24	-	0.06	0.01	-
				Private credit			
0.58	0.02	0.57	0.37	9.44	-	0.09	0.81
				Mean variation			
0.45	**0.10**	**0.33**	**0.66**	**3.15**	**0.02**	**0.61**	**0.27**

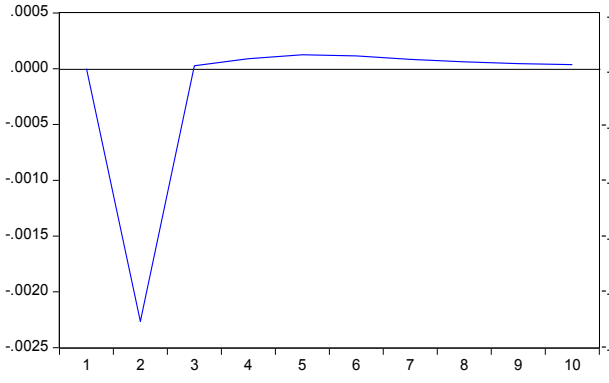
Notes: All variables are defined as in table 10.1c above

Procedural democracy

An innovation to democracy results in a decrease in FD after the first two periods before it sharply recovers and decays thereafter but remains negative for liquid liabilities and private credit (figures 10b and 10c respectively) and marginally positive for bank deposits (figure 10a). Generally shocks to democracy negatively affect FD using all three measures of FD. Democracy averagely accounts for 0.10% of variation in FD for these groups of countries.

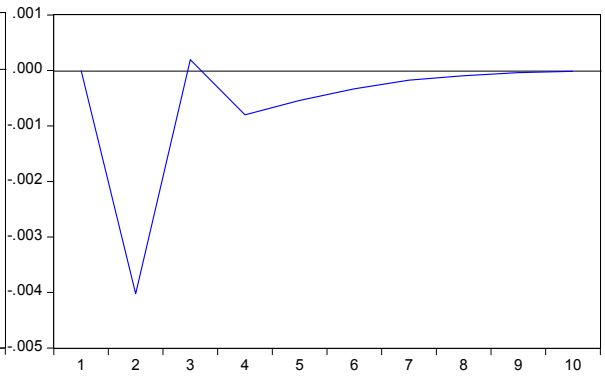
Figures 10a, 10b and 10c: FD response to shocks procedural democracy

Figure 10a



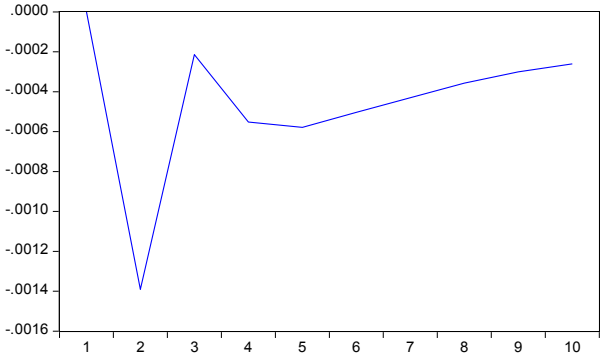
Response of bank deposits to one SD procedural democracy innovation

Figure 10b



Response of liquid liabilities to one SD procedural democracy innovation

figure 10c



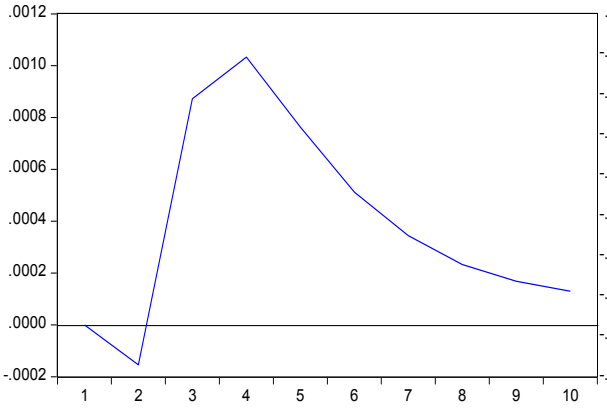
Response of private credit to one SD procedural democracy innovation

Substantive democracy

A shock in substantive democracy causes liquid liabilities and private credit to rapidly decrease during the first three years before it recovers and dies out after 10 years, though remaining negative for the entire period (see figure 11b and 11c respectively). Bank deposits, however, increase after an initial decline for two years and stay positive before decaying (Figure 11a). In all, the response of FD to shocks in substantive democracy is generally negative taking into consideration all the measures of FD. Substantive democracy explains averagely 0.45% of variation of FD in the lower middle income countries compared to 2.6% in upper middle income countries.

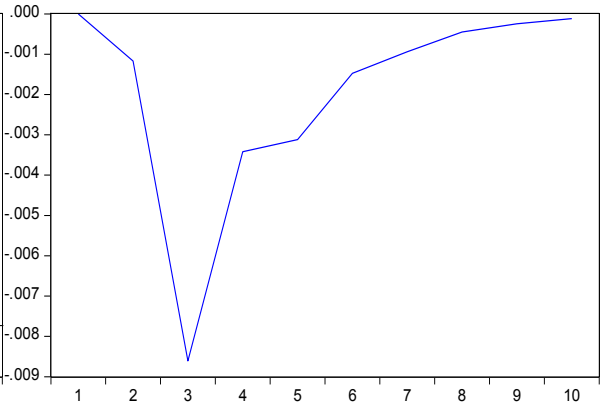
Figures 11a, 11b and 11c: FD response to shocks substantive democracy

Figure 11a



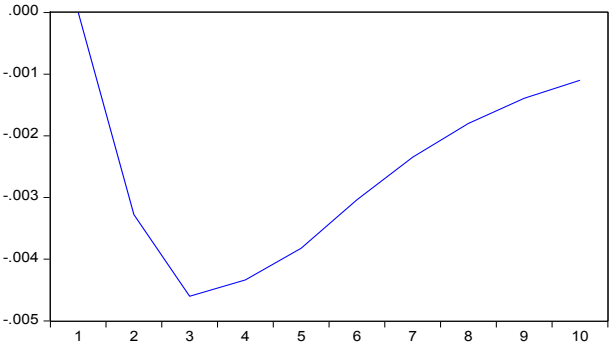
Response of bank deposits to one SD substantive democracy innovation

Figure 11b



Response of liquid liabilities to one SD substantive democracy innovation

Figure 11c



Response of private credit to one SD substantive democracy innovation

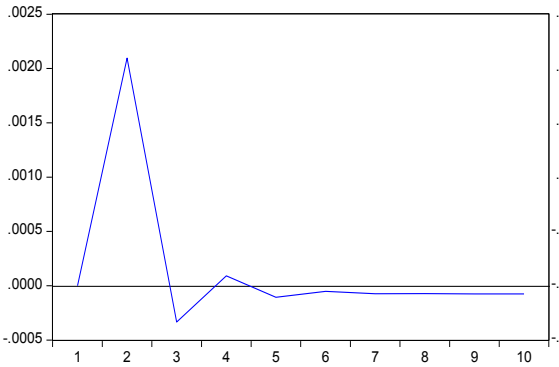
Executive constraints

Private credit responds negatively to a shock in executive constraints (figure 12c) while bank deposits initially increase for two periods before declining sharply (figure 12a). The response of liquid liabilities is negative for two periods, increases for the next two periods and finally

declines before decaying (figure 12b). In all, a shock in executive constraints negatively affects FD taking all three measures of FD into consideration. Executive constraints averagely contribute 0.33% of the variation in FD in the lower middle income countries compared to 1.8% in the upper middle income countries.

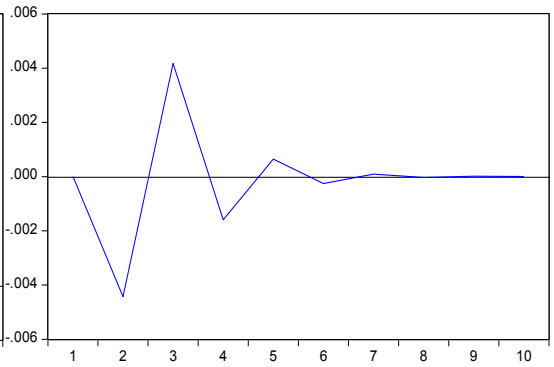
Figures 12a, 12b and 12c: FD response to shocks inconstraints on executives

Figure 12a



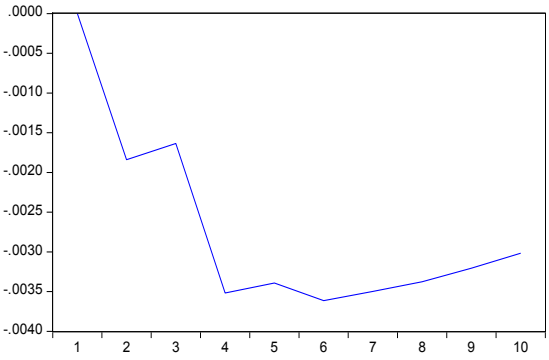
Response of bank deposits to one SD executive constraints innovation

Figure 12b



Response of liquid liabilities to one SD executive constraints innovation

Figure 12c



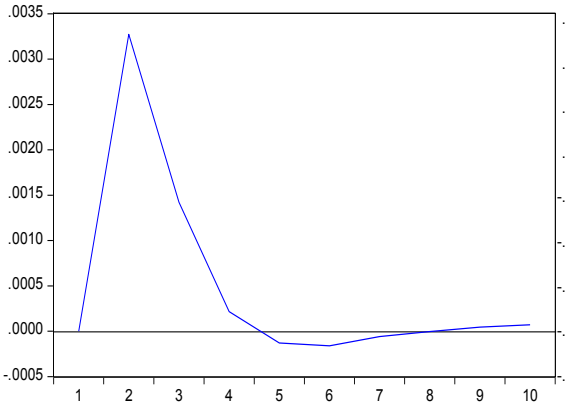
Response of private credit to one SD executive constraints innovation

Autocracy

Shocks in autocracy decrease private credit and liquid liabilities for the first two years then gradually rise in the long-term, though not significantly above zero (figure 13c and 13b respectively). The effect on bank deposits is positive in the first four years, but declines and decays in the long-term (figure 13a). Generally, the impulse response function shows that a shock in autocracy positively affects FD. This forecast suggests decreasing levels of autocracy following increasing democratisation. Autocracy explains 0.66% of FD variation on average.

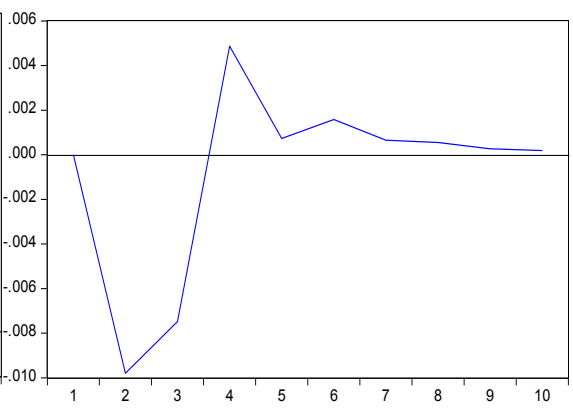
Figures 13a, 13b and 13c: FD response to shocks inautocracy

Figure 13a



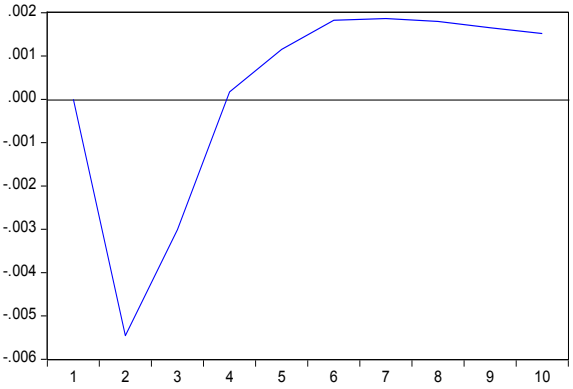
Response of bank deposits to one SD autocracy innovation

Figure 13b



Response of liqiud liabilities to one SD autocracy innovation

Figure 13c



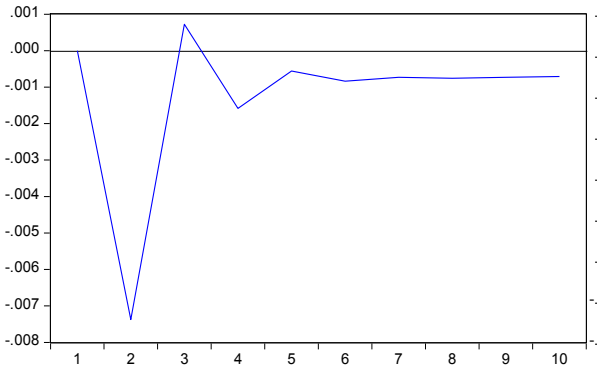
Response of private credit to one SD autocracy innovation

Per capita income

Private credit responds positively to shocks in per capita income for their entire response period (figure 14c) while liquid liabilities respond positively for the first four years and negatively for the next four years before dying out (figure 14b). Bank deposits respond negatively to the shock for almost the entire period (figure 14a). An innovation in per capita income generally increases FD for the lower middle income countries. Per capita income accounts for 0.61% of the variation in FD for this income group of countries.

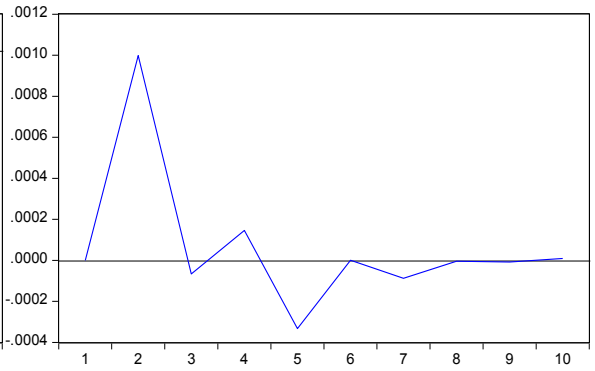
Figures 14a, 14b and 14c: FD response to shocks inper capita income

Figure 14a



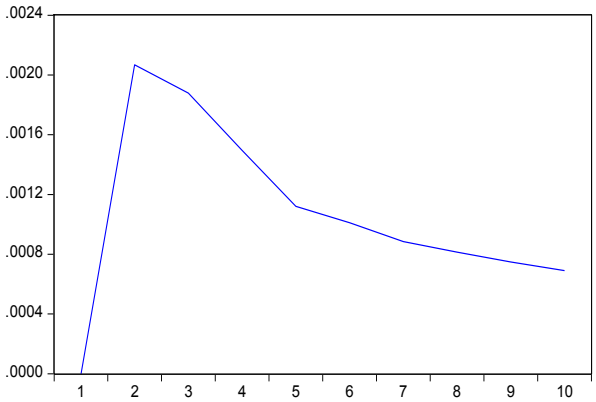
Response of bank deposits to one SD per capita income innovation

Figure 14b



Response of liquid liabilities to one SD per capita income innovation

Figure 14c



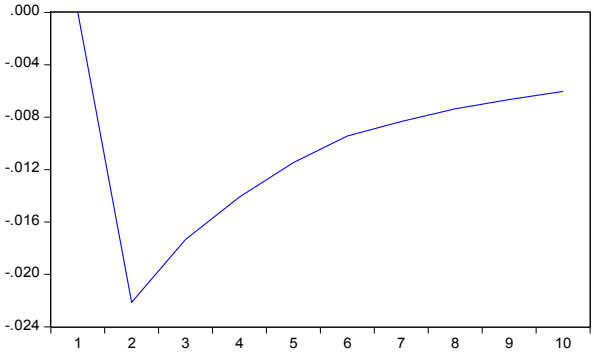
Response of private credit to one SD per capita income innovation

Response of financial development to shocks in social and economic variables

The social and economic variables of interest are school enrolment a proxy for human capital development and FDI respectively. A shock to school enrolment is negative for FD (figure 15a) and explains 3.15% of variations in FD compared to 0.45%, 0.10%, 0.33%, 0.66% and 0.61% for substantive democracy, procedural democracy, constrain on executives, autocracy and per capita income respectively in lower middle income group of countries. The importance of human capital development is highlighted by this evidence and would warrant some fiscal policy intervention, most likely an increase in governments' budgetary allocation towards improving education and training to mitigate the negative effects on FD. An innovation to FDI which measures capital account openness positively affects financial development (figure 15b) and accounts for 0.27% of variations in FD. Though the variation is not very significant, it still underscores the relation between trade openness, the institutional quality and FD, (Do and Levchenko, 2007; Minier, 2007).

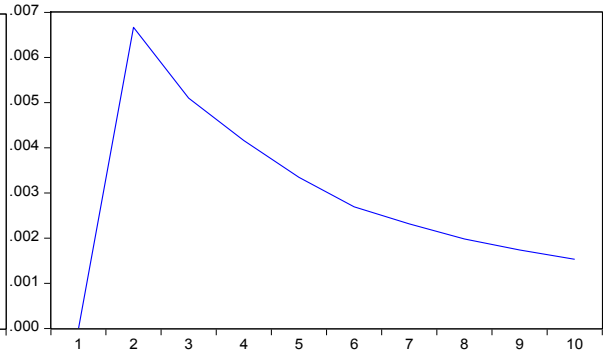
Figures 15a and 15b: FD response to shocks inschool enrolment and

Figure 15a



Response of private credit to one SD school enrolment innovation

Figure 15b



Response of private credit to one SD FDI innovation

5.4.2 Variance decompositions and impulse responses for low income countries.

In the same spirit as for the other income groups, we carry out impulse responses and forecast error variance decompositions of FD. Tables10.1e and 10.1f below reports the error variance decompositions 2, 5 and 10 years ahead and their mean values respectively, while figures 16 to 21 display the effect of shocks to institutional, policy and social variables on FD.

Table 10.1e: forecast error variance decomposition of financial development based on BVAR

Period	S Polity IV	Polity IV	xcon	auto	inf	sch	fdi	gov	top	pky	Bank Deposits
						Bank deposits (dependent variable)					
2 years ahead	0.19	0.001	0.41	1.14	0.99	-	0.59	-	-	0.002	96.6
5 years ahead	0.31	0.01	0.90	1.16	1.01	-	0.60	-	-	0.02	95.9
10 years ahead	0.32	0.01	0.97	1.17	1.01	-	0.61	-	-	0.03	95.5
											Private credit
						Private credit (dependent variable)					
2 years ahead	0.16	0.001	0.03	0.02	0.12	0.26	-	0.09	0.13	0.001	98.8
5 years ahead	0.18	0.09	0.05	0.06	0.12	0.26	-	0.12	0.15	0.002	98.4
10 years ahead	0.18	0.09	0.05	0.06	0.12	0.26	-	0.12	0.15	0.002	98.2
											Liquid liabilities
						Liquid liabilities(dependent variable)					
2 years ahead	0.01	0.11	1.29	0.01	-	0.27	-	0.13	-	0.10	97.8
5 years ahead	0.09	0.11	1.29	0.05	-	0.29	-	0.14	-	0.11	97.3
10 years ahead	0.09	0.11	1.29	0.05	-	0.29	-	0.14	-	0.11	97.4

Notes: bank deposits, private credit and liquid liabilities are proxies for financial development. The other variables are defined as follows: Spolitiy IV –substantive democracy; Polity IV- procedural democracy; xcon- constraint on executives; auto- autocracy; sch-school enrolment; pky-per capita income; fdi-FDI; top-trade openness; gov-government expenditure

Table 10.1f: Mean variance decomposition of innovations to institutional and real sector variables ten years ahead

S Polity IV	Polity IV	xcon	auto	pky	inf	gov	sch	fdi
				Bank deposits				
0.33	0.01	0.97	0.16	0.02	-	-	-	0.61
				Liquid liabilities				
0.09	0.08	1.49	0.05	0.11	-	0.12	0.23	-
				Private credit				
0.18	0.09	0.04	0.05	0.02	0.12	0.12	0.26	0.15
				Mean variation				
0.20	**0.10**	**0.83**	**0.42**	**0.05**	**0.38**	**0.08**	**0.18**	**0.25**

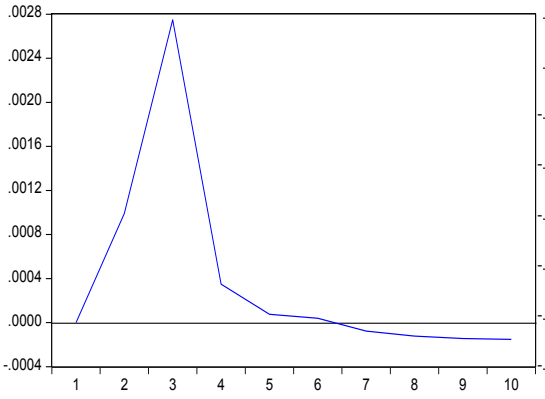
Notes: All variables are defined as in table 10.1e above

Procedural democracy

A shock in democracy causes liquid liabilities and private credit to decrease during the first three years, then recovers after a year and decays (see figures 16b and 16c). The shock results in growth in bank deposits for three periods before facing a decline in the next year and gradually dies out (figure 16a). The response of liquid liabilities and private credit to an innovation in democracy is negative and positive for bank deposits. Generally, a shock in democracy decreases FD. A procedural democratic shock explains just 0.10% of FD fluctuations on average.

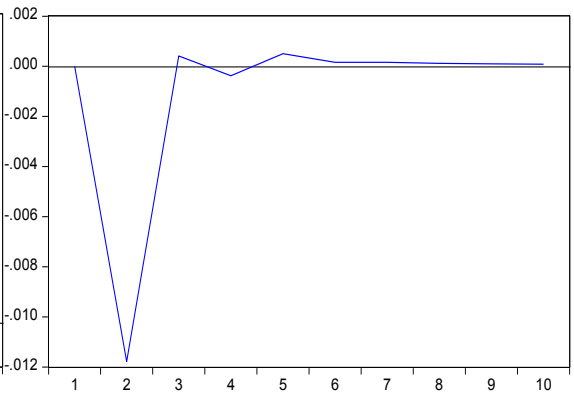
Figures 16a, 16b and 16c: FD response to shocks inprocedural democracy

Figure 16a



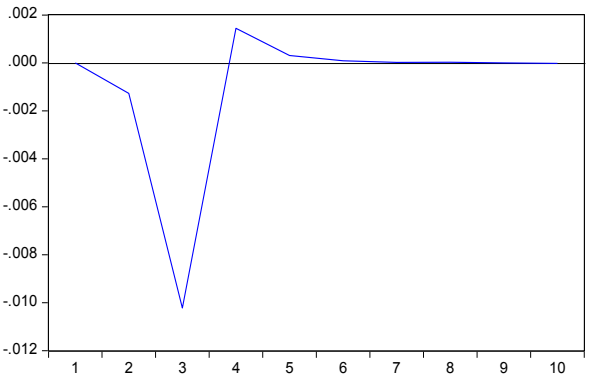
Response of bank deposits to one SD procedural democracy innovation

Figure 16b



Response of liquid liabilities to one SD procedural democracy innovation

Figure 16c



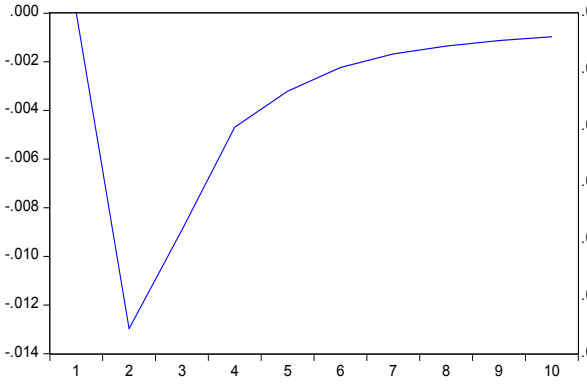
Response of private credit to one SD procedural democracy innovation

Substantive democracy

The impulse response function shows that innovations to substantive democracy decrease private credit for three years and bank deposits for two years before recovering (figure 17a and 17c respectively). The shock increases liquid liabilities for three years before it declines and dies out (figure 17b). The shock negatively affects bank deposits and private credit. Generally, a shock in substantive democracy tends to decrease FD. Substantive democracy explains 0.20% of FD variation for this group of countries.

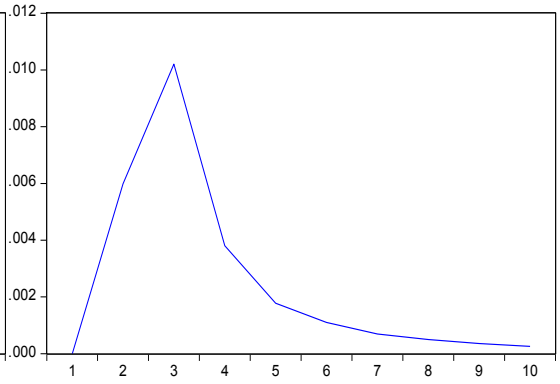
Figures 17a, 17b and 17c: FD response to shocks insubstantive democracy

Figure 17a



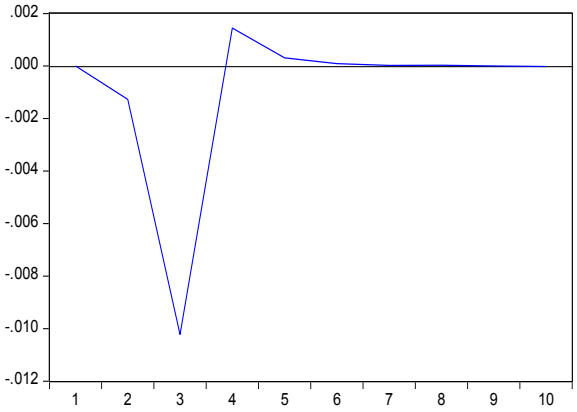
Response of bank deposits to one SD substantive democracy innovation

Figure 17b



Response of liquid liabilities to one SD substantive democracy innovation

Figure 17c



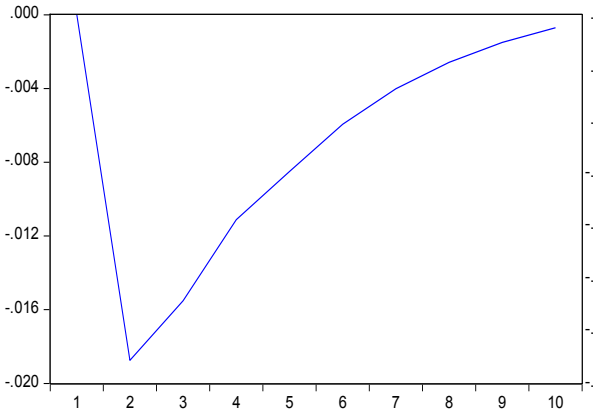
Response of private credit to one SD substantive democracy innovation

Executive constraints

An innovation to constraints on executives is generally negative for FD with the highest negative effect occurring during the first two years. A shock decreases bank deposits for the entire period (figure 18a), decreases liquid liabilities for the first two periods before marginally becoming positive and eventually levelling off (figure 18b). The effect on private credit is negative for the first five years, recovers briefly and becomes negative (figure 18c). Constraints on executives seem to play the most important role in explaining variations in FD compared to the other democratic institutional and real variables. Executive constraints account for 0.83% of variation in FD for this group of countries.

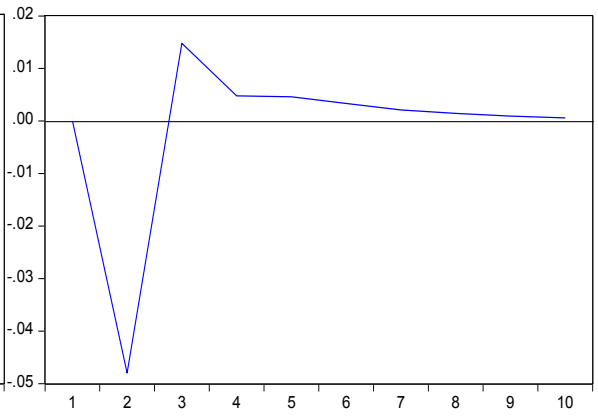
Figures 18a, 18b and 18c: FD response to shocks inexecutive constraints

Figure 18a



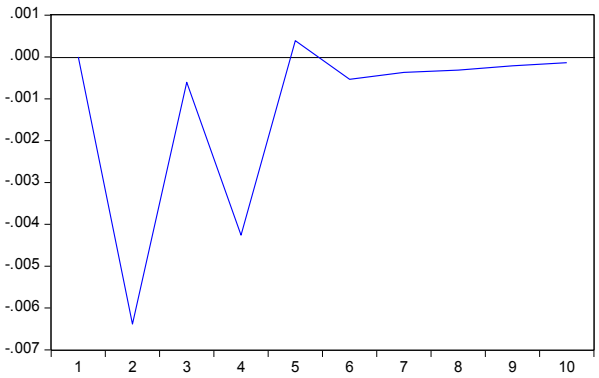
Response of bank deposits to one SD executive constraints innovation

Figure 18b



Response of liquid liabilities to one SD executive constraints innovation

Figure 18c



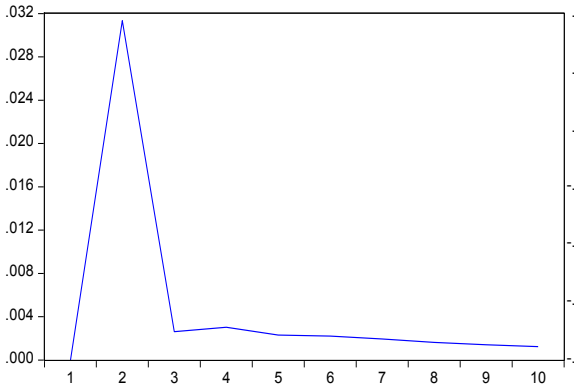
Response of private credit to one SD executive constraint innovation

Autocracy

Shocks in autocracy increase bank deposits and private credit promptly for the first three to four years. The effect on bank deposits is positive for the entire period (figure 19a) while private credit becomes negative after the third period, briefly recovers for two periods before becoming negative again (figure 19c). The shock decreases liquid liabilities for the first three years, recovers and becomes positive for a year or so and once again becoming negative for the rest of the period (figure 19b). The effect of an innovation on autocracy is generally positive for FD. Autocracy explains the second-highest proportion of FD variation (0.42%) for this group of countries.

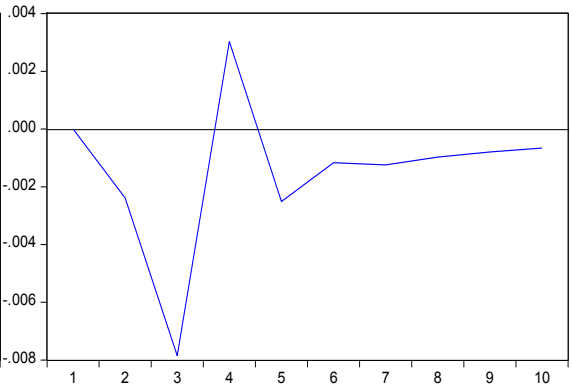
Figures 19a, 19b and 19c: FD response to shocks inautocracy

Figure 19a



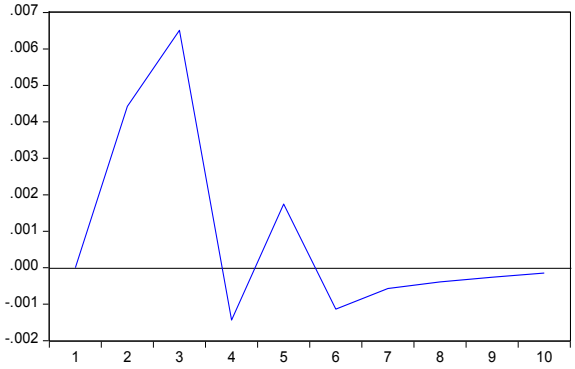
Response of bank deposits to one SD autocracy innovation

Figure 19b



Response of liquid liabilities to one SD autocracy innovation

Figure 19c



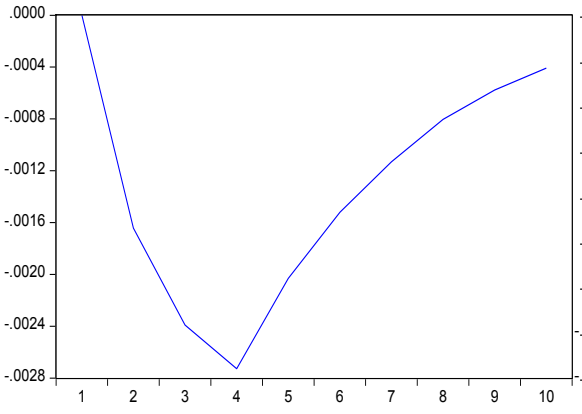
Response of private credit to one SD autocracy innovation

Per capita income

A shock in per capita income decreases bank deposits for the first four periods before recovering but remains the entire period (figure 20a). The effect on private credit is negative for the first two periods, then recovers and stays positive for the next two periods, then it declines and becomes negative before itrecovers and decays (figure 20b).Liquid liabilities increase for the first three years, then quickly decline before dying out (figure 20c). Generally, an innovation in per capita income is negative for FD. Per capital income insignificantly contributes to variations in FD, accounting for just 0.05%.

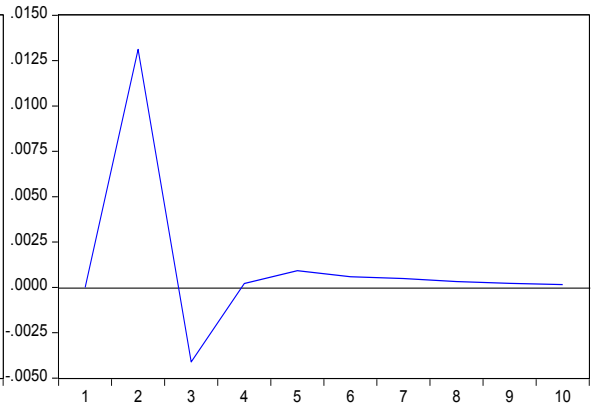
Figures 20a, 20b and 20c: FD response to shocks inper capita income

Figure 20a



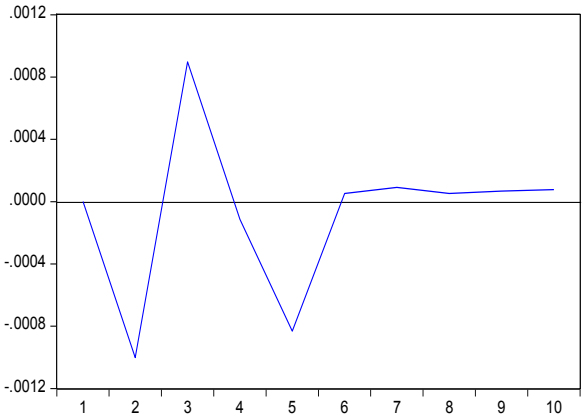
Response of bank deposits to one SD per capita income innovation

Figure 20b



Response of liquid liabilities to one SD per capita income innovation

Figure 20c

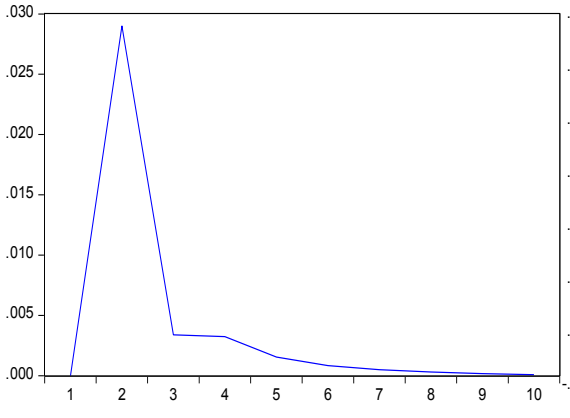


Response of private credit to one SD per capita income innovation

Response of financial development to shocks in social and policy variables: trade openness, school enrolment, government expenditure and inflation

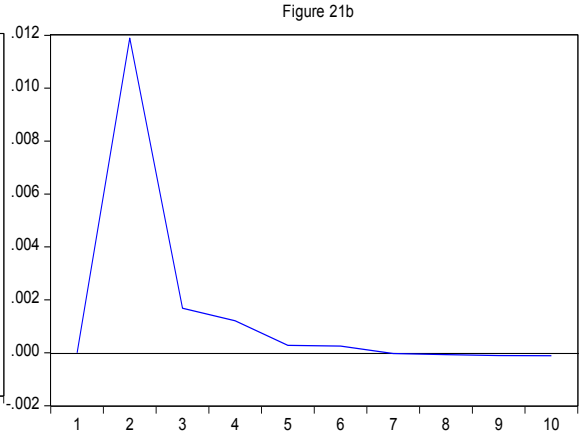
Innovations on inflation, government expenditure, trade openness and FDI positively affect FD at least for the first two periods before declining and decaying (see figures 21a, 21b, 21c, 21d, 21e, 21f, 21g and 21h) for this income group. Shocks on school enrolment produce some mixed results – they positively affect FD when using private credit (figure 21d) but negatively when using liquid liabilities as a measure (figure 21c) for the first two periods before dying out. This suggests that different measures of FD may lead to different outcomes.

Figure 21a



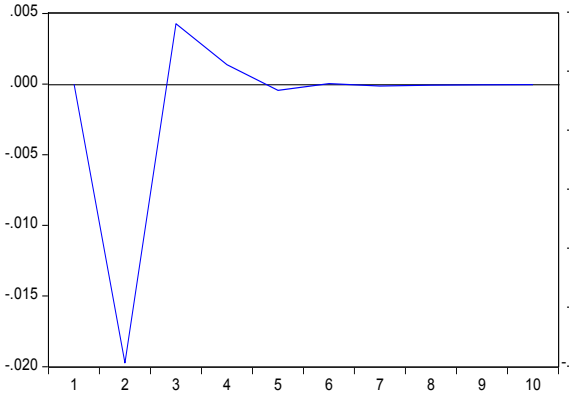
Response of bank deposits to one SD inflation innovation

Figure 21b



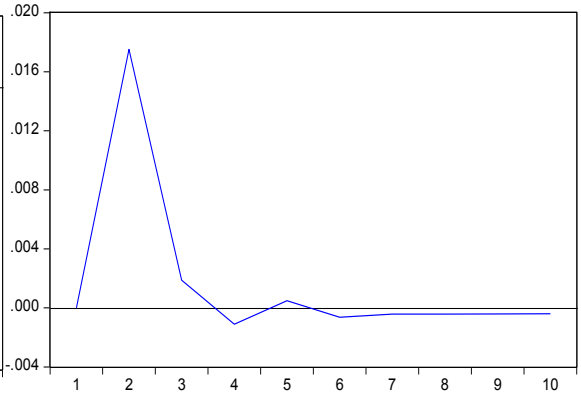
Response of private credit to one SD inflation innovation

Figure 21c



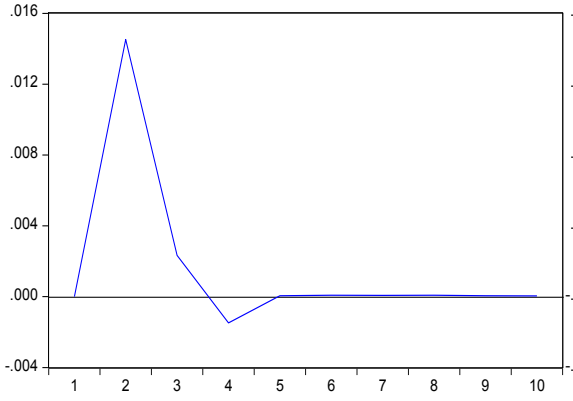
Response of liquid liabilities to one SD school enrolment innovation

Figure 21d



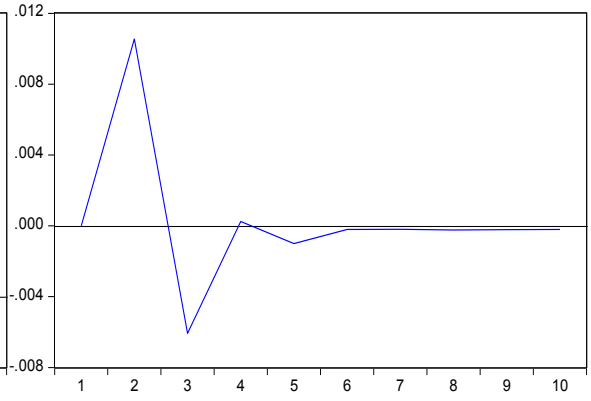
Response of private credit to one SD school enrolment innovation

Figure 21e



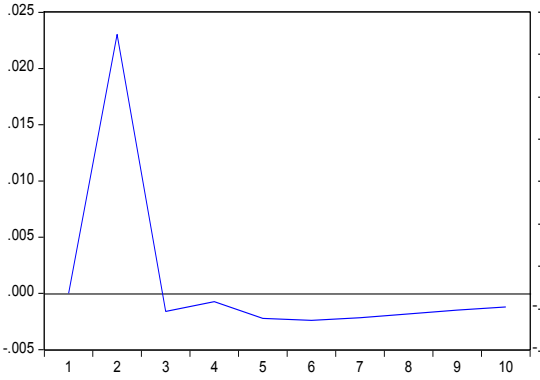
Response of liquid liabilities to one SD government expenditure innovation

Figure 21f



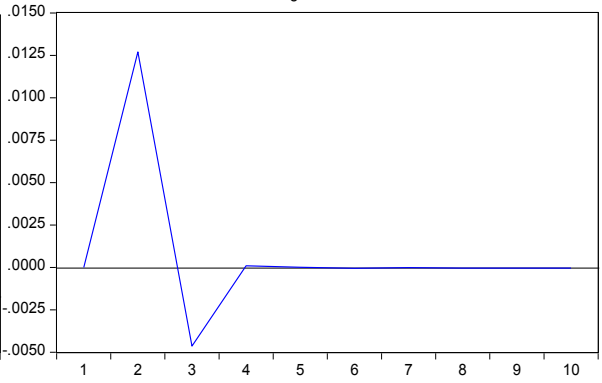
Response of private credit to one SD government expenditure innovation

Figure 21g



Response of bank deposits to one SD FDI innovation

Figure 21h



Response of private credit to one SD trade openness innovation

Real sector variables generally explain a very low proportion of financial sector development variation compared to democratic institutions for this income group. Of the policy variables, inflation accounts for the greatest variation in FD. On average, constraints on executives seem to account for the greatest variation in FD followed by autocracy considering both real and institutional variables.

5.5 Effect of Democratisation

The African continent was hit by a wave of democratisation since the 1990s[26], a period that coincided with SADC countries designing and implementing policies to improve the development of their financial sectors (see chapter 2). In order to determine whether democratisation is having a meaningful effect on FD for all income groups during this period, we split the sample and run similar regressions from 1990 – 2013 and compare it with the results obtained between 1975 and 2013.

The initial results obtained from panel regressions for the upper middle income countries during the period 1975-2013 are similar to that obtained from 1990 -2013. Evidence for the two periods suggests that democratic institutions generally have a positive effect on FD except for the coefficient of substantive democracy which tends to be negative though insignificant for the period 1990-2013. The coefficient of autocracy is negative and significant suggesting that the level of autocracy during this period decreased with increasing democratisation. For the lower middle and low-income countries, the scenario seems to be the same for the two periods as well. The results in general suggest that democratic institutions negatively affect FD, though statistically insignificant. Some positive effects of

[26]According to Matlosa (2006) a large number of studies affirming the fact that many countries in the African continent have been experiencing the process of democratization in the 1990s(see: Ake, 1996; Hyslop, 1999; Reynolds, 1999; Ake, 2000; UNDP, 2002; Bratton & van de Walle, 1997; Huntington, 1991; Bujra & Buthelezi, 2002, among others).

improved democratisation emerged for the low-income countries with autocracy being negatively associated with FD for the period 1990-2013, contrary to the result observed for the period 1975 – 2013, though it could be argued that it may be as a result of the choices of the regime in power, not necessarily constraints on them by democratic institutions.

The results from the BVAR impulse responses tend to corroborate with the evidence obtained from panel regressions for both periods. Evidence from the low-income group unambiguously shows that innovations to all democratic institutional variables negatively affect FD for both periods. For the lower middle income countries shocks to executive constraints and per capita income positively affect FD between 1990 and 2013. The results were negative between 1975 and 2013. Shocks in autocracy positively affect FD in both periods, suggesting that the dictatorial choices of governments for this income group tend to favour policies that seem to promote FD. One could argue that the governments of this income group of countries carry out policy choices not subjected to pressures from any institution or it could be as a result of some bandwagon effect – replicating policies to improve FD of other governments in the region since that is the trend, in order not to be left out. The results for the upper middle income countries are similar in both periods, generally suggesting that shocks to democratic institutional variables positively affect FD and negatively affect FD in the case of autocracy as expected.

The MSM for the two periods suggests that the probability of remaining in a state of high FD is greater for the upper middle income countries though this income group experience a decrease in probability in absolute terms. However, the expected duration of being in a state of high FD increased. The effects of democratisation could clearly be seen in the lower middle and low-income countries where the probability of staying in a state of low FD is lower between 1990 and 2013 suggesting the positive effect of increasing democratisation. Table 11 below shows comparative results of the MSM between the two periods.The panel regression results (1990-2013) and the analyses of t(z) statistics are reported in appendices F and G respectively while a comparative analyses of the two periods (1975-1990) and 1990-2013) is reported in appendix H.Results of the BVAR together with analyses between (1990-2013) are reported in appendix I.

Table 11: Mean regime transition probabilities and expected durations between 1975-2013 and 1990-2013

Upper middle income			
Regime 1		**Regime 2**	
1975-2013			
Probability	0.80	Probability	0.75
Duration	9	Duration	5
1990-2013			
Probability	0.66	Probability	0.34
Duration	13	Duration	3.4
Lower middle income			
Regime 1		**Regime 2**	
1975-2013			
Probability	0.53	Probability	0.79
Duration	2	Duration	4.8
1990-2013			
Probability	0.60	Probability	0.40
Duration	3.4	Duration	1.9
Low-income			
Regime 1		**Regime 2**	
1975-2013			
Probability	0.69	Probability	0.96
Duration	3.3	Duration	26
1990-2013			
Probability	0.75	Probability	0.25
Duration	4.4	Duration	1.3

5.6 Conclusion

The empirical findings for the upper middle income countries overwhelmingly suggest that democratic institutions on average contribute positively towards FD using all three proxies for FD in the OLS and IV regression models. The results also show autocracy as having a negative association with FD. These findings corroborate with evidence shown by Girma and Shortland (2008), Huang (2010), Yang (2011), Miletkov and Wintoki (2012), Deepraj and Nabamita (2013), among others and imply that legal and institutional development which is positively associated with democracy matter for FD. For the upper middle income countries, we show evidence that innovations to democracy (substantive and procedural), constraint on executives and per capita income produce positive outcomes for FD and that substantive democracy accounts for highest FD variation among the institutional variables applied. However, shocks to school enrolment and population explained the highest variation in FD, suggesting the importance of educational endowments on institutional outcomes. The positive effect of population on FD suggests the increasing level of financial inclusion in the economies of this income group of countries. The results also reveal that the effect of democracy on FD could be non-linear through government spending and per capita income

suggesting that democratic institutions do matter for policy variables. The non-linearities are consistent with evidence revealed from the work of Minier (2007).

For the lower middle income countries, the initial results from OLS and IV regression models generally suggest that the contribution of democratic institutions to FD when applying all three measures of FD is mixed. The results are generally skewed towards having a minimal impact on FD. While there seems to be a positive contribution of procedural democracy and per capita income to FD, their contribution is insignificant. These results are, somehow, reflected in the BVAR estimations where shocks in the institutional variables negatively affect FD except for autocracy and per capita income where shocks positively contribute towards FD. The contribution of executive constraints is negative and significant, seemingly suggesting that elements of autocracy within the political regimes of the countries in question may be creating instability which negatively impacts on FD. A seemingly interesting result from the variance decomposition shows autocracy as contributing the most towards variation in FD among the institutional variables. Since the forecast is ten periods ahead, the result suggests that decreasing levels of autocracy may be having a positive impact on FD. The importance of human capital development is once again highlighted, significantly contributing the highest towards variations in FD for this income group (3.51%). Consistent with one of our hypothesis, we show evidence from the MSM that countries in this income group have a 0.53 probability of being in the regime of high FD compared to a 0.79 probability of being in a state of low FD and expected to spend an average of 2 and 5 years on average in these states, respectively. The duration in each state suggests some volatility in FD which may be attributed to ineffective implementation of designed policies probably resulting from democratic institutional weaknesses.

The initial findings of the low income countries after applying OLS and IV regressions with all three measures of FD, suggest that per capita income and both substantive and procedural democracy negatively affect FD, while the effect of constraints on executives seems to be positive and significant. The effect of autocracy is positive but insignificant. These results, somehow, in line with the BVAR findings for this income group which show that per capita income and both substantive and procedural democracy produce negative outcomes for FD following innovations on these variables. Shocks to constraints on executives result in negative outcomes for FD while innovations on autocracy are positive for FD. The effect of social and economic variables following shocks emerge to be weaker for FD, with inflation accounting the most towards variation in FD. What stands out is that weak legal and democratic institutions may be exerting negative effects on FD possibly as a result of political instability. This evidence seems to correlate with Matlosa's (2006) observations for

this group of countries. His findings suggest that the countries in this income group have a prevalent trend of a lawfully ensconce one-party system that ensures the continued supremacy of ruling parties that stifles open political competition. Such conditions may provide a perfect recipe for political instability as has been observed in Mozambique and Zimbabwe. With the effect of autocracy and shocks thereof having a positive effect on FD, we follow La Porta, Lopez-de-Silanes, Pop-Eleches and Shleifer (2004) and argue that the dominance of the ruling party may entrench some competitive form of authoritarianism or advanced authoritarianism masked as democracy with the choices made by authoritarian regimes and not the constraints on them that have allowed these countries to make some gains towards FD. The policy choices of authoritarian regimes and not the constittutional constraints on them could be having a positive effect on FD. A possible reason for the negative impact on FD by per capita income may be attributed to the low levels of intermediation by financial institutions due to the high levels of financial exclusion or the increasing use of the curb market thereby drastically decreasing intermediation by financial institutions. Low levels of per capita income may suggest that a significant proportion of the population are either unemployed or are engaged in the informal sector which makes it difficult for them to open bank accounts or get any form of credit. These results, though suggestive, tend to corroborate with evidence obtained from the MSM where this group of countries experience a 0.96 chance of being in a state of low FD and a 0.69 chance of attaining a high FD state accompanied by a very long duration of staying in the state of low FD (26 years).

CHAPTER 6

CONCLUSION AND POLICY IMPLICATIONS

6.1 Introduction

In this chapter the study presents summaries of findings and conclusions as well as some policy implications based on the findings of the three income groups analysed in the previous chapter. The primary objective of the study is to determine whether democratic institutions are a sine qua non to FD in ten SADC countries subdivided into three income groups.

Initially, the study employs robust OLS, GMM, difference GMM and system GMM estimators to establish the association between institutions and FD. In order to establish how shocks in the democratic institutional variables affect FD, the study employs BVARs. Finally, the MSM is introduced to the FD literature to determine the probability of switching between states of high FD and states of weak or low FD following political regime changes. Three measures of FD are used to arrive at our conclusions, namely the ratio of private credit to GDP, the ratio of bank deposits to GDP and liquid liabilities of banks and non-bank financial intermediaries to the GDP.

The study contributes to the growing literature on the determinants of FD; more specifically it contributes to the scarce literature on the institutional determinants of FD in SADC countries. We suggest some proximate determinants of FD in each income group of the countries under study in the SADC region.We show that the probability of staying in a regime of low FD in countries experiencing low FD is high compared to countries experiencing high FD by applying the MSM. By employing Bayesian inferences, we show how shocks in the institutional variables affect FD compared to the specific social and economic variables used in the study. The next section presents a summary of the study and empirical findings.

6.2 Summary of Empirical Findings

6.2.1 Panel regressions

Apart from the institutional variables, the study finds that school enrolment, government expenditure, FDIs, per capita income, population, inflation and black market premium are proximate determinants of FD for the countries in the three income groups under study. These findings were obtained by applying BMA. Considering all three measures of FD as the dependent variables with all measures of democratic institutions (democracy- substantive and procedural, executive constraints, autocracy and per capita income) and controls (the

proximate determinants for each income group) as explanatory variables in the panel regression models, the study supports the hypothesis that democratic institutions tend to promote FD for the upper middle income countries. This finding is consistent with the work of Andrianova, Demetriades and Shortland (2008), Huang (2010), Yang (2011), Deepraj and Nabamita (2013) who show a positive association between political institutions and FD. Exploring the possibilities of non-linearities[27], the results reveal that democratic institutions also matter for policy variables, where per capita income and government expenditure tend to increase FD with democracy. This is a reasonable conclusion because democracy tends to increase the standard of living in a country as well as financial inclusion. With a bigger government size in developing countries experiencing democracy, there is the likelihood that funds would be sufficiently and efficiently allocated to set up banks in unbanked and under-banked areas to increase access to finance. One anomaly, however, remains for the upper middle income countries, whereby substantive democracy emerges to be negatively associated with FD. This suggests that being a democracy may not guarantee higher levels of FD. A possible justification for this is that the democratic credentials of this group of countries are in order in terms of rivalry for public office but the policies in place are not effectively implemented to achieve higher levels of FD. Though this is troublesome, the results were, however, statistically insignificant.

The panel regression results for the lower middle income countries is somewhat mixed, with democratic institutions weighted more towards having a minimal impact on FD. What clearly emerges from the results is that the contribution of executive constraints is negative and significant, seemingly suggesting that elements of autocracy within the political regimes of the countries in question may be creating instability which negatively impacts on FD. Two of the lower middle income countries' political regimes (Lesotho and Swaziland) are characterised by absolute monarchies suggesting that the preferences of the monarchy are much more entrenched in relation to the preferences of the populace in making decisions. This evidence is consistent with the findings of La Porta et al. (2004). Non-linearities between democracy and FD emerge through per capita income and black market premium for this income group. This suggests that with democratisation appropriate government policies would be implemented to curb exchange market imperfections (through regulations that limit the flow of foreign exchange through the black market), thereby increasing the amount of foreign exchange intermediated by banks and hence increasing the financial sector size.

[27] Non-linearities could not be determined from the cumulative effect on the three proxies of financial development, since the control variables tend sometimes to differ depending on the measure of financial development applied when carrying out Bayesian model averaging.

The panel regression results for the low-income countries also suggest that weak democratic institutions may be exerting negative effects on FD possibly resulting from political instability. This evidence seems to corroborate with Matlosa's (2006) observations that the countries in this income group have a pervasive trend of an entrenched de jure one-party system that ensure the continued dominance of ruling parties and stifles open political competition, a perfect recipe for political instability. Again, consistent with La Porta's et al. (2004) findings, autocracy positively affects FD for this income group suggesting that the choices made by authoritarian regimes and not the constraints on them have allowed these countries to make some gains towards FD. The findings tend to contradict Huang's (2010) assertion that democratic transformation is followed by improvements in FD in the short-run to medium run for the lower middle and low-income countries and seem to support the view by Mulligan, Gil and Sala-i-Martin (2004) who contend that democracies have important effects on the degree of competition for public office, but otherwise have insignificant effects on public policies. For this income group, evidence of non-linearities between democracy and FD emerge through per capita income, trade openness and school enrolment. Though it is not obvious that democratisation necessarily leads to trade openness Tavares (2007), one may argue that a positive relationship could increase the inflow of funds intermediated by banks, e.g. through FDIs, thereby increasing FD.

Overall, evidence from the panel regression results corroborates the view in existing literature that democratic institutions tend to promote FD[28] for the upper middle income countries; having a minimal role in the lower middle income countries and seemingly the least role in the low-income countries. The reader should bear in mind that the three measures of FD produce different results for the different income groups and the analyses are based on the t(z)-statistics and probabilities of the explanatory variables of interest of all three measures of FD averaged over the different models applied. Using different estimation techniques to cater for endogeneity, model uncertainty and analyses of t-statistics and probabilities for each estimator with the three dependent variables ensures robust results. The Hansen's J –statistic is used to test the validity of over-identifying restrictions of the IV regressions. The statistic is far from the rejection of its null, giving us the confidence that our instrument set is appropriate.

6.2.2 Markov Switching Model (MSM)

Evidence from the MSM suggests that in the upper middle income countries where democratic institutions are stronger, they have on the average a greater probability to be in a

[28] This is because of institutional features such as increasing political competition and political checks and balances (Yang, 2011).

state of high FD than being in a state of low FD. The results also suggest that being in a high FD state is sustainable from the medium to long-term for the countries under this income group. On the other hand, the lower middle and low-income countries in which weaker democratic institutions prevail tend to have a greater chance of being in a state of low FD and remaining in that state for longer periods of time. The findings from the Markov Model reveal that the weaker the democratic institutions of the countries under study the greater the probability of being in a state of low FD and the longer the durationof being in such a state. We argue and show evidence in the lower middle and low-income countries that instability in financial relations could be reinforced by political instability in autocratic regimes, thereby, negatively affecting FD and vice versa – the probabilities and expected durations of being in a state of high or low FD highlight this point where less democratic regimes have a higher probability of being in a state of low FD (lower middle and low income countries) and for longer periods compared to more democratic regimes upper middle income countries). The findings also reveal that there is the possibility of hovering between states of low and high FD irrespective of the state of democracy of the income group, consistent with the financial instability hypothesis.

6.2.3 Impulse responses and variance decomposition

The impulse responses suggest that innovations to democratic institutional variables results in positive outcomes for FD for the upper middle income countries as a whole with substantive democracy proving to be the most important variable in accounting for variations in FD among the institutional variables. The effect of human capital development (school enrolment) supersedes all other variables in explaining FD for this income group. The effect of human capital development on growth in the literature is widely documented but not the case with FD. This evidence adds to the scarce literature on the effect of human capital development on FD.

The effect of shocks to all institutional variables in the lower middle income countries negatively affects FD except for autocracy having a positive effect and accounts the most for variations in FD among the institutional variables. The importance of human capital development is once again highlighted; significantly contributing the highest towards variations in FD for this income group. Evidence from innovations to institutional variables in low-income countries is shown to be negative for FD except for autocracy, which positively affects FD following shocks. Constrain on executives accounts for the highest variation in FD among both institutional and policy variables for this income group. The implications of these findings were discussed above.

6.3 Conclusion and Policy Implications

A significant policy implication from the empirical finding is that, on average, democratic institutions promote FD for the upper middle income countries where they are stronger and tend to retard FD for the lower middle and low-income countries where they are weaker. Though each country has developed a strategic framework to improve FD which more or less is running concurrently with the process of democratisation, democratic institutions in general, in the lower middle and low-income countries are still not positively associated with FD. This finding seems to be consistent with the work of Yang (2011), Mulligan et al. (2004) who find that democracies seem to increase political competition and the quest for public office but have little effect on the policies of the government. Taking the lower middle and low-income countries into consideration, autocracy seems to be having a positive effect on FD supporting La Porta et al.'s (2004) argument that the choices made by authoritarian regimes and not the constraints on them have allowed some countries to make gains towards FD. We contend that in order for these countries to take significant strides towards sustaining and improving the financial sector, developing and empowering democratic institutions is sacrosanct. For all three income groups, governments should be aware of the positive indirect channels through which democratic institutions may affect FD when it seeks to pursue other policy objectives such as increasing per capita income, government expenditure, trade openness, human capital development and black market premium.

The association between democratic institutions and FD is undeniably complex given the different measures of FD. The different measures of FD produce different results for the different income groups. In light of this, the study holds that the results are at best suggestive but overall, the evidence corroborates with the view that democratic institutions tend to promote FD for the upper middle income countries where their democratic credentials seem to be in place, having a minimal impact for the lower middle income countries and the least effect on the low-income countries where weaker democratic institutions tend to prevail. In conclusion we argue that improving democratic institutions are important requisites in promoting FD and ensuring relatively stable financial sectors.

6.4 Limitation of the Study and Areas for Further Research

First, Glaeser, La Porta, Lopez-de-Silanes (2004) contend that the institutional measures widely used in the literature are not formulated to indicatelimits on government or enduringcharacteristics of the political environment. They measure outcomes rather than institutional constraints (for instance, a country experiencing autocratic rule, where the

incumbent freely chooses good policies should not be ranked as having good institutions). Though there is still no consensus on this, an avenue for further research could be to rely on executive constraints as the institutional measure when exploring the relationship between institutions and FD in the SADC region.

Secondly, cross-country data tend to encounter measurement and comparability problems[29]. The deficiency of quality data with similarities across countries is a basic impediment for applying the results of extensive comparative studies. Ang (2008) notes that analyses on extensive comparative studies done on a composite level may not be able to effectively encapsulate the peculiarities of the financial environment and history of the countries under study and hence may not provide any credible policy direction. In view of this limitation, further studies could be executed on country specific bases where a thorough comprehension of the financial historical environment of each country is considered (Ang, 2008).

The study has mainly focused on bank-based intermediation, playing down the role institutions might have on the other constituents of the financial system, such as bond markets, stock markets, pension funds, insurance companies, etc. Though the market-based financial sector is still in its infancy in most of the countries under study, ignoring these intermediaries may lead to an underestimation of the level of FD in the region. Including the market-based proxies in the estimation could present a more 'complete' picture of FD. In essence, exploring what institutional factors shape the financial sector (including both bank-based and market-based intermediation) could serve as another avenue for research in the SADC region.

[29] We attempt to mitigate this problem by the use of Bayesian inferences – the curse of dimensionality.

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APPENDICES

Appendix A: Variables, description and data sources:

Variable	Description	Source
Per capita income (constant 2000 US$)	GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars.	World Development Indicators,2015
Private credit to GDP (%)	The share bankcredit to the private sector, defined as the credit issued to the private sector by banks and other financial intermediaries divided by the GDP (hereafter private credit), excluding the credit issued to government, government agencies, and public enterprises, as well as credit issued by the monetary authority and development banks. This captures the general financial intermediary activities provided to the private sector	World Financial Structure and Economic Development database, 2015
Bank Deposits to GDP (%)	The ratio of bank deposits to the GDP includes the total assets held by deposit money banks as a share of GDP. Assets include claims on domestic real nonfinancial sector which includes central, state and local governments, nonfinancial public enterprises and private sector. Deposit money banks comprise commercial banks and other financial institutions that accept transferable deposits, such as demand deposits.	World Financial Structure and Economic Development database, 2015
Liquid liabilities to GDP (%)	Ratio of liquid liabilities to GDP. Liquid liabilities are also known as broad money, or M3. They are the sum of currency and deposits in the central bank (M0), plus transferable deposits and electronic currency (M1), plus time and savings deposits, foreign currency transferable deposits, certificates of deposit, and securities repurchase agreements (M2), plus travellers checks, foreign currency time deposits, commercial paper, and shares of mutual funds or market funds held by residents.	World Financial Structure and Economic Development database, 2015
Enrolment ratio secondary (% gross)	This includes the gross enrolment ratio in secondary education in all programmes. Total is the total enrolment in secondary education, regardless of age, expressed as a percentage of the population of official secondary education age. Gross enrolment ratio can exceed 100% due to the inclusion of over-aged and under-aged students because of early or late school entrance and grade repetition.	World Development Indicators, 2015
Government expenditure to GDP (%)	General government final consumption expenditure (formerly general government consumption) includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditure on national defence and security, but excludes government military	World Development Indicators, 2015

	expenditures that are part of government capital formation.	
FDI to GDP (%)	FDI are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other longterm capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP.	World Development Indicators, 2015
Population, total	Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship--except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of their country of origin. The values shown are midyear estimates.	World Development Indicators, 2015
Black market premium	It is calculated as the premium in the parallel exchange market relative to the official market (i.e. the formula is (parallel exchange rate/official exchange rate-1) x100).	Global Development Network database, 2009
Trade openness (current account openness)	The trade-to-GDP-ratio is the sum of exports and imports divided by GDP. This indicator measures a country's 'openness' or 'integration' in the world economy. It represents the combined weight of total trade in its economy, a measure of the degree of dependence of domestic producers on foreign markets and their trade orientation (for exports) and the degree of reliance of domestic demand on foreign supply of goods and services (for imports).	Penn World Table 7.1, 2015
Polity IV index (procedural democracy)	Index of democracy. It is called the "combined polity score", equal to the democracy score minus the authority score. The democracy and authority scores are derived from six authority characteristics (regulation, competitiveness and openness to executive recruitment, operational independence of chief executive or executive constraints, regulation and competition of participation). Based on these criteria each country is assigned a democracy and autocracy score that ranges from 0 to 10. Accordingly, polity 2 ranges from -10 to 10 with higher values representing more democratic regimes.	Polity IV Database (Marshall, Jaggers and Gurr, 2015)
S Polity IV (substantive democracy)	This variable is drawn from the Polity IV index. We use dummies to compute a series of substantive democracy in each country. Where the score is greater than or equal to six we allocate the value of 1 otherwise 0 from 1975 to 2010 for each country under study across the different income groups.	Author's own determination.
Inflation	Consumer prices, annual percentage.	World Development Indicators, 2015

Appendix B: Diagnostic test results, Augmented Dickey-Fuller test for stationarity: Individual variables

B1: Upper middle income countries

Variables	t-Statistic	Probability*
Bank deposits	-13.3023	0.0000
Autocracy	-11.8321	0.0000
Black market premium	-10.0676	0.0000
Polity IV	-11.7898	0.0000
FDI	-13.8939	0.0000
Government expenditure	-9.5099	0.0000
Inflation	-10.8763	0.0000
Liquid liabilities	-6.8072	0.0000
Per capita income	-15.6875	0.0000
S Polity IV	-11.8311	0.0000
Population	-10.4212	0.0000
Private credit	-18.4169	0.0000
School enrolment	-12.9545	0.0000
Trade openness	-14.7626	0.0000
Constraint on executive	-11.8321	0.0000

*MacKinnon (1996) one sided p-values at 5% level of significance.

B2: Lower middle income countries

Variables	t-Statistic	Probability*
Bank deposits	-11.2927	0.0000
Autocracy	-10.2007	0.0000
Black market premium	-11.5662	0.0000
Polity IV	-10.1700	0.0000
FDI	-4.1310	0.0013
Government expenditure	-3.0031	0.0379
Inflation	-9.1565	0.0000
Liquid liabilities	-15.6042	0.0000
Per capita income	-10.3929	0.0000
S Polity IV	-9.3247	0.0000
Population	-8.0714	0.0000
Private credit	-2.8769	0.0500
School enrolment	-11.7327	0.0000
Trade openness	-10.5635	0.0000
Constraint on executive	-11.5662	0.0000

*MacKinnon (1996) one sided p-values at 5% level of significance.

B3: Low-income countries

Variables	t-Statistic	Probability*
Bank deposits	-9.8655	0.0000
Autocracy	-9.9650	0.0000
Black market premium	-4.1729	0.0012
Polity IV	-12.2200	0.0000
FDI	-4.7739	0.0001
Government expenditure	-12.6064	0.0000
Inflation	-5.3630	0.0000
Liquid liabilities	-15.6042	0.0000
Per capita income	-11.0529	0.0000
S Polity IV	-10.7456	0.0000
Population	-6.7888	0.0000
Private credit	-2.8769	0.0500
School enrolment	-10.9162	0.0000
Trade openness	-11.0440	0.0000
Constraint on executive	-3.5980	0.0000

*MacKinnon (1996) one sided p-values at 5% level of significance.

Appendix C: Heteroskedasticity tests

C1: Upper middle income

Bank deposits

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	20.15582	Prob. F(12,131)	0.0000
Obs*R-squared	93.40862	Prob. Chi-Square(12)	0.0000
Scaled explained SS	382.3364	Prob. Chi-Square(12)	0.0000

All three statistics reject the null hypothesis of homoskedasticity.

Liquid liabilities

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	3.377826	Prob. F(9,134)	0.0009
Obs*R-squared	26.62805	Prob. Chi-Square(9)	0.0016
Scaled explained SS	70.19836	Prob. Chi-Square(9)	0.0000

All three statistics reject the null hypothesis of homoskedasticity.

Private credit

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.411616	Prob. F(11,132)	0.1747
Obs*R-squared	15.15647	Prob. Chi-Square(11)	0.1754
Scaled explained SS	34.62199	Prob. Chi-Square(11)	0.0003

The first two statistics does reject the null hypothesis of homoscedasticity while the third does reject H_0

C2: Lower middle income

Bank deposits

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.145231	Prob. F(8,97)	0.3405
Obs*R-squared	9.147879	Prob. Chi-Square(8)	0.3300
Scaled explained SS	10.43658	Prob. Chi-Square(8)	0.2357

All three statistics does not reject the null hypothesis of homoskedasticity.

Liquid liabilities

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.924662	Prob. F(9,96)	0.0042
Obs*R-squared	22.80970	Prob. Chi-Square(9)	0.0066
Scaled explained SS	38.54359	Prob. Chi-Square(9)	0.0000

All three statistics does reject the null hypothesis of homoskedasticity.

Private credit

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.142120	Prob. F(9,96)	0.3413
Obs*R-squared	10.25209	Prob. Chi-Square(9)	0.3305
Scaled explained SS	16.70513	Prob. Chi-Square(9)	0.0535

All three statistics does not reject the null hypothesis of homoskedasticity.

C3: Low-income

Bank deposits

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.830441	Prob. F(9,96)	0.0054
Obs*R-squared	22.22897	Prob. Chi-Square(9)	0.0082
Scaled explained SS	254.2020	Prob. Chi-Square(9)	0.0000

All three statistics does reject the null hypothesis of homoskedasticity.

Liquid liabilities

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	4.841057	Prob. F(9,96)	0.0000
Obs*R-squared	33.09009	Prob. Chi-Square(9)	0.0001
Scaled explained SS	221.0423	Prob. Chi-Square(9)	0.0000

All three statistics reject the null hypothesis of homoskedasticity.

Private credit

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.607641	Prob. F(12,93)	0.8308
Obs*R-squared	7.706718	Prob. Chi-Square(12)	0.8076
Scaled explained SS	105.6121	Prob. Chi-Square(12)	0.0000

The first two statistics reject the null hypothesis of homoscedasticity while the third does reject H_0

Appendix D: Autocorrelation tests

D1: Upper middle income

Bank deposits

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.615896	Prob. F(2,128)	0.2027
Obs*R-squared	3.521603	Prob. Chi-Square(2)	0.1719

The test does not reject the hypothesis of no serial correlation up to order two

Liquid liabilities

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.407036	Prob. F(2,132)	0.6665
Obs*R-squared	0.882635	Prob. Chi-Square(2)	0.6432

The test does not reject the hypothesis of no serial correlation up to order two

Private credit

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.343957	Prob. F(2,130)	0.7096
Obs*R-squared	0.757985	Prob. Chi-Square(2)	0.6846

The test does not reject the hypothesis of no serial correlation up to order two

D2: Lower middle income

Bank deposits

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.231670	Prob. F(2,94)	0.7937
Obs*R-squared	0.519928	Prob. Chi-Square(2)	0.7711

The test does not reject the hypothesis of no serial correlation up to order two

Liquid liabilities

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.254621	Prob. F(2,94)	0.2899
Obs*R-squared	2.756002	Prob. Chi-Square(2)	0.2521

The test does not reject the hypothesis of no serial correlation up to order two

Private credit

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.681124	Prob. F(2,94)	0.1917
Obs*R-squared	3.660538	Prob. Chi-Square(2)	0.1604

The test does not reject the hypothesis of no serial correlation up to order two

D3: Low-income

Bank deposits

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.865459	Prob. F(3,93)	0.1408
Obs*R-squared	6.016610	Prob. Chi-Square(3)	0.1108

The test does not reject the hypothesis of no serial correlation up to order three

Liquid liabilities

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.338100	Prob. F(2,94)	0.7140
Obs*R-squared	0.757077	Prob. Chi-Square(2)	0.6849

The test does not reject the hypothesis of no serial correlation up to order three

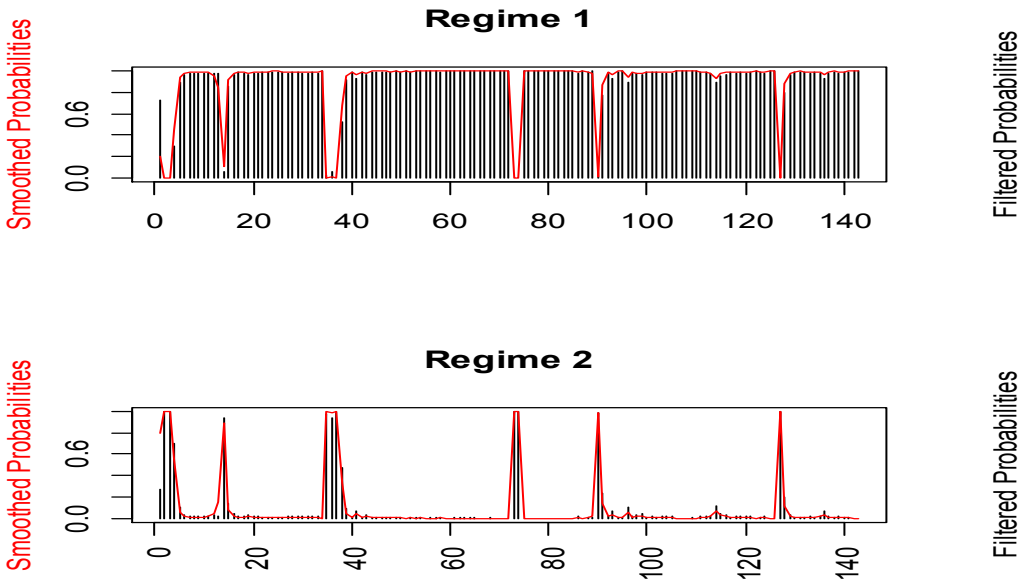
Private credit

Breusch-Godfrey Serial Correlation LM Test:

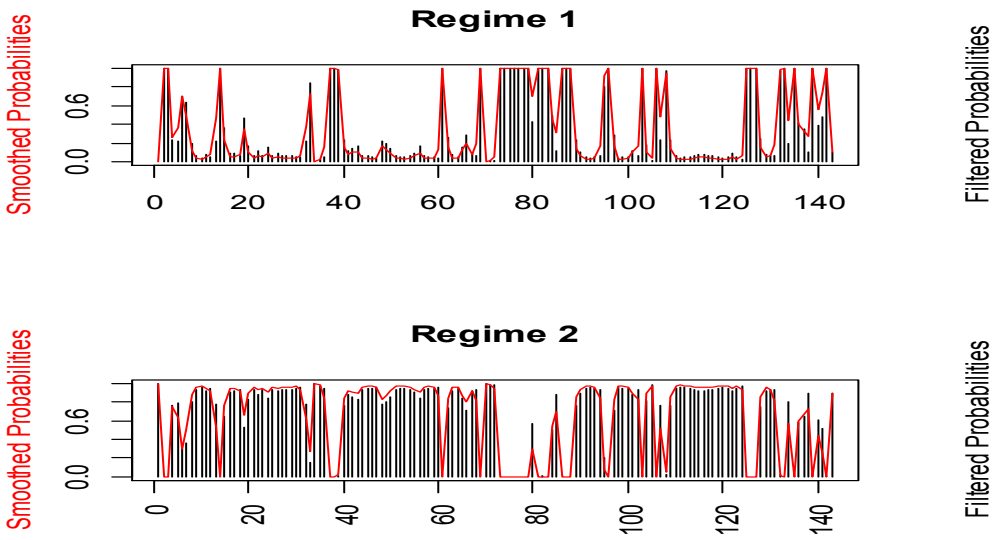
F-statistic	0.405757	Prob. F(2,91)	0.6677
Obs*R-squared	0.936925	Prob. Chi-Square(2)	0.6260

Appendix E: Filtered and smoothed regime probabilities:

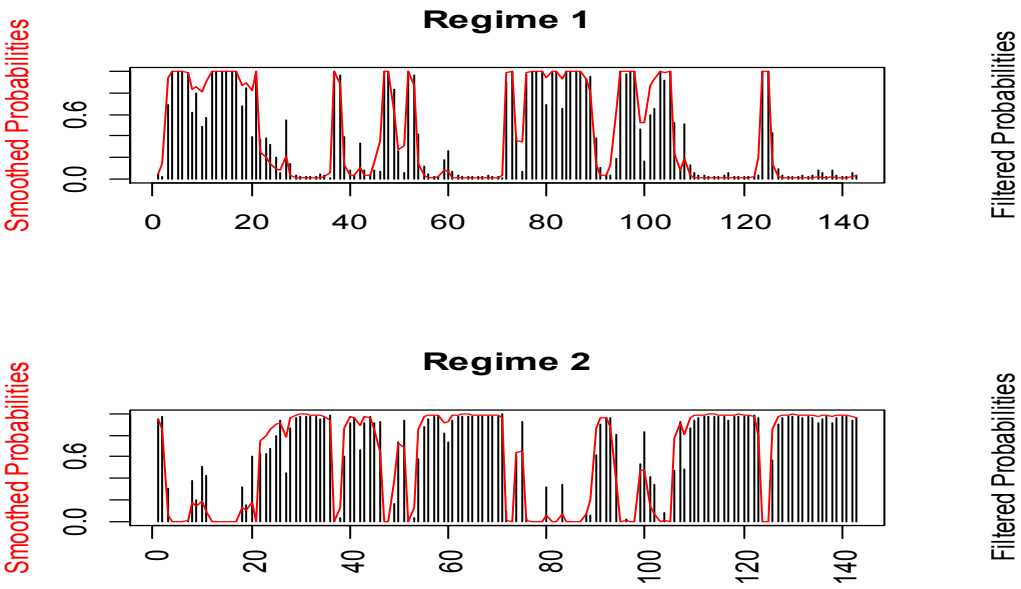
E1: Upper middle income
Bank deposits as dependent variable:



Private credit as dependent variable:

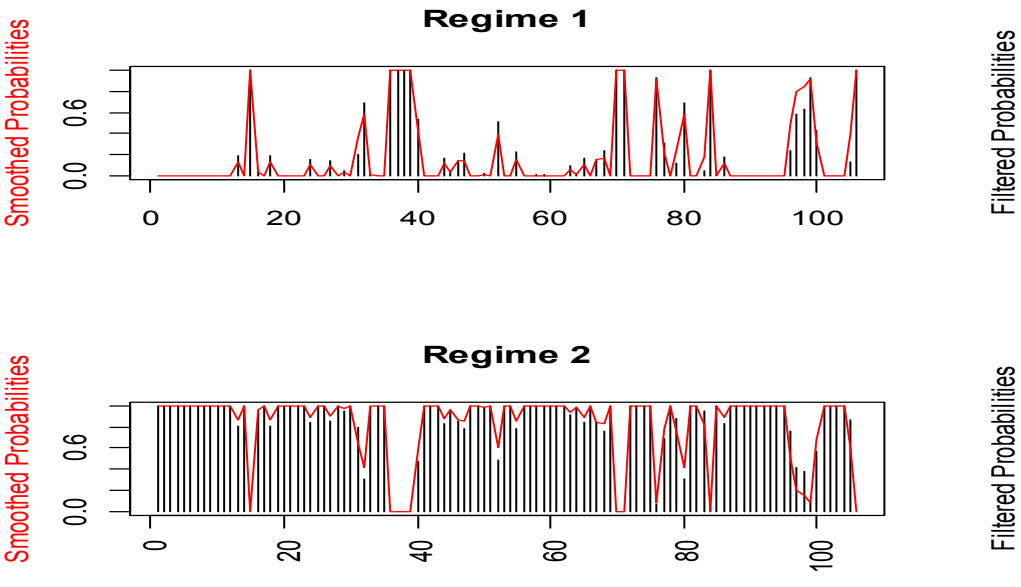


Liquid liabilities as dependent variable:

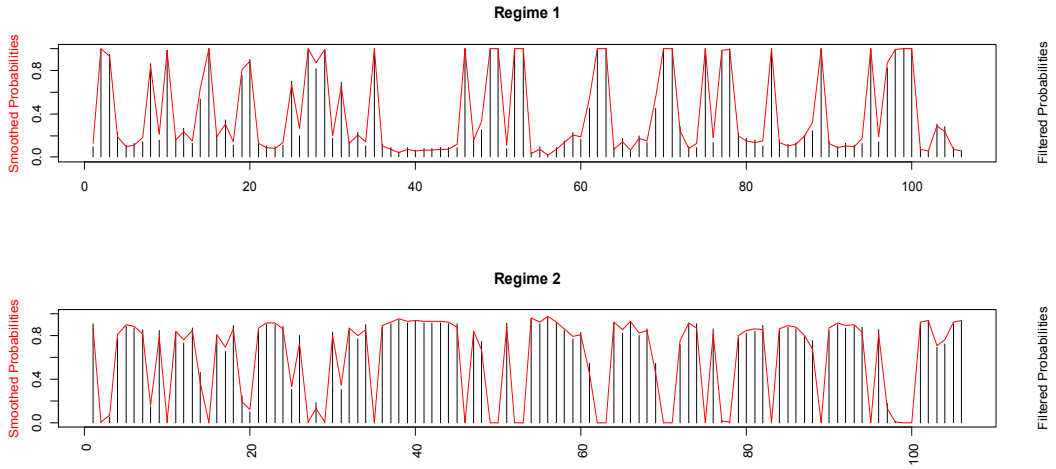


E2: Lower middle income

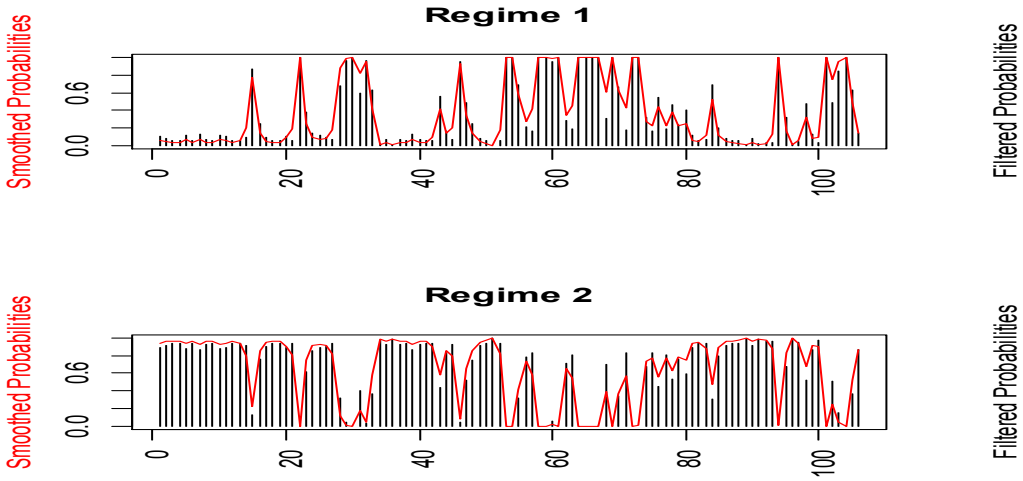
Bank deposits as dependent variable:



Private credit as dependent variable:

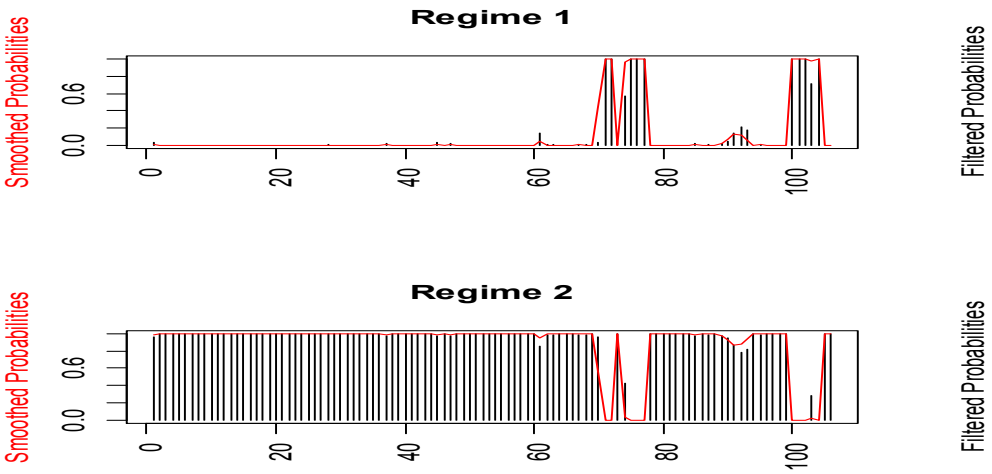


Liquid liabilities as dependent variable:

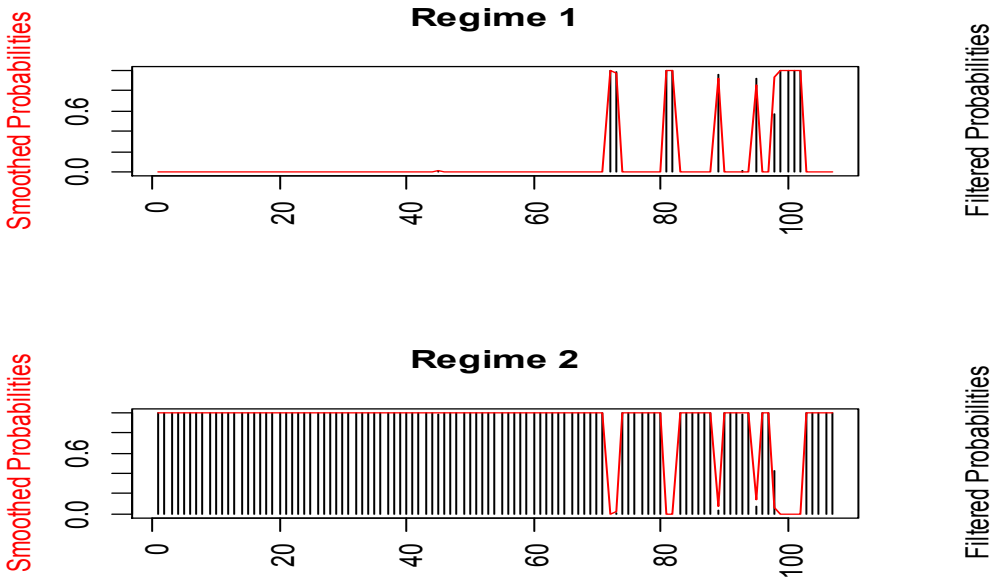


E3: Low-income

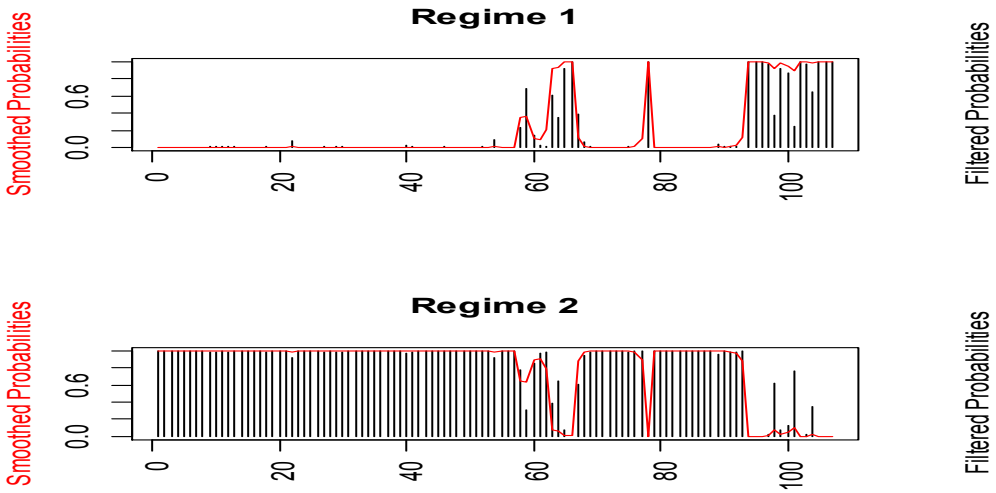
Bank deposits as dependent variable:



Private credit as dependent variable:



Liquid liabilities as dependent variable:



Appendix F: Panel regressions: Democracy and financial development: Cross-section results: (1990-2013)

F1: Upper middle income countries: 1990-2013
OLS, GMM, Difference and system GMM fixed effect estimation

Dependent variable – Bank deposits

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	0.15 (0.36)	0.11(0.31)	0.38*(0.09)	0.40***(0.00)
Executive constraint	0.24*(0.03)	0.23***(0.00)	-0.11(0.21)	0.18*(0.10)
S Polity IV	-0.25***(0.00)	-0.25***(0.00)	-0.28***(0.00)	-0.25***(0.00)
Polity IV	0.20***(0.00)	0.18*(0.00)	0.21***(0.00)	0.30***(0.00)
Government expenditure	0.46(0.41)	0.76(0.12)	1.13***(0.00)	1.01(0.28)
Population	0.06(0.89)	0.02(0.94)	0.42*(0.10)	0.68(0.51)
School	-0.98(0.12)	-1.43**(0.02)	-0.64(0.17)	-1.99*(0.09)
Lag bank deposits	-0.01(0.91)	0.04(0.48)	0.14*(0.09)	0.17*(0.11)
Per capita income	-0.62(0.79)	0.86(0.70)	-0.90(0.23)	-4.24(0.15)
Polity IV*Government	-0.69(0.35)	-1.04*(0.10)	-1.47***(0.00)	-1.34(0.25)
Polity IV*school	1.14*(0.10)	1.64**(0.01)	0.63(0.26)	-1.99*(0.09)
Polity IV*per capita income	-0.02(0.99)	-1.3(0.59)	-0.32(0.76)	2.44*(0.40)
Polity IV*population	0.14(0.83)	0.21(0.69)	-0.63(0.17)	0.15(0.92)
Constant	-0.005(0.85)	0.08**(0.04)	0.001(0.88)	0.002(0.69)
Hansen's J statistic		2.96(0.23)	6.09(0.09)	0.04(0.84)
Country dummy	Yes	Yes	Yes	Yes
Observations	92	92	92	92
Number of countries	4	4	4	4
R-squared	0.45	0.42	0.91	0.35

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

OLS, GMM, DGMM and system GMM fixed effect estimation

Dependent variable – Private credit

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	-0.09(0.36)	-0.30***(0.00)	0.45***(0.00))	0.12**(0.65)
Executive constraint	-0.33***(0.00)	-0.30***(0.00)	0.08(0.56)	-0.24*(0.07)
polity IV	-0.21***(0.00)	-0.19***(0.00)	-0.30***(0.00)	-0.20*(0.06)
S Polity IV	0.21***(0.00)	0.21***(0.00)	-0.04(0.22)	0.22***(0.00)
Government expenditure	0.04**(0.77)	0.02(0.78)	-0.40(0.40)	-0.02*(0.18)
Population	0.30**(0.02)	0.29***(0.00)	-0.21*(0.06)	-0.001(0.98)
Lag private credit	-0.10(0.36)	0.05(0.68)	-0.56***(0.00)	-0.46***(0.00)
Per capita income	-3.77**(0.04)	-3.25(0.23)	1.34(0.41)	-9.67(0.22)
Polity IV*Government	-0.08(0.67)	-0.06(0.49)	0.48(0.41)	-8.59(0.26)
Polity IV*population	-0.35**(0.02)	-0.33***(0.00)	-0.41***(0.00)	-3.55(0.04)
Constant	-0.03(0.35)	-0.04(0.36)	0.0003(0.26)	0.05(0.73)
Hansen's J statistic		3.32(0.16)	5.08(0.12)	1.73(0.42)
Country dummy	Yes	Yes	Yes	Yes
Observations	92	92	92	92
Number of countries	4	4	4	4
R-squared	0.47	0.46	0.62	0.21

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

OLS, GMM, DGMM and system GMM fixed effect estimation

Dependent variable – Liquid liabilities

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	-0.79**(0.00)	-0.70***(0.00)	-0.71***(0.00)	-0.83(0.25)
Executive constraints	0.54***(0.00)	0.49***(0.00)	0.31***(0.00)	0.56**(0.02)
polity IV	0.02*(0.82)	-0.01(0.84)	0.14***(0.00)	0.38*(0.06)
S Polity IV	-0.42***(0.00)	-0.40***(0.00)	-0.27***(0.00)	-0.24(0.12)
Lag liquid liabilities	0.44***(0.00)	0.59***(0.00)	0.13(0.30)	-0.15**(0.01)
Per capita income	9.61*(0.01)	7.33***(0.27)	2.71***(0.09)	-5.05*(0.04)
Polity IV*Per capita income	-9.92*(0.05)	-7.24***(0.38)	-2.81*(0.14)	8.04***(0.00)
Constant	0.50***(0.00)	0.52***(0.00)	0.001(0.84)	-0.02*(0.09)
Hansen's J statistic		6.49(0.07)	5.74(0.17)	0.06(0.80)
Country dummy	Yes	Yes	Yes	Yes
Observations	92	92	92	92
Number of countries	4	4	4	4
R-squared	0.52	0.51	0.89	0.29

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

F2: Lower middle income countries: 1990 – 2013.
OLS, GMM, DGMM and system GMM fixed effect estimation

Dependent variable – Bank deposits

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	0.05(0.19)	0.05(0.46)	-0.001***(0.99)	-0.09(0.14)
Executive constraints	0.02(0.84)	0.01(0.93)	-0.23**(0.04)	-0.16(0.18)
S Polity IV	0.01(0.48)	0.01(0.61)	-0.0001(0.99)	0.05(0.21)
Polity IV	-0.01(0.61)	-0.01(0.50)	0.01(0.65)	0.06**(0.03)
Lag bank deposits	0.17(0.20)	0.16(0.18)	-0.33***(0.00)	-0.43***(0.00)
Per capita income	-0.71(0.14)	-0.70(0.18)	-0.93***(0.00)	-1.60**(0.01)
Polity IV*per capita income	3.86(0.15)	4.00**(0.03)	3.24***(0.00)	3.56***(0.00)
Constant	-0.01(0.66)	0.01(0.11)	0.001(0.64)	-0.05(0.59)
Hansen's J statistic		0.20(0.65)	3.41(0.17)	6.28(0.06)
Country dummy	Yes	Yes	Yes	Yes
Observations	69	69	69	69
Number of countries	3	3	3	3
R-squared	16	0.15	0.41	0.01

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

OLS, GMM, DGMM and system GMM fixed effect estimation

Dependent variable – Private credit

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	-0.14***(0.00)	-0.13(0.87)	-0.02(0.63)	-0.24*(0.09)
Executive constraints	-0.23(0.14)	-1.20(0.28)	-0.07(0.66)	-0.46*(0.06)
polity IV	0.02(0.83)	0.01(0.98)	2.89**(0.03)	0.11(0.21)
S Polity IV	-0.02(0.28)	-0.04(0.81)	-0.01(0.90)	0.01(0.74)
FDI (fdi)	0.93***(0.00)	1.27(0.54)	0.47(0.31)	0.51(0.38)
School enrolment	0.67***(0.00)	0.88**(0.01)	0.43**(0.01)	0.90***(0.00)
Lag private credit	0.79***(0.00)	1.03***(0.00)	0.53***(0.00)	1.04***(0.00)
Per capita income	-0.44(0.48)	-0.09(0.42)	0.47(0.31)	-0.17(0.82)
Polity IV*fdi	1.32(0.61)	-0.47(0.74)	-0.28(0.2)	-2.55(0.89)
Polity IV x School enrolment	3.21(0.34)	-1.08(0.33)	-0.31*(0.11)	0.28(0.97)
Constant	-0.26***(0.00)	-0.17***(0.00)	-0.001(0.62)	-0.43(0.62)
Hansen's J statistic		0.98(0.60)	7.36(0.04)	6.29(0.09)
Country dummy	Yes	Yes	Yes	Yes
Observations	69	69	69	69
Number of countries	4	4	4	4
R-squared	0.92	0.77	0.97	0.87

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

OLS, GMM, DGMM and system GMM fixed effect estimation

Dependent variable – Liquid liabilities

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	-0.01(0.94)	-0.03(0.73)	-0.03(0.75)	0.04(0.77)
Executive constraints	-0.53(0.15)	-0.12(0.66)	-0.30(0.34)	-0.30(0.43)
polity IV	-0.18(0.65)	-0.28*(0.12)	0.11*(0.11)	0.15(0.15)
S Polity IV	-0.06(0.28)	-0.14(0.60)	-0.02(0.81)	-0.03(0.73)
Lag liquid liabilities	-0.48***(0.00)	-0.32**(0.03)	-0.63***(0.00)	-0.83***(0.00)
Per capita income	-1.57(0.25)	-0.61(0.73)	-3.64(0.13)	-6.29**(0.04)
Population	0.06(0.75)	0.06(0.64)	-0.05(0.75)	-0.004(0.98)
Polity IV x Population	-48.44(0.35)	-37.78**(0.22)	2.87(0.17)	-5.52(0.18)
Polity IV*Per capita income	-1.44(0.88)	-4.70(0.47)	-7.80(0.20)	-10.19*(0.06)
Constant	0.01*(0.42)	0.02*(0.08)	0.0002(0.94)	-0.01(0.64)
Hansen's J statistic		6.87(0.08)	6.45(0.09)	6.12(0.06)
Country dummy	Yes	Yes	Yes	Yes
Observations	69	69	69	69
Number of countries	4	4	4	4
R-squared	0.34	0.29	0.60	0.54

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

F3: Low-income countries: 1990-2013
OLS, GMM, DGMM and system GMM fixed effect estimation

Dependent variable – Bank deposits

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	0.06(0.67)	-0.02(0.83)	-0.01(0.74)	0.04(0.79)
Executive constraints	0.30(0.25)	-0.26*(0.08)	-0.38*(0.06)	-0.19(0.29)
S Polity IV	-0.11(0.42)	0.17**(0.03)	0.13*(0.09)	0.04(0.55)
Polity IV	-1.05(0.54)	-0.55(0.51)	0.003(0.98)	-0.05(0.38)
Lag bank deposits	0.40***(0.00)	0.44***(0.00)	-0.18(0.23)	-0.05(0.64)
Per capita income	-2.59***(0.00)	-1.29(0.29)	-1.28***(0.00)	-2.31(0.39)
Inflation	22.9***(0.00)	2.5(0.60)	5.69(0.63)	8.79(0.15)
FDI	-0.31(0.93)	3.01(0.27)	2.75***(0.00)	5.15(0.42)
Polity IV x FDI	20.7(0.78)	13.3(0.64)	8.45*(0.10)	-156.52(0.64)
Polity IV x Inflation	75.9(0.56)	41.3(0.47)	10.3*(0.17)	-385.83(0.63)
Polity IV x per capita income	2.49(0.86)	1.29(0.87)	0.14(0.91)	-5.12(0.92)
Constant	-0.40***(0.00)	-0.05(0.71)	0.003*(0.17)	-0.002(0.97)
Hansen's J statistic		2.72(0.25)	3.36(0.18)	2.68(0.26)
Country dummy	Yes	Yes	Yes	Yes
Observations	69	69	69	69
Number of countries	3	3	3	3
R-squared	0.48	0.36	0.07	0.19

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

OLS, GMM, DGMM and system GMM fixed effect estimation

Dependent variable – Private credit

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	0.13(0.48)	0.10(0.44)	0.11***(0.00)	0.23*(0.10)
Executive constraints	-0.21(0.55)	0.02(0.91)	-0.02(0.76)	0.03(0.87)
polity IV	-2.48(0.62)	0.07(0.72)	-0.09(0.28)	2.06(0.45)
S Polity IV	0.16(0.43)	0.03(0.75)	0.03(0.17)	-0.02(0.88)
Government expenditure	0.12(0.37)	-0.05(0.58)	-0.05***(0.00)	-0.01(0.93)
Inflation	-11.51(0.14)	-0.55(0.89)	-0.61(0.31)	0.54(0.91)
Per capita income	-2.41**(0.01)	-1.14(0.20)	-1.12***(0.00)	-1.12(0.22)
School enrolment	-0.07(0.81)	0.04***(0.80)	0.03(0.38)	-0.18(0.59)
Trade openness	16.43(0.58)	11.60(0.55)	11.70***(0.00)	17.28(0.53)
Lag private credit	0.13(0.36)	0.25*(0.08)	0.25***(0.00)	-0.58**(0.04)
Polity IV x Government	9.81(0.69)	4.82(0.39)	-0.14(0.85)	34.78(0.41)
Polity IV x Inflation	191.84(0.58)	59.6(0.45)	-310.8***(0.00)	-992.14(0.17)
Polity IV x Per capita income	34.11(0.32)	14.5(0.21)	1.60(0.53)	-7.29(0.83)
Polity IV x trade openness	1123.45(0.83)	1107**(0.02)	153.76(0.32)	6714.29(0.39)
Polity IV x school enrolment	3.48(0.89)	5.04*(0.09)	-0.05(0.93)	-18.16(0.23)
Constant	-0.17(0.18)	-0.13*(0.09)	0.008(0.55)	37.95(0.40)
Hansen's J statistic		2.36(0.30)	5.07(0.10)	1.73(0.42)
Country dummy	Yes	Yes	Yes	Yes
Observations	69	69	69	69
Number of countries	3	3	3	3
R-squared	0.33	0.25	0.99	0.18

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

OLS, GMM, DGMM and system GMM fixed effect estimation

Dependent variable – Liquid liabilities

Explanatory variables	OLS	GMM	DGMM	SGMM
Autocracy	-0.29(0.37)	-0.23(0.12)	-0.10(0.49)	-0.36(0.30)
Executive constraints	0.09(0.84)	0.10(0.43)	0.39(0.38)	0.38(0.52)
polity IV	0.43(0.49)	0.38**(0.02)	0.18**(0.05)	-0.08(0.54)
S Polity IV	-0.05(0.49)	-0.06(0.54)	-0.10(0.56)	-0.15(0.41)
Per capita income	-0.29(0.68)	-0.20(0.48)	0.04(0.81)	-0.52(0.63)
Government expenditure	-1.45***(0.00)	-1.16***(0.00)	-0.06(0.33)	-0.24(0.63)
School enrolment	0.35(0.54)	0.03(0.94)	0.005(0.93)	0.19(0.79)
Lag liquid liabilities	-0.23**(0.02)	-0.13(0.12)	-0.35**(0.01)	-0.86***(0.00)
Polity IV x school enrolment	5.11(0.42)	5.04***(0.00)	4.59**(0.02)	3.94(0.01)
Constant	0.001(0.99)	0.01(0.85)	0.003(0.83)	-0.01(0.82)
Hansen's J statistic		5.79(0.06)	3.40(0.18)	2.95(0.22)
Country dummy	Yes	Yes	Yes	Yes
Observations	69	69	69	69
Number of countries	3	3	3	3
R-squared	0.52	0.44	0.44	0.56

Notes: P-values are reported in parenthesis. * denote significance at 10%, ** denote significance at 5%, and *** denote significance at 1%. Robust standard errors are used in all regressions. Country dummy included but not reported.

Appendix G: Analyses of t (z)- statistics and P-values in all regressions: (1990-2013)

G1: Upper middle income countries

Explanatory variables of interest/dependent variables	(+) significant	(+) insignificant	(-) significant	(-) insignificant
Autocracy				
Bank deposits	2	2	0	0
Private credit	2	0	1	1
Liquid liabilities	0	0	3	1
Constraint on executives				
Bank deposits	3	1	0	0
Private credit	0	1	3	0
Liquid liabilities	4	0	0	0
Democracy (procedural)				
Bank deposits	4	0	0	0
Private credit	0	0	4	0
Liquid liabilities	3	0	0	1
Democracy (substantive)				
Bank deposits	0	0	4	0
Private credit	3	0	0	1
Liquid liabilities	0	0	3	1
Per capita income				
Bank deposits	0	0	1	3
Private credit	0	1	2	1
Liquid liabilities	3	0	1	0

Notes: Bank deposits, private credit and liquid liabilities are the dependent variables. All control variables are determined by BMA. The values in the table indicate the sign and significance of the explanatory variable of interest in all regressions. The analyses are based on tables [(iii)a, (iii)b and (iii)c above)

G2: Lower middle income countries
Analyses of t(z)- statistics and P-values in all regressions:

Explanatory variables of interest/dependent variables	(+) significant	(+) insignificant	(-) significant	(-) insignificant
Autocracy				
Bank deposits	0	2	1	1
Private credit	0	1	0	3
Liquid liabilities	0	0	0	4
Constraint on executives				
Bank deposits	0	2	1	1
Private credit	0	0	1	3
Liquid liabilities	0	0	0	4
Democracy (procedural)				
Bank deposits	1	1	0	2
Private credit	1	3	0	0
Liquid liabilities	1	1	1	1
Democracy (substantive)				
Bank deposits	0	2	1	1
Private credit	0	1	0	3
Liquid liabilities	0	0	0	4
Per capita income				
Bank deposits	0	0	2	2
Private credit	0	0	1	3
Liquid liabilities	0	0	1	3

Notes: Bank deposits, private credit and liquid liabilities are the dependent variables. All control variables are determined by BMA. The values in the table indicate the sign and significance of the explanatory variable of interest in all regressions. The analyses are based on tables [(iii)a, (iii)b and (iii)c above)

G3: Low-income countries
Analyses of t(z)- statistics and P-values in all regressions:

Explanatory variables of interest/dependent variables	(+) significant	(+) insignificant	(-) significant	(-) insignificant
Autocracy				
Bank deposits	0	2	0	2
Private credit	2	2	0	0
Liquid liabilities	0	0	0	4
Constraint on executives				
Bank deposits	0	1	2	1
Private credit	0	2	0	2
Liquid liabilities	0	4	0	0
Democracy (procedural)				
Bank deposits	0	1	0	3
Private credit	0	2	1	1
Liquid liabilities	2	1	0	1
Democracy (substantive)				
Bank deposits	2	1	0	1
Private credit	0	3	0	1
Liquid liabilities	0	0	0	4
Per capita income				
Bank deposits	0	0	2	2
Private credit	0	0	2	2
Liquid liabilities	0	1	0	3

Notes: Bank deposits, private credit and liquid liabilities are the dependent variables. All control variables are determined by BMA. The values in the table indicate the sign and significance of the explanatory variable of interest in all regressions. The analyses are based on tables 5.18a, 5.18b and 5.18c above.

Appendix H: Comparative analysis

Results from OLS, GMM, DGMM and System GMM: 1975-2013

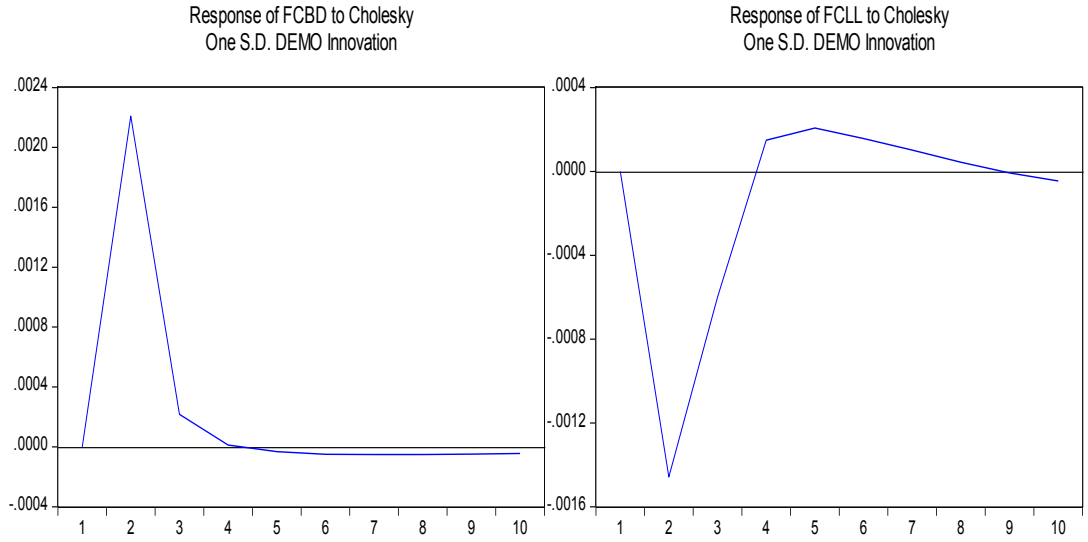
Upper middle income	Lower middle income	Low-income
Autocracy - negative and insignificant – consistent with hypothesis. Constraints on executives – positive and significant – consistent with hypothesis Polity IV (procedural democracy) – positive and significant – consistent with hypothesis S Polity IV (substantive democracy) – negative and insignificant PKY – negative and significant	Autocracy: negative and insignificant/significant Constraint on executives; negative but significant Democracy (procedural): positive and insignificant Democracy (substantive) negative and insignificant Per capita income: positive and significant	Autocracy: positive significant Constraint on executives; positive and significant Democracy (procedural): negative and insignificant Democracy (substantive) negative and insignificant Per capita income: negative and insignificant

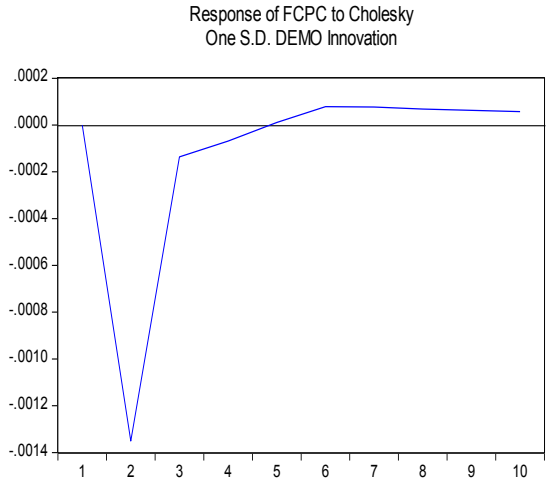
Results from OLS, GMM, DGMM and System GMM: 1990-2013

Upper middle income	Lower middle income	Low-income
Autocracy - negative and significant	Autocracy: negative and insignificant	Autocracy: negative and insignificant
Constraints on executives – positive and significant	Constraint on executives; negative insignificant	Constraint on executives; positive and insignificant
Democracy (procedural) – positive and significant	Democracy (procedural): positive and insignificant	Democracy (procedural): negative and insignificant
democracy (substantive) – negative and significant	Democracy (substantive) negative and insignificant	Democracy (substantive) negative and insignificant
Per capita income – negative and insignificant	Per capita income: negative insignificant.	Per capita income: negative and insignificant

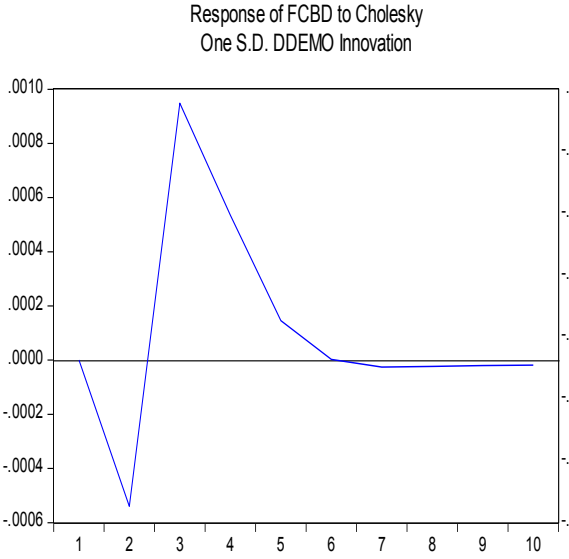
Appendix I: BVAR, Impulse responses: (1990-2013)

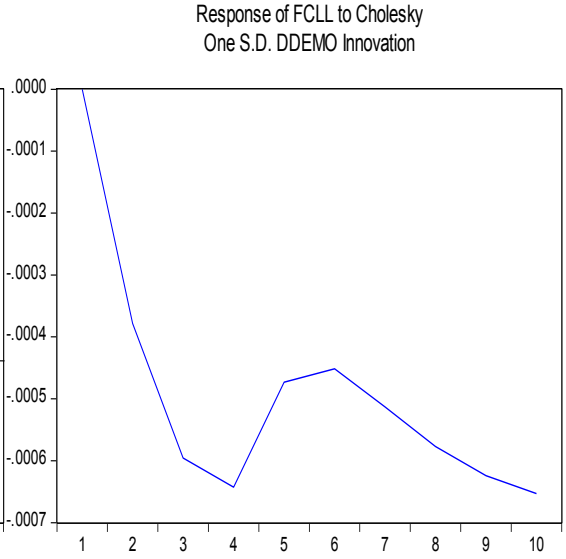
I1: upper middle income
Democracy (procedural)

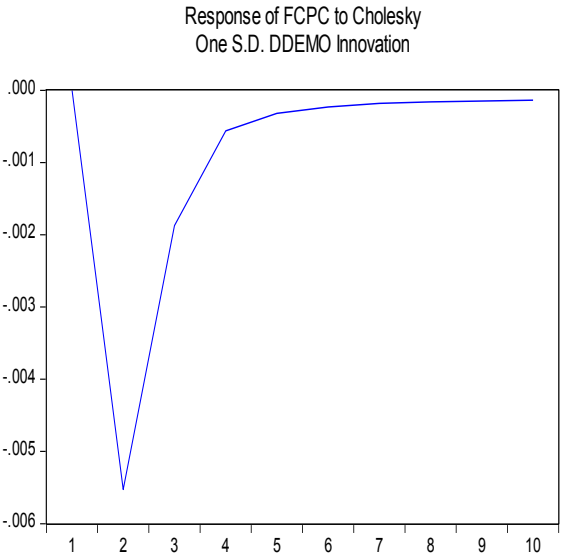




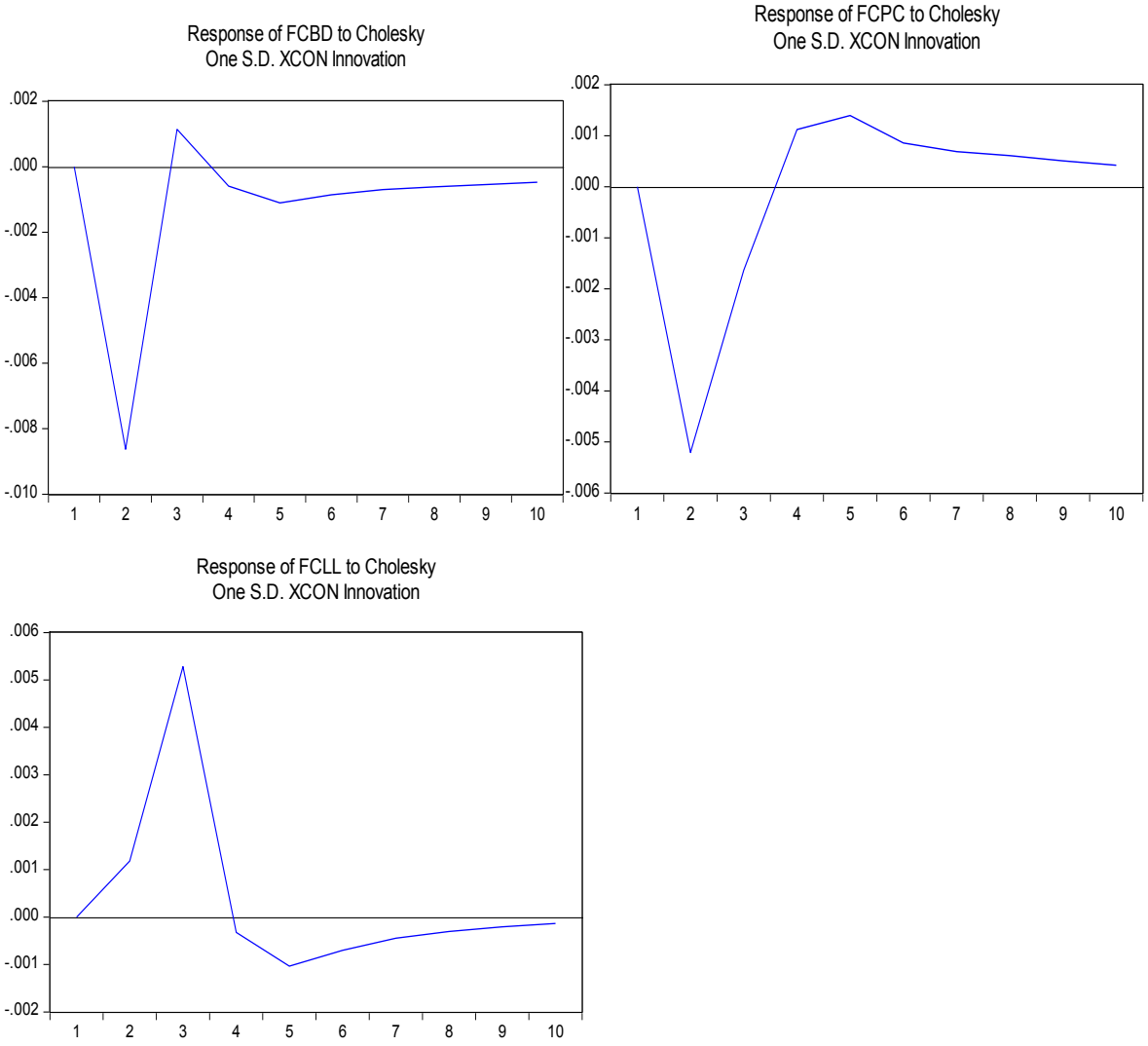
Democracy (substantive)



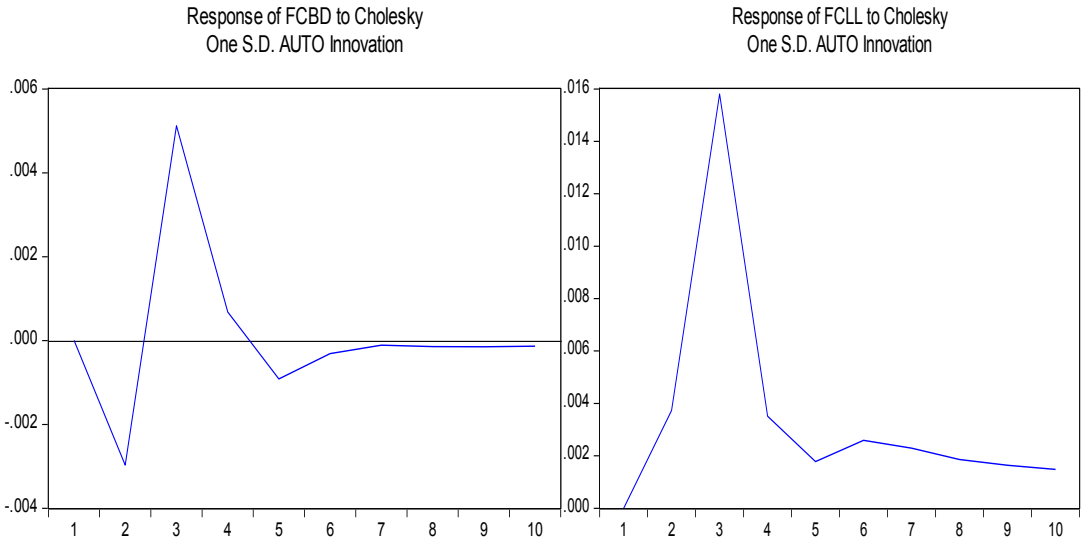




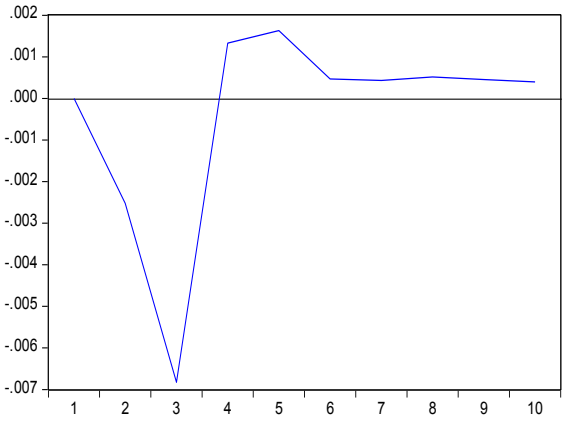
Executive constraints



Autocracy

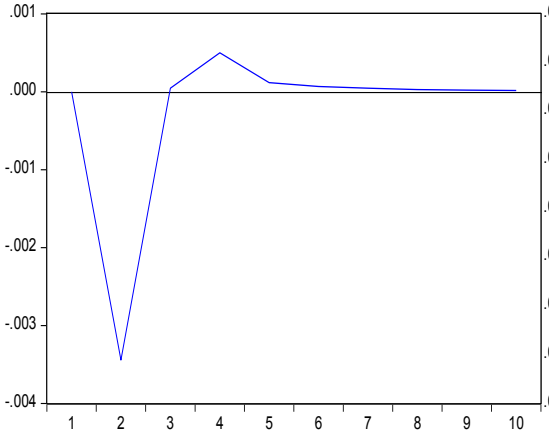


Response of FCPC to Cholesky
One S.D. AUTO Innovation

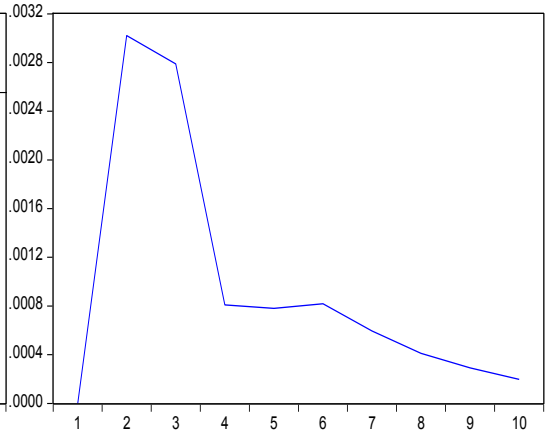


Per capita income

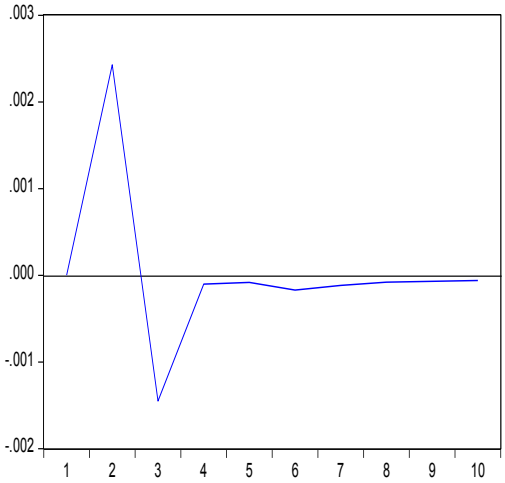
Response of FCBD to Cholesky
One S.D. PKY Innovation



Response of FCLL to Cholesky
One S.D. PKY Innovation

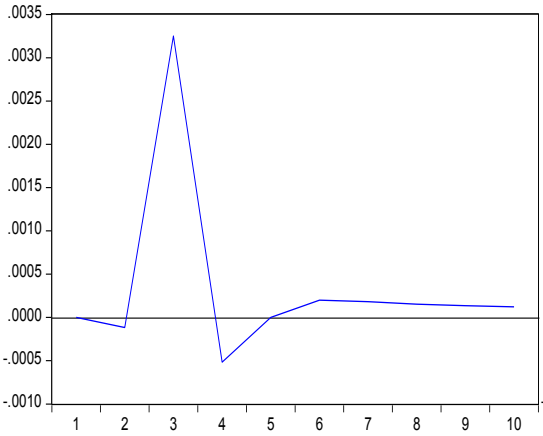


Response of FCPC to Cholesky
One S.D. PKY Innovation

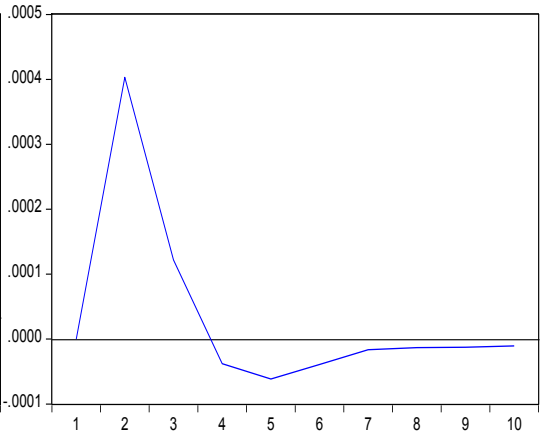


School enrolment/government expenditure/population

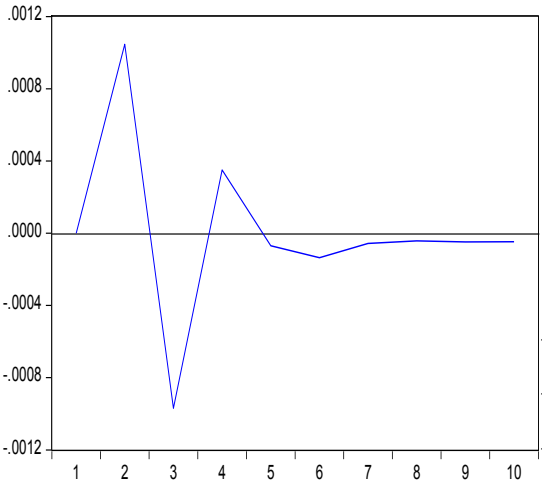
Response of FCBD to Cholesky
One S.D. SCH Innovation



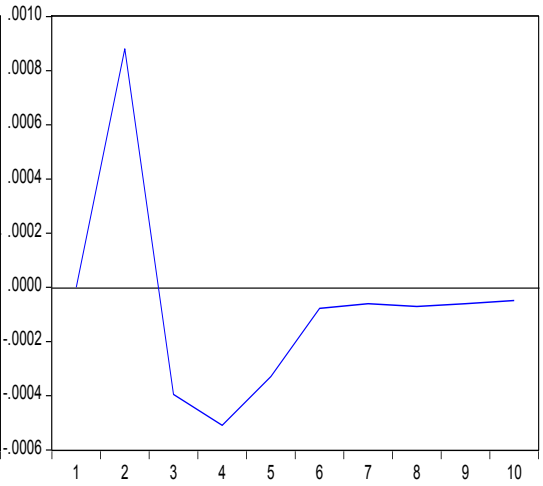
Response of FCBD to Cholesky
One S.D. GOV Innovation



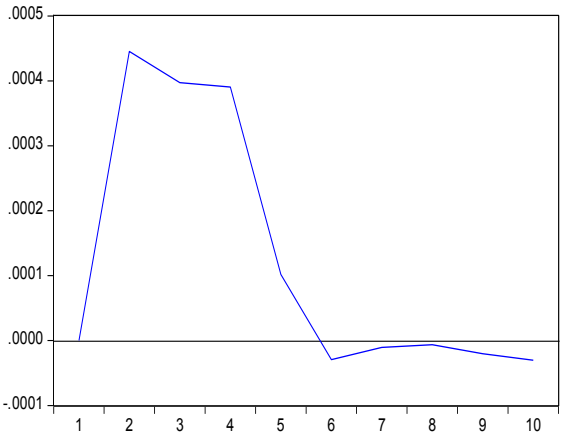
Response of FCPC to Cholesky
One S.D. POP Innovation



Response of FCBD to Cholesky
One S.D. POP Innovation



Response of FCPC to Cholesky
One S.D. GOV Innovation

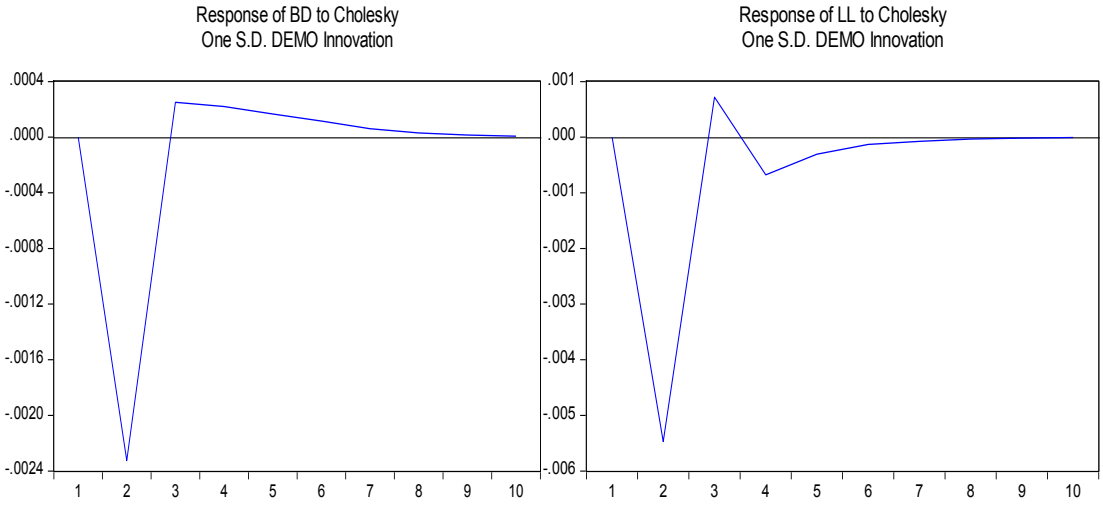


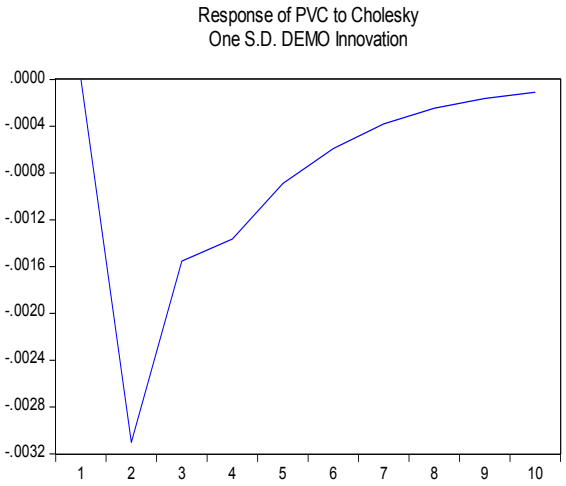
Summary, BVAR IMPULSE RESPONSES – upper middle income

Shock	Response of FD (1975-2013)	Response of FD (1990-2013)
Procedural democracy	positive	positive
Substantive democracy	positive	negative
Executive constraints	positive	positive
Autocracy	negative	negative
Per capita income	positive	positive
School enrolment	positive	positive
Population	positive	negative
Government spending	positive	positive

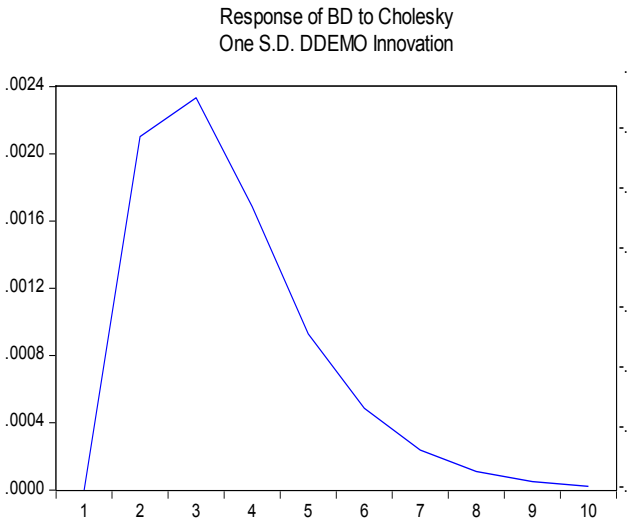
Notes: the analyses are based on all three measures of FD (bank deposits, private credit and liquid liabilities.

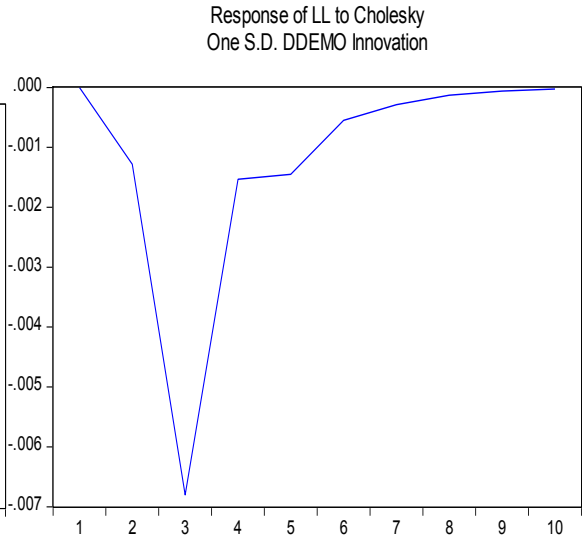
I2: lower middle income
Democracy (procedural)

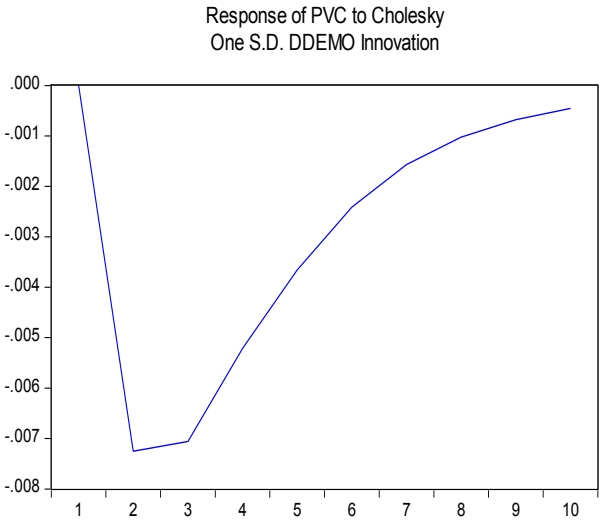




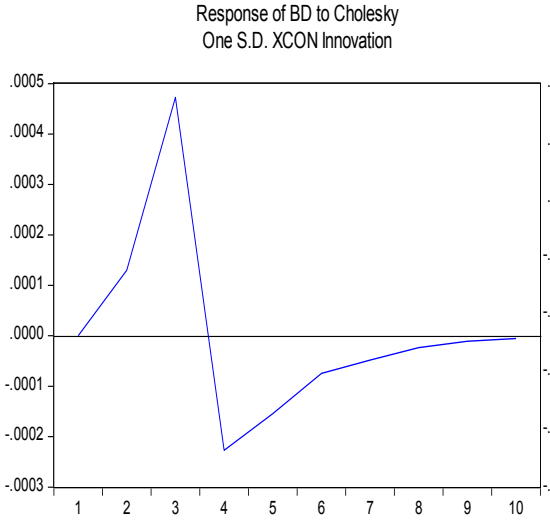
Democracy (substantive)

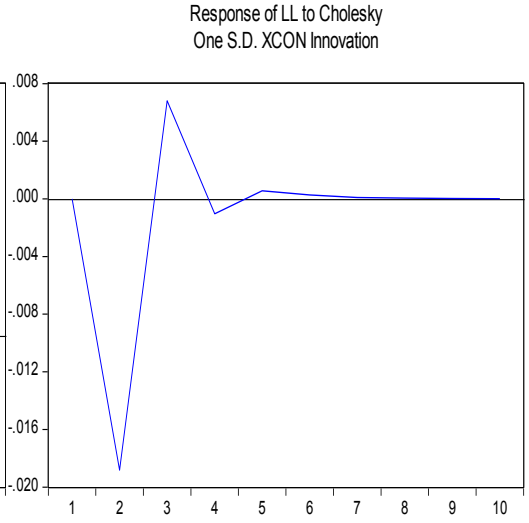




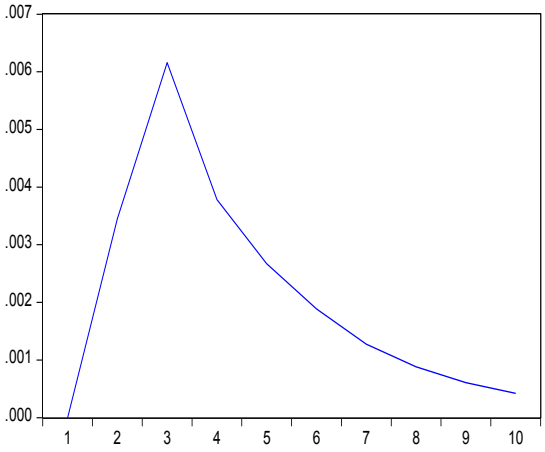


Executive constraints



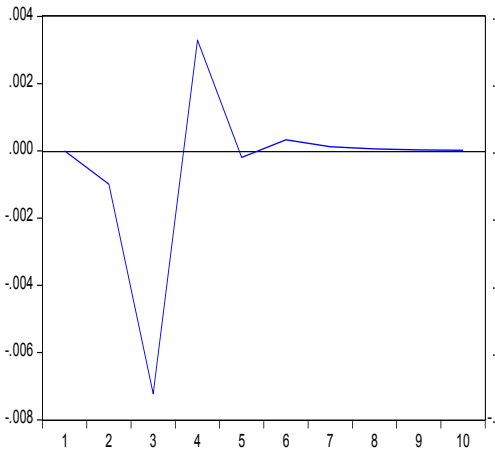


Response of PVC to Cholesky
One S.D. XCON Innovation

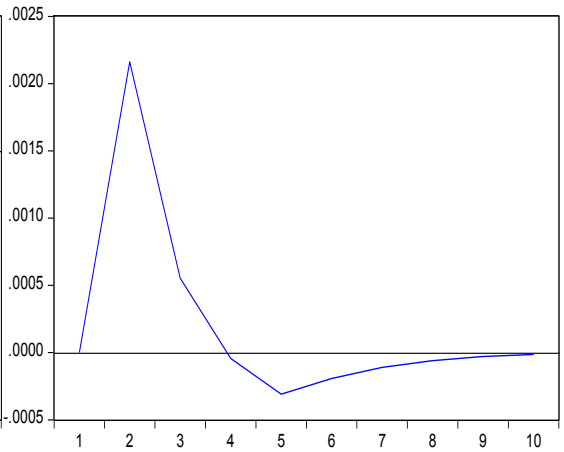


Autocracy

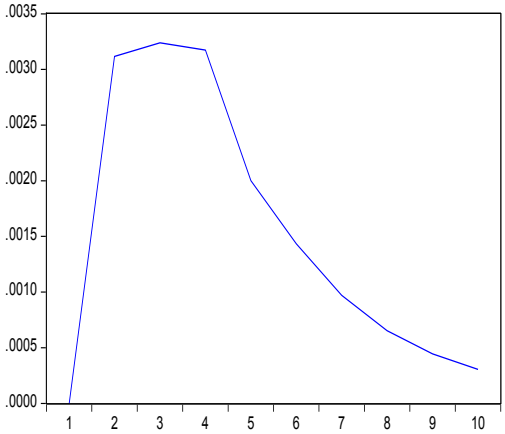
Response of LL to Cholesky
One S.D. AUTO Innovation



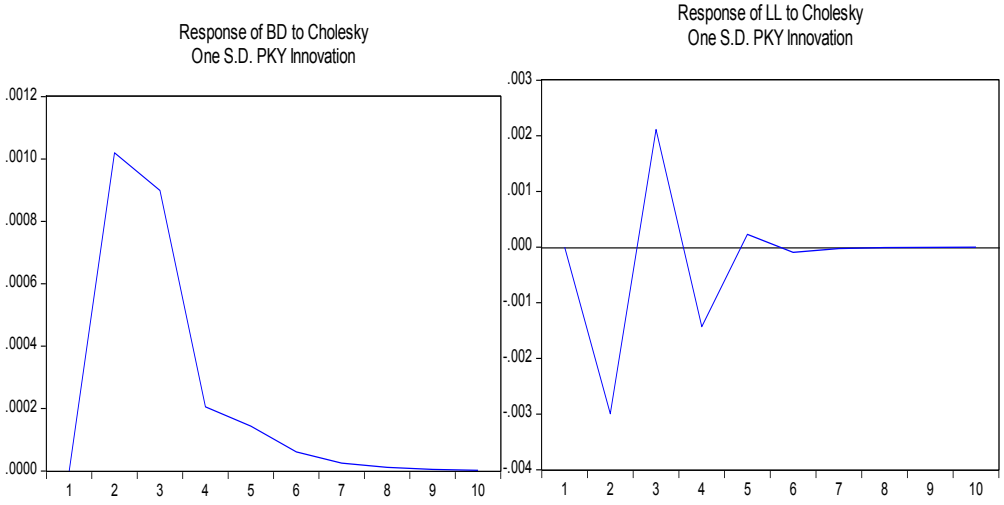
Response of BD to Cholesky
One S.D. AUTO Innovation

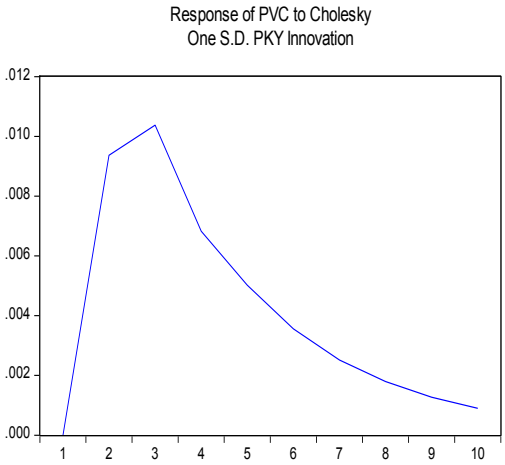


Response of PVC to Cholesky
One S.D. AUTO Innovation

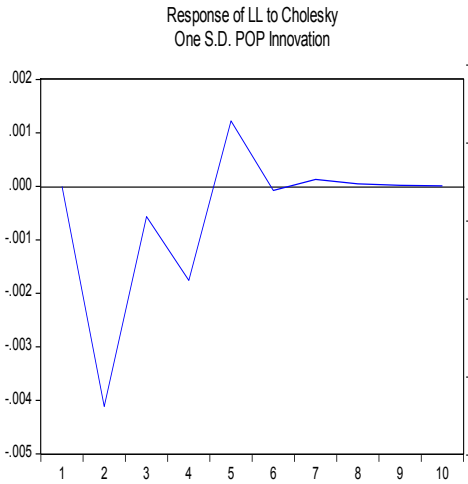


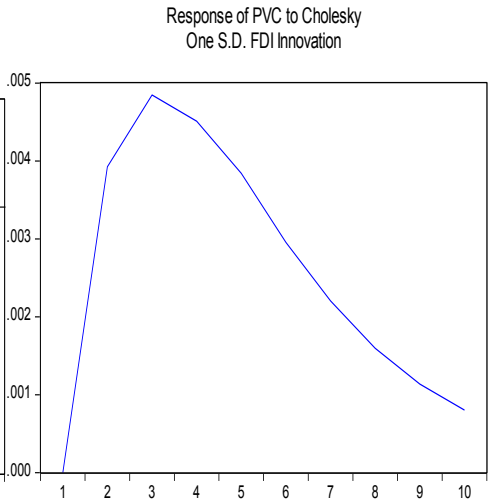
Per capita income

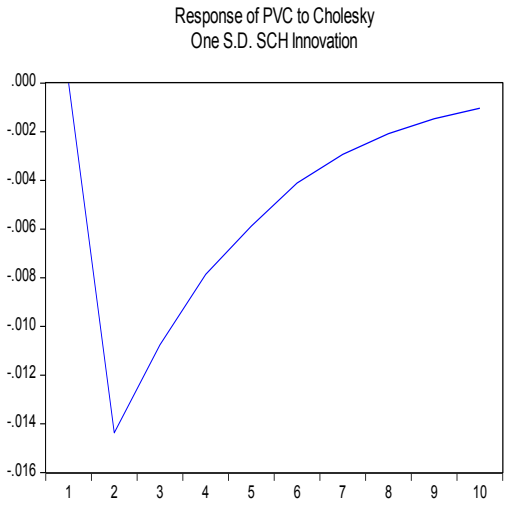




School enrolment/foreign direct investment/population





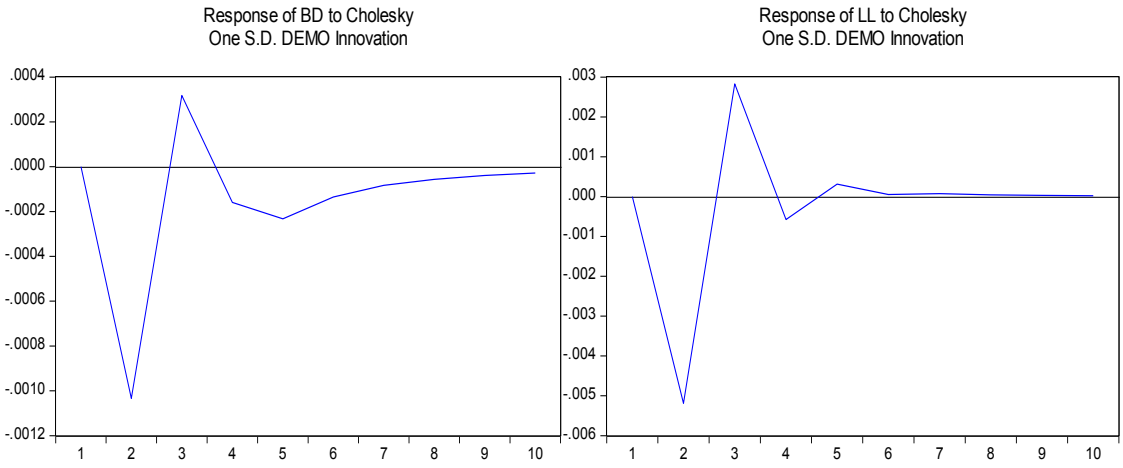


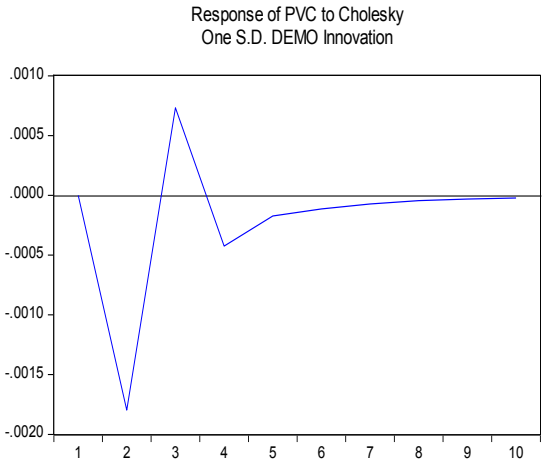
Summary, BVAR IMPULSE RESPONSES – lower middle income

Shock	Response of FD (1975-2013)	Response of FD (1990-2013)
Procedural democracy	negative	negative
Substantive democracy	negative	negative
Executive constraints	negative	positive
Autocracy	positive	positive
Per capita income	negative	positive
School enrolment	positive	negative
FDI	positive	positive
Population	-	negative

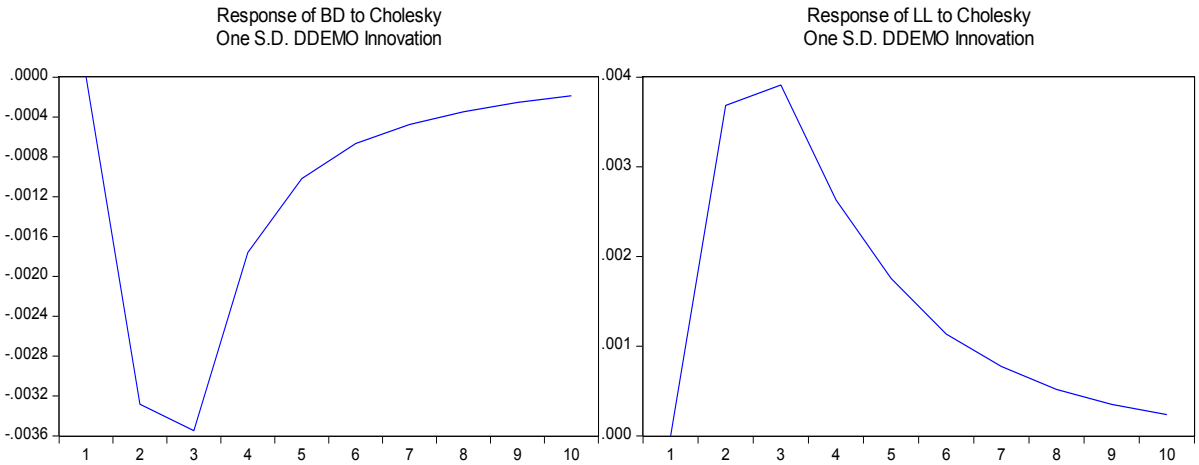
Notes: the analyses are based on all three measures of FD (bank deposits, private credit and liquid liabilities

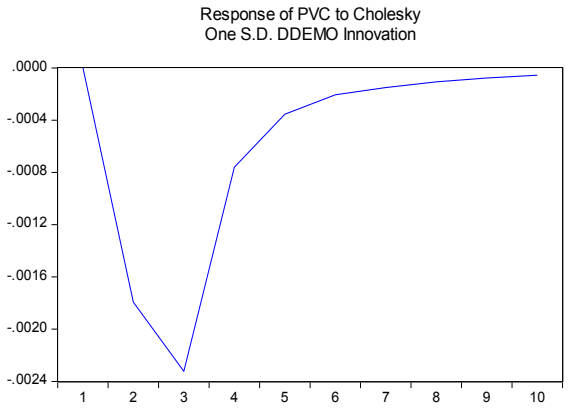
I3: low-income
Democracy (procedural)





Democracy (substantive)




Response of PVC to Cholesky
One S.D. DDEMO Innovation
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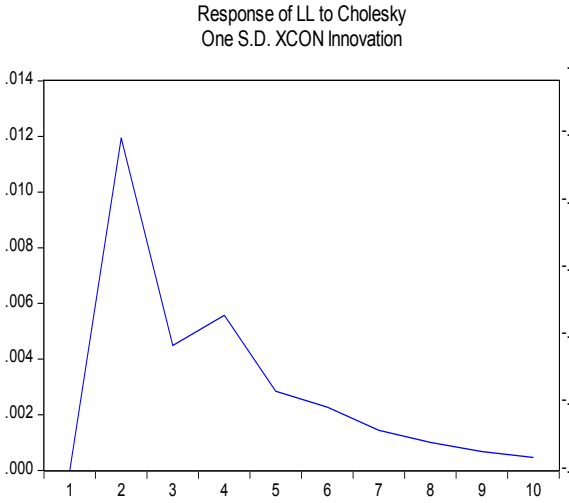
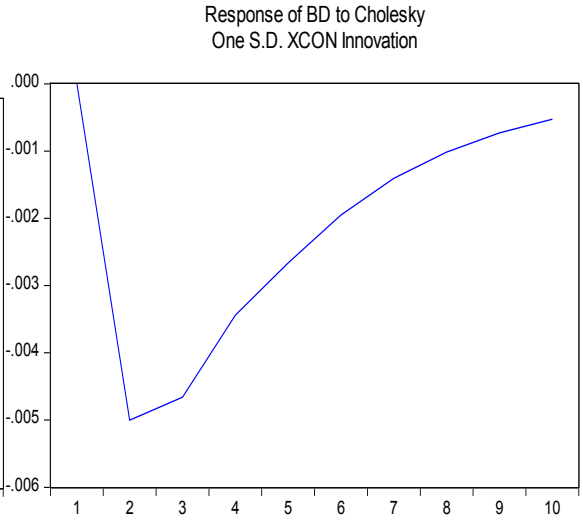
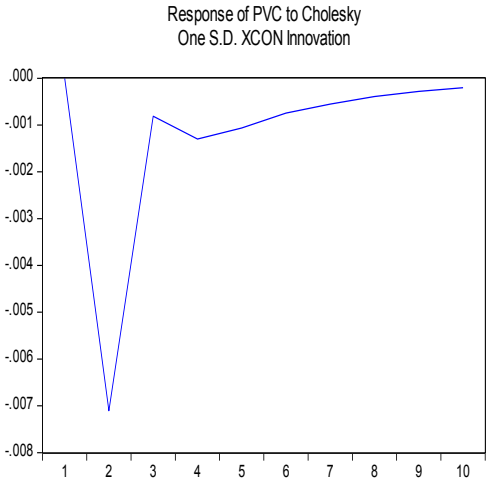
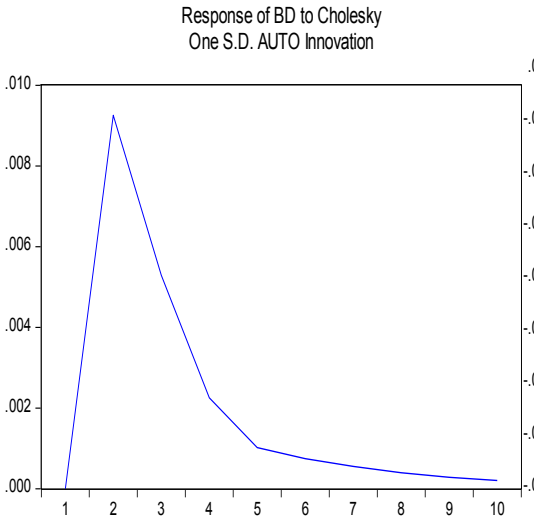
Executive constraints

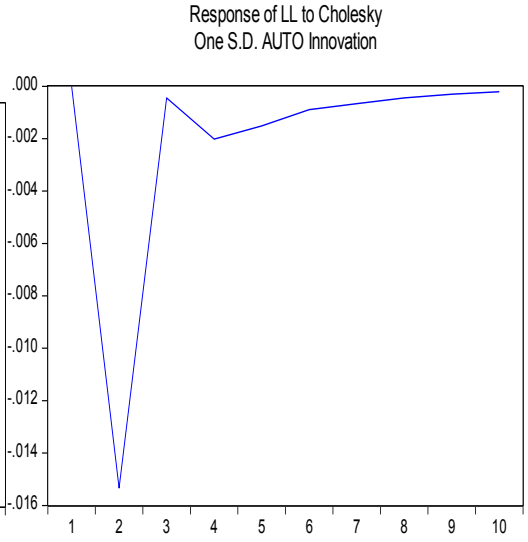


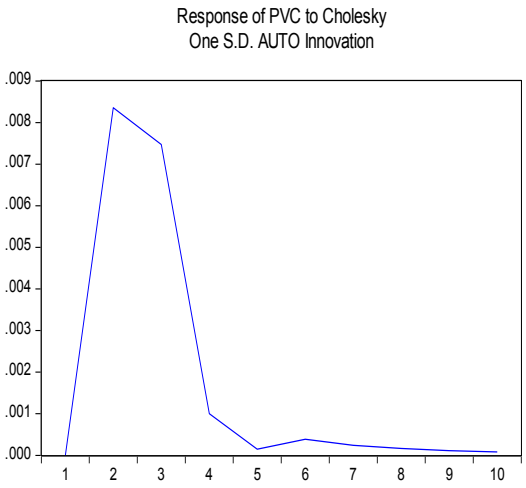




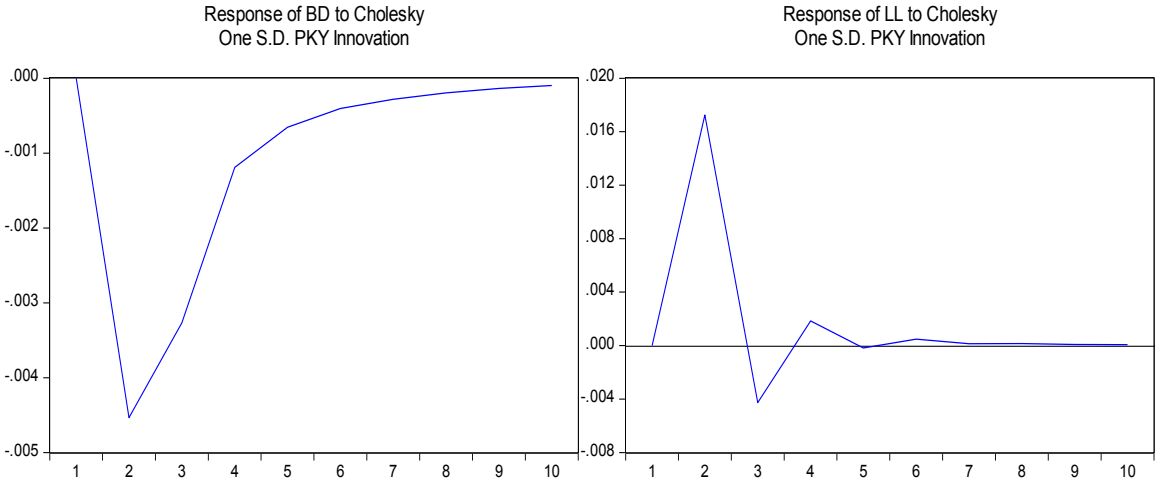
Autocracy

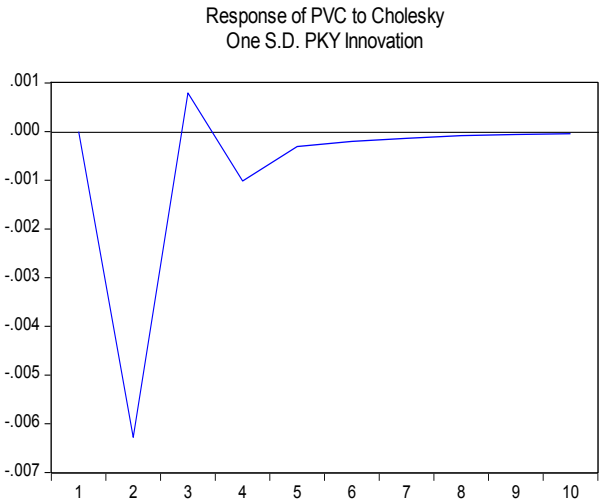




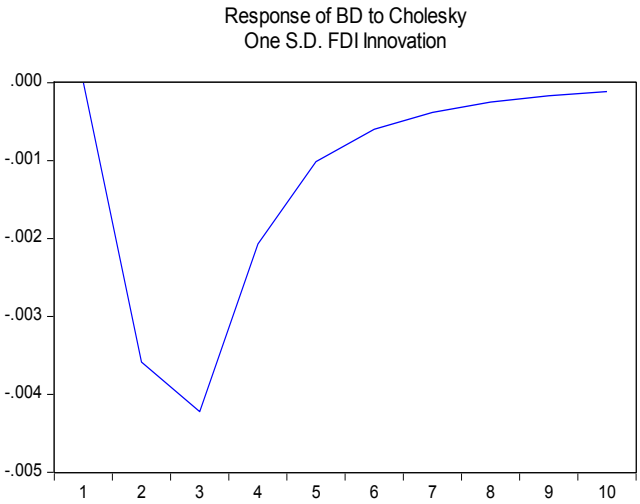


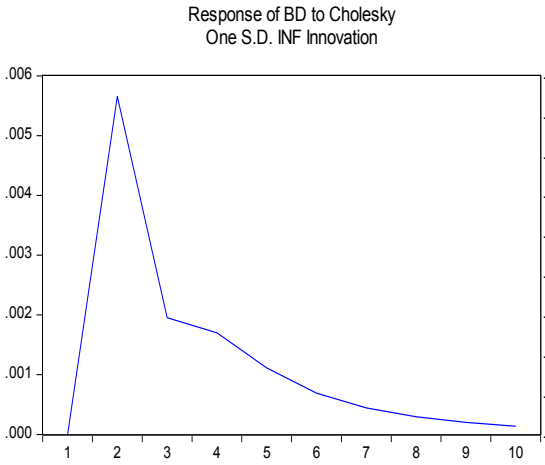
Per capita income

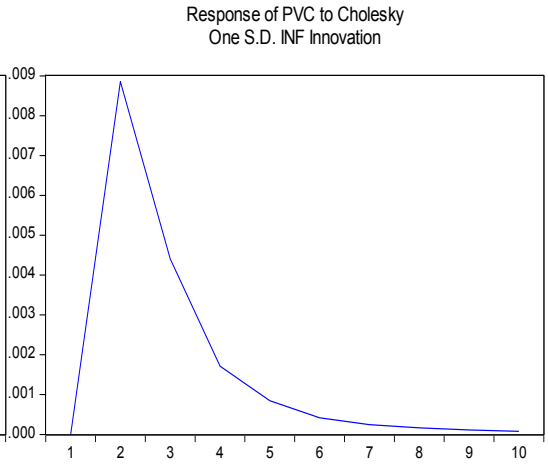


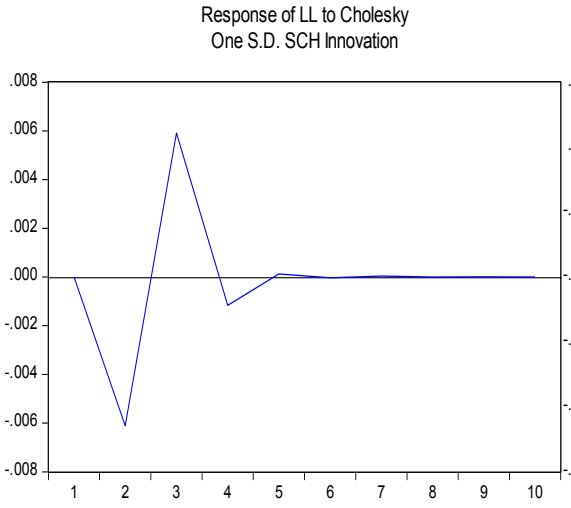


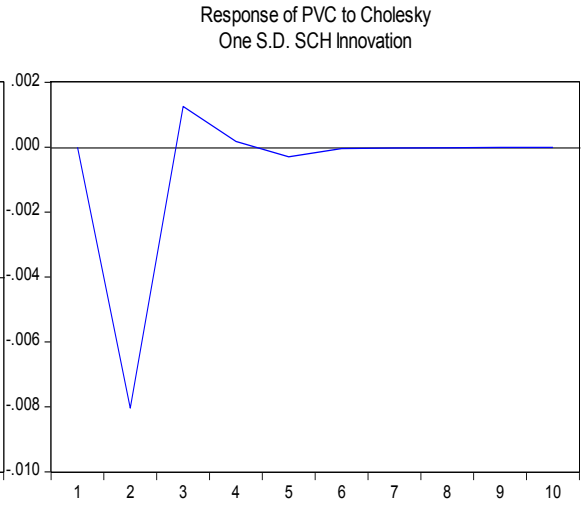
Foreign Direct Investment/Inflation/School/Government/Trade openness

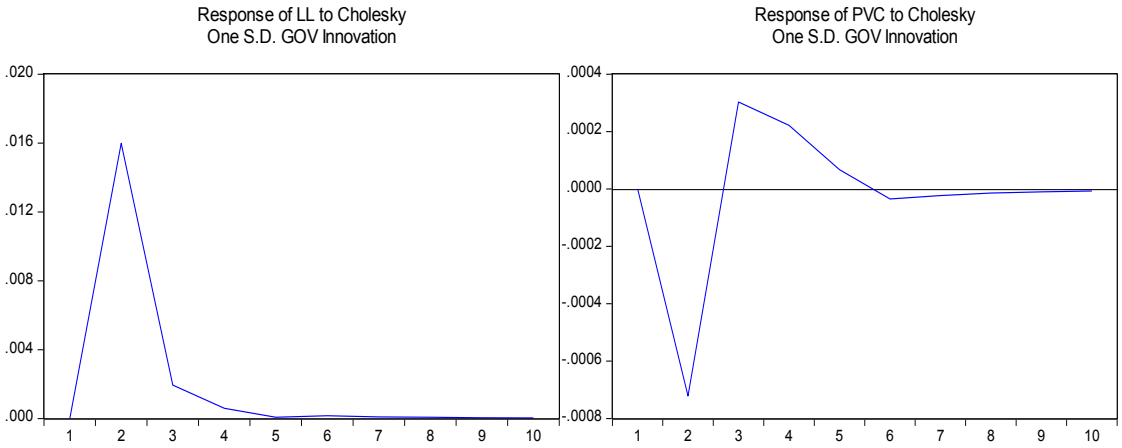


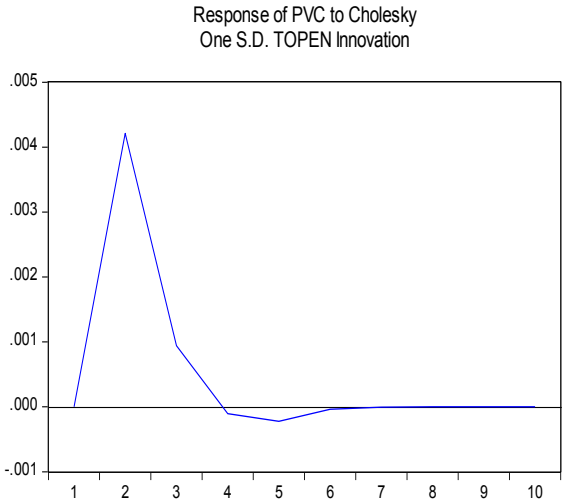












Summary BVAR IMPULSE RESPONSES – low-income

Shock	Response of FD (1975-2013)	Response of FD (1990-2013)
Procedural democracy	negative	negative
Substantive democracy	negative	negative
Executive constraints	negative	negative
Autocracy	positive	positive
Per capita income	negative	negative
School enrolment	positive	mixed
FDI	positive	negative
Inflation	-	positive
Government expenditure	positive	positive
Trade openness	positive	positive

Notes: the analyses are based on all three measures of FD (bank deposits, private credit and liquid liabilities

Appendix J: Derivation of posterior moments:

We rely on Litterman (1986) in determining the posterior moments of the parameters of interest.

To relate the general framework (equation 4.11) to BVAR models, consider the VAR (*p*) model:

$$Y_t = a_0 + \sum_{j=1}^{p} A_j Y_{t-j} + \epsilon_t$$

Where Y_t for t=1,…, T is an mx1 vector with observations on m different series and ϵ_t is an mx1 vector of the disturbance term and assumingϵ_t is i.i.d. $N(0, \sum_\epsilon)$. For compactness the model can be expressed as,

$$Y = XA + E \quad (1)$$

Or

$$y = I_m \otimes X\ \theta + e \quad (2)$$

Where $Y$and E are Txm matrices and $X = (x_1, \dots, x_2)'$ is a $Tx\ mp + 1$ matrix for $x_t = 1, y'_{t-1}, \dots, y'_{t-q}$, I_m is the identity matrix of dimension $m, \theta = vec\ A$,and $e \sim N(0, \sum_\epsilon \otimes I_T)$. Using equation (2) the likelihood function is

$$l\ \theta, \sum_\epsilon\ \propto\ \sum_\epsilon \otimes I_T\ |^{-1/2}\ exp\ -\frac{1}{2}\ (y - (I_m \otimes X)\theta)'(\sum_\epsilon \otimes I_T)((y - (I_m \otimes X)\theta) \quad (3)$$

To derive the posterior moments, assume that $\sum_\epsilon$ is known and a multivariate normal prior for, θ:

$$\prod(\theta)\ \propto\ V_0\ |^{-1/2}\ \ exp\ -\frac{1}{2}\ (\theta - \theta_0)' V_0^{-1} (\theta - \theta_0) \quad (4)$$

Where θ_0 the prior mean and V_0 the prior covariance. Combining the prior with the likelihood function in equation (3), we obtain the posterior density can be written as,

$$\prod\ \theta \backslash y\ =$$
$$exp\ -\frac{1}{2}.((V_0^{-\frac{1}{2}}(\theta - \theta_0))'(V_0^{-\frac{1}{2}}\ \theta - \theta_0\ ) + \{(\ \epsilon^{-\frac{1}{2}} \otimes X)\theta\}'\{(\ \epsilon^{-\frac{1}{2}} \otimes I_T)y - (\ \epsilon^{-\frac{1}{2}} \otimes X)\theta) \quad (5)$$

It is a multivariate normal probability distribution function. To simplify, define

$$\omega \equiv \begin{matrix} V_0^{-\frac{1}{2}}\theta_0 \\ \epsilon^{-\frac{1}{2}} \otimes I_T \quad y \end{matrix}$$

$$W \equiv \begin{matrix} V_0^{-\frac{1}{2}} \\ (\ \epsilon^{-\frac{1}{2}} \otimes X) \end{matrix} \quad (6)$$

the exponent in equation (5) now becomes,

$$\prod \theta \backslash y \ \propto \ exp \ -\frac{1}{2}(\omega - W\theta)'(\omega - W\theta) \ \propto exp \ -\frac{1}{2} \ \theta - \theta \ + (\omega - W\theta)'(\omega - W\theta) \qquad (7)$$

Where the posterior mean θ is,

$$\theta = (W'W)^{-1}W'\omega = [V_0^{-1} + (\ \overset{-1}{\epsilon} \otimes X'X)]^{-1}[V_0^{-1}\theta_0 + (\ \overset{-1}{\epsilon} \otimes X)'y$$

Since $\sum_\epsilon$ is known, the second term of equation (7) has no randomness aboutθ. The posterior densitycan summarised as,

$$\prod \theta \backslash y \ \propto \ exp \ -\frac{1}{2} \ \theta - \theta \ 'W'W(\theta - \theta)$$

$$= exp \ -\frac{1}{2} \ \theta - \theta \ '\tilde{v}^{-1}((\theta - \theta)$$

And the posterior covariance V is given as,

$$V = [V_0^{-1} + (\ \overset{-1}{\epsilon} \otimes X'X)]^{-1}$$