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Abstract

This study examines the effect of regulatory independence of the central bank in shaping the impact of electoral cycles on bank lending behaviour in Africa. It employs the dynamic system Generalized Method of Moments (SGMM) Two-Step estimator for a panel dataset of 54 African countries over the period, 2004-2022. The study found that banks lend substantially higher during election years, and reduce lending patterns thereafter. The study shows that countries that enforce monetary policy autonomy of the central bank induce a negative impact on bank lending behaviour while those that apply strong macro-prudential independent action and central bank independence reduce lending in the long term. The study provides evidence to support that regulatory independence of the central bank dampens the positive effect of elections on bank lending around election years while they amplify the reductive effects on bank lending after election periods. There is a wake-up call for countries with weak independent central bank regulatory policy to strengthen their independent regulatory policy frameworks and political institutions. This will enable them better strategize to yield a desirable outcome of bank lending to the real economy during election years.

Keywords*:* Political Economy; Political Credit Cycles, Electoral Cycle; Central Bank Regulatory Independence; Bank lending Behaviour

JEL Classification*: D7, D72, G2; G3;* E3; E5; E61; G21; L10; L51; M21; P16; P26

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1. Introduction

Recent debate in the literature highlights the procyclicality of bank lending behaviours during elections (Ghosh, 2022, 2020; Koetter & Popov, 2021; Kumar, 2020; Englmeier & Stowasser, 2017). Drawing from experiences in several countries, the literature shows that electoral events influence the lending behaviour of banks (see Ghosh, 2020; Englmeier & Stowasser, 2017; Carvalho, 2014; Dinc, 2005; and many others). For instance, Englmeier and Stowasser (2017) provide evidence that banks that are controlled by country-level politicians in Germany tend to adjust lending policies in response to local electoral cycle. This implies that as election approaches, banks tend to overextend loans, often at the request of politicians (Ghosh, 2022). In particular, the response to bank lending can be redistributed around election years conditioned on political business cycle and such targeted reallocation would often be aimed to shift election outcomes in favour of the ruling party, or coalition parties in control of the central government (Bircan & Saka, 2018). The political business cycles are cycles in macro-economic indicators such as inflation, unemployment and output, as well as political institutional arrangements like the rule of law, government effectiveness, political stability and absence of violence, among others, which are influenced by election cycles (Iddrisu & Turkson, 2020; Agbloyor *et al.*, 2019). Thus, the political business cycles influence the lending bahaviour of banks during electoral events.

The opportunistic view of political business cycle, according to Iddrisu and Ebo Turkson (2020, pp. 2), argues that "all governments, regardless of their political orientation, apply expansionary policies ahead of elections in order to increase their popularity and brighten their chances in the re-election process." This supports the mixed results in the literature concerning the effect of electoral cycles on bank lending behaviour. While studies documented that political influence on state owned banks in emerging markets leads to greater lending in election years (Englmaier & Stowasser, 2017; Carvalho, 2014; Dinc, 2005), in industrialized countries, there was no discernible difference in the credit growth rates of public and private banks (Turkey *et al.*, 2019; Dinc, 2005), and thus, banks hold more capital through bank loan loss provisioning and lend less during election years across developed countries (Ghosh, 2022; Bircan & Saka, 2019, 2018; Ozili, 2019). Extant literature has ignored the African context and that the differences in the findings of earlier studies could be attributed to the differences in political settings, business cycle and in particular differences in independent regulatory reforms of institutions (Ghosh, 2022; Bircan & Saka, 2019, 2018; Ozili, 2019; Iddrisu & Ebo Turkson, 2020; Harris *et al.*, 2018; Cohen & Edwards, 2017; Dinc, 2005). In view of that, there is a good reason to expect regulatory policies to influence bank lending behaviour across different electoral cycles. Although, the above discussion explains how the political economy influence bank lending behaviour (see also, Dreher et al., 2019; Agarwal et al. 2016; Rodriguez & Santiso, 2008), little or no study has empirically examined the effect of electoral cycles on bank lending behaviour from the African context. This study seeks to fill this gap.

It is commonly acknowledged that the regulatory body must be independent in order for regulatory decisions to be made and enforcement measures to be carried out without unauthorized political interference or attempts to have a negative impact on price and financial stability. Although there is a stronger analytical case for regulatory independence than there was in the past, not everyone agrees that it is inherently desirable. In this paper, we examine the role that regulatory independence plays on the effect of electoral cycles on bank lending behaviour. Our aim is to investigate whether the independent regulatory policies of the central bank help African economies moderate (either reduce or enhance) the impact of electoral cycles on bank lending behaviour. Regulatory independence of central bank, according to Thomson (2020), is a set of standards, policies and financial reforms that gives the monetary authority the power to provide independent functions and regulatory decisions without political interference or the influence of governments and political parties (see also, Müller, 2019;Viñals, 2013; Arnone *et al.* 2009). However, the concept of independent regulatory policies and bank lending has attracted little attention in the literature. For instance, changes in political economy can cause the central bank to act pro-cyclically or counter cyclically through the financial market around election periods (see, Keita & Turcu, 2022; Mpatswe et al., 2011), but what is not known is how independent regulatory policy affect the lending behaviours of bank. Following the argument of the opportunistic model, stated above, it is important for policymakers and independent regulatory authorities to understand the impact of independent regulatory policies of central bank in explaining the electoral cycle-bank lending nexus.

Previous studies provide evidence that monetary policy influence banks' pricing behaviour (Ciccarelli *et al.*, 2015); macro-prudential tools can stabilize credit growth (BIS, 2017; Jiménez *et al*., 2017; Gambacorta & Murcia, 2017; Ayyagari *et al*., 2017; and Epure *et al*., 2017) and in contrast to monetary policy, central banks are uniquely insulated from political cycles in macro-prudential policy (Müller, 2019); bank's lending patterns are affected by elections and business cycles (Ali *et al.*, 2022); high bank loan prices in election years increase access to finance compared to non-election years (Iddrisu & Ebo Turkson, 2020);and there is the existence of the effect of political business cycles on economic growth and human development (Iddrisu & Mohammed, 2019; Mosley & Chiripanhura, 2016). In addition, bank lending is constrained by monetary policy in emerging markets (Modugu & Dempere, 2022; Borio & Gambacorta, 2017).; Altunbas *et al.*, 2018; Amidu, 2008); macro-prudential policy efforts are successful in limiting excessive credit booms (Cehajic & Kosak, 2021; Altunbas *et al.*, 2018), and for reducing systemic risk (Meuleman & Vander Vennet, 2020; Akinci & Olmstead-Rumsey, 2018); and banks with stringent macro-prudential policy have the incentive to shield their loan portfolio (Fang *et al.*, 2018; Jimenez *et al.*, 2017). In line with government support, Azzimonti (2019) argues that several efforts of governments in the implementation of macro-prudential policies and major reforms have played a vital role in mitigating excessive lending behaviours or risk-taking of banks and reducing the probability of financial crises, yet extant literature has been silent on testing the independent regulation-lending nexus.

Despite the relevance of these issues, not much research has been undertaken on whether: (1) different electoral cycles impact bank lending; (2) independent regulatory policies of central bank influence bank lending behaviour in election periods and in periods without election; and (3) the

independent regulatory policies of central bank influence the election-lending nexus. Africa is noted in its paucity of funds required to grow the real sector of the economy and also, the combination of weak system stability, weak central bank independence, independent regulatory reforms and misalignment among the fiscal, monetary policies and prudential regulations (Gyeke-Dako *et al.*, 2022; Strong, 2021; De Waal *et al.*, 2018; Agoba *et al.*, 2017; Arnone *et al.*, 2009; Jeanneney, 2006), have created a hug gap in the credit market (Kanga, 2021; Amidu, 2006). More so, Africa provides an interesting case study for this empirical experiment because scholars and policymakers on the continent are now viewing independent regulatory policy framework of central banks, as an important tool for stabilizing the banking system during electoral cycles (Nguyen *et al.*, 2019). The continent offers a conducive ground for the study of political business cycle since Africa is concurrently going through a prolonged process of economic reform (Block, 2002).

Based on this, the study offers novel contribution to the literature by using the dynamic system Generalized Method of Moments (SGMM) to examine how different electoral cycles affect bank lending in Africa. In addition, it employs different measures of independent regulatory policies to provide a first time evidence of how these regulatory measures affect bank lending across different electoral regimes in Africa. It also makes significant contributions to the literature by examining the role of independent regulatory policies of the central bank in moderating the relationship between electoral cycles and bank lending behaviour in Africa.

The rest of the study is organized into five sections. Overview and Literature review of related studies are contained in section 2 and section 3 respectively, section 4 discusses the data and methodology. The empirical results are contained in section 5 and section 6 concludes the study.

2. Literature Review: Theories, Empirics and Hypothesis Development

Theories of political lending cycles predict that governments intervene in the banking business and that the engagements of governments in the banking business affect the banking sector. Banks that are under government control are politically motivated and they are constrained with capital during electoral periods (Gerschenkron, 2015). This is because governments use loans by state-owned banks as a strategic tool for re-election (Bircan & Saka, 2019). In particular, bank credit policy can be significantly adjusted around election years. This adjustment in credit policy during election periods can have real effects on the economy. For instance, the banking sector provide banking services through lending channels and that the public banks play an important role in times of crisis by providing loans and by ensuring market liquidity (Carvalho, 2014; Chen *et al.*, 2014; Brei & Schclarek, 2013). The study is perceived through the lens of economic institutional theory, which focuses on the roles of social, political and economic systems in which companies operate and gain their legitimacy (Shrum, 2001). Thus, politicians can compel banks to make loans to politically connected companies under favourable terms, such as interest rates and long maturities for the loans (Meriläinen, 2016; Micco & Panizza, 2006; Shleifer & Vishny, 1994).

Government involvement in the banking industry has an impact on bank lending behaviour. The literature provides evidence that countries in underdeveloped regions increase the rate of loan

growth of public banks during elections, whereas in developed nations, it is not different from the loan growth rate of private banks (Ali *et al.*, 2022; Sleifer & Vishny, 1994). This confirms that lending by public banks is less pro-cyclical than lending by private banks in nations with solid governance (Bertay *et al.*, 2015). Ghosh (2022) investigates the impact of elections on bank provisioning for a longitudinal dataset of India, and found that banks reduce provisions around elections and it is profound in state-owned banks. In addition, Gerschenkron (2015) indicated that government instruct banks to supply capital to individuals who need access to funding. Dinc (2005), used a dataset of 36 emerging markets and developed economies, over the period 1994-2000, to study the behaviour of lending during elections. He revealed that, during elections, public bank lending increases in developing countries. However, none of the studies in the literature looked at how electoral cycles (dynamics of election events) affect the lending behaviour of banks in Africa.

This study contributes to the literature by empirically testing the hypothesis stated below:

H_1: Electoral cycles are important in determining the levels of bank lending behaviour in different political business regimes

The focus of regulations on the banking behaviours across business cycles has a solid foundation in building a strong social and political economy. On the regulatory independence, there is generally low central bank independence in African countries; thus, the central banks are not free from interference from the incumbent government in their conduct of monetary policy, macro-prudential and governance policy framework. In view of that, the central bank is always influenced to embark on expansionary policies, particularly in election years (Iddrisu & Turkson, 2020). On one hand, monetary and macro-prudential instruments of the central bank are seen to influence banking behaviours (see, Modugu & Dempere, 2022; Hodula & Ngo, 2021; Cehajic & Kosak, 2021; Abuka *et al.*, 2019; Ayyagari *et al.*, 2017). For instance, Modugu and Dempere (2022) examine the impact of monetary policy instruments on bank lending in the emerging economies of Sub-Sahara Africa, using the dynamic system generalized method of moments (GMM) for 80 banks in 20 Sub-Sahara Africa over the 2010-2019 period. They found interesting results by showing that expansionary monetary policy (i.e., loosening of the policy rate and increasing of money supply) propels bank lending while monetary contractions (tightening of monetary policy rates and reducing money supply) by the central bank leads to credit contraction. In addition, monetary policy is found to be a weak bank lending channel in developing countries (Abuka *et al.*, 2019). They provided new evidence that contractionary monetary policy reduces credit supply, leading to greater rejection of loan applications and the tightening of lending rates and volumes.

In a study by Cehajic and Kosak (2021), they analyze the effects of macro-prudential measures on bank lending in the European Union. They employed 3434 European banks with 18,616 observations covering the period between 2000 and 2017. They found that macro-prudential instruments are used effectively by regulatory authorities for modulating credit activities of banks across the business cycles. They provide evidence to support that in periods of loosening cycles,

macro-prudential measures are positively associated with bank lending. However, the impact is weak during periods of tightening actions, where the measures of macro-prudential policies are found to have a downward effect on bank lending. Evidence from non-bank credit intermediation in 23 European Union countries indicates that macro-prudential actions affect shadow lending (see Hodula & Ngo, 2021). Hodula and Ngo (2021) applied an instrumental variable (IV) estimation framework to demonstrate that the tightening of macro-prudential policy leads to an increase in bank lending. Additionally, the impact is more binding in a low-capitalized banking system, leading to credit restructuring and reallocation from banks to the non-banking sector. Ayyagari *et al.* (2017) combined data on 1.3 million firms from 2002 to 2011 operating in 59 countries that have undergone some changes in macro-prudential regulations over the period. They found evidence to support that macro-prudential policies are important in lowering credit growth.

On the other hand, monetary autonomy of the central bank affects the lending channels of the banks. For instance, monetary autonomy under fixed exchange rate regime affect the lending behaviour of banks (Rey, 2016; Farhi & Werning, 2014; Klein & Shambaugh, 2015); and by the recent work from Muller (2020) showing that macro-prudential regulation is influenced by electoral cycles. The monetary policy is conducted by the Central Bank of West Africa States, which is empowered to take any measures concerning instruments and rules related to the credit policy applicable to credit institutions. In the West African Economic and Monetary Union (WAEMU), capital mobility is therefore restricted and can lead to monetary policy independence. There has been extensive debate about the political business cycles and their impact on several other outcome variables. Interestingly, the emerging literature has significantly illustrated the existence of political business cycles with few relating to economic growth and development (Funashima, 2016). In addition, central banks in advanced economies can sacrifice some political independence without undermining the operational independence to their monetary policy and financial stability functions. However, what is missing in the literature, in particular Africa, is whether the independence of regulatory policies of central bank affect bank lending behaviours. This study provides insights into the response of bank lending behaviour to regulatory independence of central banks in Africa. We formulate the following hypothesis:

H_2: Regulatory policy independence of the central bank has a significant impact on bank lending behaviours across electoral regimes

From the theoretical and empirical reviews, it is evident that regulatory independence of the central bank plays a significant role in election-lending nexus, it may either reduce or magnify the impacts. However, empirical studies to this effect are nonexistent in Africa. Interestingly, following the literature on central bank's regulatory independence and institutional arrangements that may differ across regions (Jones, 2022; Romelli, 2022; Satragno, 2022; Klüh & Urban, 2022; Gabriel *et al.*, 2022; Martinez-Resano, 2004), the individual impact of monetary policy (Yun & Cho, 2022; Modugu & Dempere, 2022; Mwankemwa & Mlamka, 2022; Borio & Gambacorta, 2017; Mishra *et al.*, 2014; Kakes & Sturm, 2002), macro-prudential (Auer *et al*., 2022; Czaplicki, 2022; Hodula

& Ngo, 2021; Altunbas *et al*., 2018) and central bank policy independence (Abor *et al.*, 2022; Agoba *et al*., 2020; Doumpos *et al.*, 2015) on bank lending behaviour can vary across different institutional framework. However, the literature is silent on this. In this study, we attempt to present first time evidence on how the independent central bank regulatory policy shapes the impact of electoral cycle on bank lending behaviour. Thus, we test the hypothesis that:

H_3: Regulatory policy independence is important in shaping the effect of electoral cycles on bank lending behaviours

3. Data and Methodology

The study employs a panel dataset of 54 African economies covering the period, 2004-2022. The sample includes countries that have experienced presidential elections and have undergone structural reforms at any time during the sample period. The panel approach enables us to account for continuously evolving country-specific differences in technology, institutional and economic factors.

We utilize the baseline model, which is expressed as:

Bank lending behaviour = *f* (Electoral Cycles, Regulatory Independence, Control variables) (1)

Following Dinc (2005, pp.472), we address potential endogeneity using the dynamic system Generalized Method of Moments (SGMM) approach. We use the strength of the independent regulatory policy of the central bank as well as their lags and leads in pursuing its goals to instrument for differences in the use of regulatory policy measures across countries. The assumption underlying the selection of instruments is supported by several research works (e.g., Carrillo *et al.*, 2021; Bodenstein *et al.*, 2019; Paoli & Paustian, 2017; Wintoki *et al.*, 2012). Thus, we employ the dynamic system Generalized Method of Moments (SGMM) Two-Step estimation technique.

3.1 Model Specification

We begin our empirical analysis by considering the number of lags of bank lending which are adequate for capturing the dynamic completeness of our benchmark model. In this regard, previous literature recommends the use of two lags for capturing the influence of past indicators on current data (see for example, Wintoki *et al.*, 2012; Gschwandtner, 2005). First, the study seeks to examine the impacts of electoral cycle and regulatory independence of the central bank on bank lending

behaviour. Second, it examines the interactive effect of electoral cycle and regulatory independent on bank lending.

3.1.1 Impacts of electoral cycle and regulatory independence on bank lending behaviour

From the baseline equation, we estimate the independent effect of electoral cycle and regulatory independence of the central bank on bank lending behaviour by following the works of Koetter and Popov (2021) and Iddrisu and Turkson (2020). This allows us to specify the dynamic SGMM equation below:

$$Bank\ lending\ behaviour_{jt} = \sum_{g=1}^{p} \sigma_g Bank\ lending\ behaviour_{j,t-g} + \alpha_0 Electoral\ cycle_{jt} + \sum_{l=1}^{2} \alpha_l^{-} Electoral\ cycle_{j,t-l} + \sum_{l=1}^{2} \alpha_l^{+} Electoral\ cycle_{j,t+l} + \sum_{i=1}^{3} \lambda_i Regulatory\ independence_{jt} + \sum_{i=1}^{3} \lambda_i^{-} Regulatory\ independence_{j,t-i} + \sum_{i=1}^{3} \lambda_i^{+} Regulatory\ independence_{j,t+i} + \sum_{k=1}^{N} \beta_k X_{jt} + \gamma_j + \mu_t + \varepsilon_{jt} \quad (2)$$

where subscript j denotes cross sectional dimension (country specifics), j = 1, …, M; t denotes the time series dimension (time).

In equation 2, t = 1, …, T; and $t - g$, g=1,…, 2, denote the lag dimensions of bank lending behaviour; t-l, l = 0, …, 2, denote the lag dimensions of electoral cycles; and t+l, l= 1, …, 2, denote the lead dimensions of electoral cycles; $\sigma_g: g = 1, \ldots p$, represent the regression coefficients of the lags of the dependent variable; α_0 is the regression coefficient of elections in the current year t; $\alpha_l^{-}: l = 1, \ldots, 2$, represent the regression coefficients of a vector of the lags of electoral cycle; $\alpha_l^{+}: l = 1, \ldots, 2$, represent the regression coefficients of a vector of the leads of electoral cycle; $\lambda_i : i = 1, \ldots, 3$, denote the regression coefficients of three individual indicators capturing the central bank regulatory independence in the current year t; $\lambda_i^{-} : i = 1, \ldots, 3$, represent the regression coefficients of the lags of the three indicators capturing regulatory independence of the central bank, $\lambda_i^{+} : i = 1, \ldots, 3$, represent the regression coefficients of the leads of the three indicators capturing regulatory independence of the central bank; t-1 and t+1 represent the lag and lead of regulatory independence respectively; $\beta_k: k = 1, \ldots, N$, are regression parameters for a vector X (measuring a set of control variables) to be estimated; γ_j is the country fixed effect; and μ_t is the time fixed effect t; and ε_{jt} is idiosyncratic error term, which controls for unit-specific residual in the model for the *j*th *country* at *period t*.

Measurements

In equation 2, the impact of electoral cycle and regulatory independence on bank lending are estimated independently before estimating their interactive effects.

Bank lending behaviour

The dependent variable in equations 2, bank lending behaviour, is measured using the percentage of aggregate bank credit to gross domestic product (GDP) in a given country. It indicates the average level of participation of the banking sector in the real economy, as used in the literature by (Amidu, 2006; Borio & Gambarcota, 2017; Abuka *et al.*, 2019; Modugu & Dempre, 2022). This includes the volume of loans to the state government, corporates, businesses and households. Data on bank credit to GDP was obtained from the World Bank Global Financial Development Database. An increasing level of bank credit to GDP shows greater lending behaviour of the banking sector.

Electoral cycles

Elections are events which motivate the politicians to use government's resources to increase their chances of election. The electoral cycle in our model is the period around a country's defined election year. Following Koetter and Popov (2021), Iddrisu and Turkson (2020), Agbloyor *et al.* (2019), we construct electoral cycle variables as a dummy and the variables were obtained mainly by searching online to find out when elections were held. Using the dummy identifying elections, we decompose electoral cycle into three (3), and this includes:(1) election period (denoted as $Electoral\ cycle\ _t$; constructed as a dummy, with a value of 1 in election years and 0 otherwise); (2) pre-election denoted as $Electoral\ cycle\ _{t-l}$; constructed as a dummy, with a value equal to 1 in years before presidential elections, and 0 otherwise); and (3) post-election (denoted as $Electoral\ cycle\ _{t+l}$; constructed as a dummy, with a value equal to 1 in years after presidential election, and 0 otherwise. A post-election period captures a national election after which either a new party comes into power or there is a continuity of incumbent government. In constructing the post-election dummy, we differentiate between elections with a change in government from all other elections. This allows us to rule out the tendency that changes in lending patterns observed after power-changing elections are strictly driven by elections themselves, regardless of the outcome. In robustness tests, we use one pre-and two-post election observations for elections in our dataset typically take place at 4-year or 5-year intervals and only exceptionally take place at 2-year or 3-year periods. In equation 2, we include real GDP per capita and individual measures of political institutional variables as controls to observe the behaviour of the impact of electoral cycles on bank lending behaviour. Based on this, we expect varying results between electoral cycle and bank lending behaviour. For instance, we expect banks to increase their lending before presidential election as supported by Fungáčová *et al*., (2020). However, we expect banks' to either increase or lower their lending capacity during and after election periods due to possible risks, political, government and public interests (see for example, Koetter & Popov, 2021).

Regulatory independence

The Organisation for Economic Co-operation and Development (OECD) describes regulatory independence as the "protection from attempts to exercise undue control and influence from government and stakeholders external to the regulator and those who seek to inappropriately influence regulatory decision-making from within (OECD, 2014, 2017, pp.5)." Regulatory independence allows the central bank to independently focus on financial and price stability goals

through monetary and macro-prudential instruments as well as governance roles, supervision and responsibilities (Balls *et al.*, 2018; Kohn, 2015; Cukierman, 2013, 2008).The study draws up an ideal framework for measuring regulatory independence of the central bank. Thus, we decompose regulatory independence of the central bank into three individual regulatory measures: (1) Monetary policy independence; (2) Macro-prudential independence; and (3) Central Bank independence. In equation 2, we simultaneously introduce the individual variables of the central bank regulatory independence into the model in order to examine their independent effect on bank lending.

Monetary Policy independence is the policy actions that give power to the central bank to control its own monetary policy instrument for domestic purposes independent of external monetary influences. Example is the independent control of the policy rate or interest rate payable on short-term borrowings. Monetary policy independence is not easy to define and measure, but one of the widely used measures is the extent of deviation of the domestic interest rate from the base rate. We employ the monetary independence index defined by Aizenman *et al*. (2020), as the reciprocal of the annual correlation between the monthly short-term interest rates of the home country and the base country. We obtained data on monetary policy independence from IMF's International Financial Statistics (IFS). Monetary policy independence index ranges between 0 and 1 with higher values of index denoting lower correlation of interest rates and thus greater monetary policy independence. We expect monetary policy independence to reduce the level of bank lending behaviour. This supports empirical works which directly test and lend support to the notion that countries with more independent monetary instrument tend to deliver better inflation outcomes, leading to contractionary policy, and thus, lowering bank lending.

Macro-prudential independence is the approach to prudential regulations that aim to offer regulatory authorities the sole mandate to supervise and mitigate possible risk to the financial system as a whole. Edge and Liang (2019) focuses on the degree of macro-prudential independent policy by placing a relatively low weight on the ability of a country's policy institutions to take action and placing a high weight on political economy considerations in developing a country's financial stability governance structures (see also, Sever and Yücel, 2022; Masciandaro & Romelli, 2018). Contrary to their measure, we employ the Alam *et al.* (2019) measure of macro-prudential independent policy. An independent macro-prudential authority is given the power to make policy decisions and enable it to perform effectively (Krishnamurti & Lee, 2014). According to Buch *et al.* (2018), a structured policy process can be a key element in ensuring that prudential policy decisions are based on independent assessments, on transparent decisions, and that decision-makers are accountable to the public. Given that price stability and financial stability policies are closely interlinked, delegating macro-prudential authority to a government agency other than the central bank may threaten the bank's independence over its objective of maintaining stability in the financial economy (see, Duff, 2014). There is no standard definition and measure of macro-prudential independence, we rely on Alam *et al.* (2019) databases of macro-prudential index as the indicators of macro-prudential instruments are often determined independently by the central bank. It is constructed as an index of dummies. This is the policy change indicator for the instrument which records tightening actions (+1) (i.e. strengthening), loosening actions (-1) (i.e. relaxing), and no changes (0), and it is cumulated over the past four quarters to account for potential lagged

effects. Data on macro-prudential policy is an aggregate (composite) index of 17 indicators of macro-prudential action (countercyclical capital buffer, requirements for banks to maintain a capital conservation buffer, capital requirements, limits on leverage of banks, loan loss provision requirements, limits on foreign currency, limits to the loan-to-value ratios, debt service-to-income ratio, minimum requirements for liquidity coverage ratios, limits to the loan-deposit ratio, limits to net or gross open foreign exchange positions, reserve requirements, loan restrictions, risk measures, taxes and levies applied to specified transactions, and macro-prudential measures not captured in the above categories). These are sum of all the dummies of the policy actions recorded in the databases and takes values from -1 to 1, with higher values of the index indicating strong macro-prudential independence. Data was obtained from the iMaPP database constructed by Alam *et al.* (2019), integrating information from major existing data basses (the Global Macro-prudential policy instruments and IMF annual macro-prudential policy survey), national sources (Lim *et al.*, 2011, 2013; Alam *et al.*, 2019). We expect a negative effect of macro-prudential independence on bank lending. Given that macro-prudential tools are structured with the objective to increase the resilience of the financial sector, increasing the level of central bank regulatory independence tends to control banks' capital reserves and induce greater restriction on their risky lending behaviours. This is consistent with the works of Behncke (2022), Abuka *et al.* (2019) and Hussain and Bashir (2019).

Central bank independence is an index that measures the ability of the central bank to formulate independent policies, as employed in the work of Agoba *et al.* (2020). In general, it is a policy that controls monetary policy tools and limits the government's influence on the management of monetary policy by the central bank. It is a *de jure* measure of central bank independence based on a weighted aggregation of 16 legal indicators using the criteria and weights of the Cukierman, Webb and Neyapti indexes (CWN) (Garriga, 2020). The index varies between 0 and 1 (i.e., 0 and 100%), with higher values indicating a greater degree of central bank independence or a more stringent independent central bank. The study expects that central bank independence should have a negative effect on the lending behaviour of banks. The independent role of central banks enables them to monitor the opportunistic behaviour of managers, control excessive risk-taking and achieve optimal returns. This requires banks to reduce output (i.e. loans or lending) while raising prices (interest rates) to yield more returns, thus inducing a negative impact on bank lending behaviour (see, Behncke, 2022; Abuka *et al.* 2019; and Hussain & Bashir, 2019).

In addition, it might be argued that central bank independence may go against democratic ideals to have unelected central bankers make significant decisions about economic policy. In a different political context, the value of independent central banks may be questioned on the grounds that they may not actually deliver superior monetary policy outcomes – and therefore affect bank lending outcomes. For this reason, we expect that the impact of each regulatory independence on bank lending should differ across different electoral regimes (periods of election and periods without election).

In addition, for robustness checks, we assume that fluctuations of the political economy can cause the central bank to independently act pro-cyclically or counter cyclically ((see, Keita & Turcu, 2022; Mpatswe et al., 2011), leading to changes in bank lending behaviour. For this reason, we

introduce the lag and lead terms of individual regulatory independence into equation 2. We expect the dynamics of the individual regulatory independence, based on its lag and lead to have a significant impact on bank lending.

In equation 2, X is the set of control variables. All control variables are described in Appendix A.

3.1.2 Interactive effects

In this section, we seek to test whether regulatory independence of the central bank amplifies the relationship between electoral cycle and bank lending behaviour. Because electoral cycle and regulatory independence may have independent impact on bank lending behaviour, we also estimate an equation to capture the interactive effect between electoral cycle and regulatory independence. This is specified as:

$$Bank\ lending\ behaviour_{jt} = ß_1 Bank\ lending\ behaviour_{j,t-1} + \beta_0 Electoral\ cycle_{jt} + \sum_{l=1}^{2} \beta_l^{-} Electoral\ cycle_{j,t-l} + \sum_{l=1}^{2} \beta_l^{+} Electoral\ cycle_{j,t+l} + \sum_{i=1}^{3} ƀ_i Regulatory\ independence_{jt} + \sum_{q=1}^{p} \delta_q (Electoral\ cycle_{jt} * Regulatory\ independence_{jt}) + \sum_{q=1}^{p} \delta_q^{-} (Electoral\ cycle_{j,t-l} * Regulatory\ independence_{jt}) + \sum_{q=1}^{p} \delta_q^{+} (Electoral\ cycle_{j,,t+l} * Regulatory\ independence_{jt}) + \sum_{k=1}^{N} \alpha_k C_{jt} + \sigma_j + \theta_t + \mu_{jt} \quad (3)$$

where δ_q , $\delta_q^{-} and\ \delta_q^{+} : q = 1, \ldots, p$ denote the coefficients of the interaction terms between the respective electoral cycle variables (contemporaneous, lags and leads) and the individual central bank regulatory independence variables; $ß_1$ represents the coefficient of the lag of the dependent variable; β_0 is the regression coefficient of elections in current year; $\beta_l^{-} and\ \beta_l^{+} : l = 1, \ldots, 2$, represent the regression coefficients of a vector of the respective lags and leads of electoral cycle variables; $ƀ_i : l = 1, \ldots, 3$, represent the regression coefficients of a vector of three indicators capturing regulatory independence of the central bank; α_k, k = 1, …, N are the coefficients of the control variables (for vector C); σ_j is the individual country effects; and $\theta_t$is the time fixed effects and μ_{jt} is the composite error term.

Consistent with the interpretations of marginal effects by Asongu and Nwachukwu (2017), and Brambor *et al.* (2006) on the pitfalls surrounding interactive regressions, the impacts of electoral cycle on bank lending are interpreted as a conditional marginal impact. Thus, we observe the marginal impact of electoral cycle on bank lending when interacted with the individual regulatory independence variables.

For robustness test, we examine the net effects of electoral cycle and regulatory independence of the central bank on bank lending in a country with strong political institution and those in weak political institution.

From equation 3, the net effects are expressed below:

Net Effect =>

$$\frac{\partial Bank\ lending\ behviour_{j,t}}{\partial Electoral\ cycle_{jt}} = \beta_0 + \delta_q Regulatory\ independence_{jt} \quad (4)$$

where $\beta_0 : l = 1, \ldots, 4$, are the coefficient of electoral cycle and δ_q are the coefficients of the interaction terms.

3.2 Estimation Technique

To enhance reliability, efficiency and accuracy of the result, the study employs a number of techniques. We begin our empirical analysis by considering the number of lags of the variables which are adequate for capturing the dynamic completeness of our model. We test the optimal lag/lead length using the Akaike or Schwarz information criterion (AIC or BIC). The AIC helps to select the optimal model that gives the lowest values of the criteria, while the autocorrelation function (ACF) and Ljung-Box tests help us to quantitatively test for autocorrelation at multiple lags/leads jointly. We use a year lag for our variables in the model, based on the selection criterion, because introducing more lags or leads might lead to the likelihood of losing some degrees of freedom, produces inefficient parameter estimates or the standard errors of the regression coefficients, multicollinearity among the regressors, serial correlation in the error terms as well as misspecification errors. We treat all variables except the year dummies as endogenous to make room for the instruments of all those explanatory variables which are not strictly endogenous. This allows us the use of an additional lag at year 1 of all such variables as an instrument. It has been argued that the selection of instruments is based on unrealistic assumptions of data, leading to the use of instruments that are not totally exogenous (see, Aggarwal *et al.*, 2009). We employ the dynamic System Generalized Method of Moments (SGMM) Two-Step estimator with small sample size adjustments, forward orthogonal deviations and robust standard errors. This allows for the use of past values of the electoral cycle as instruments and thus, improving efficiency and reduces finite sample bias (see Arellano & Bover, 1995). The GMM resolves issues of unobserved heterogeneity that may arise between countries and endogeneity that may exist from bi-causality and mismeasurements. To correct endogeneity, the System GMM technique introduces more instruments for the lagged dependent variable and any other endogenous variable to drastically enhance efficiency, and it transforms the instruments to make them uncorrelated (exogenous) with fixed effects. The use of system GMM helps to generate its own instruments from the data. We

report Hansen and Sargan tests. Hansen J test is used to test the validity of Instruments: tests the null hypothesis of overall validity of instruments; failure to reject these null hypotheses gives support to the choice of the instruments. The Hansen test is distributed as chi-square under the null shows that the instruments are valid. The validity of the test shows that the null hypothesis that "the over-identifying instruments are valid" is accepted, (Roodman, 2009). We apply Windmeijer (2005) correction to produce robust standard errors because the two-step estimator has been shown to be biased without this correction. The error term of the model was tested for its assumptions of normality, autocorrelation and homoscedasticity. GMM can be used without having diagnostic tests because by its very nature it is designed to solve the problems of endogeneity, autocorrelation, and heteroscedasticity. In addition, the error term's test for autocorrelation and serial correlation is shown to test the null hypothesis that the error term's first and second orders are serially correlated. This means that failure to reject the null hypothesis that there is no second-order serial correlation implies that the original error term is serially uncorrelated and the moment conditions are correctly specified (that is, the value of AR (2) >0.05).

4. Empirical Results and Discussions

4.1 Presentation of results

The study presents and descriptive statistics and pairwise correlation coefficient matrix in the Appendix. In all the panel estimates presented in Tables 1, 2, 3, and 4, we fail to reject the null hypothesis of no autocorrelation for AR(2). Also, overidentifying restrictions were valid for all instruments. We begin by presenting the results on the effect of electoral cycles on bank lending behaviour.

4.1.1 Impact of election on bank lending behaviour

We have hypothesized that electoral cycles are important in determining the levels of bank lending behaviour. To test this, we introduce the electoral cycle variables into the regression to examine the impacts on bank lending. In Table 1, we present the estimates of the effect of electoral cycles on bank lending behaviour (see models 1-8). First, we run the regression with the contemporaneous election values but without the controls, and then, include the controls to obtain a clearer understanding. The model allows us to introduce the past lending behaviour of banks and indicators of political institutions into the model. In Table 1, we find that past lending behaviour of banks leads to lower lending behaviour in the subsequent year (models 1-8), and this is consistent throughout the results. This does not agree with the work of Ladime *et al.* (2013), who found a positive relationship between past years' lending behaviour and current lending behaviour of banks. Our negative relationship between previous years' lending and current lending behaviour, is possible because of the aggressive lending behaviour of banks that may persist in the credit market and induce a future reduction in the degree of lending. This agrees with Papademos (2009), who shows that the risk built up by banks in good times may result in future restrictions on the supply of loan through its impact on capital.

As explained earlier, political business cycle describes how the government influences the economy in order to secure re-election. In view of that, we introduce the contemporaneous, lag and lead values of election periods into the model and observe their impacts on bank lending beheviour. In Table 1, we find that the contemporaneous effect of electoral cycle on bank lending beheviour is positive and significant (models 2-8). This suggests that banks lend more during election periods. In support of the "opportunistic" model (Iddrisu & Turkson, 2020) and the work of Koetter and Popov (2021), both the government in power and the left-wing government would be more likely to increase social spending to increase their chances of winning the next-election, and hence be in higher need of bank funding. Similarly, past-election dummy has a positive impact on bank lending behaviour. We observe that the first lag of elections has a positive impact on bank lending – indicating that immediate past election periods (pre-election) increase bank lending (see Table 1). It is obvious that the positive impacts of electoral cycles on bank lending are greater during election periods compared to pre-election periods. In Table 1, we observe that the lead of election dummy in year 1 has a negative and significant effect on bank lending. The negative impact is magnified two years after election. This suggests that banks reduce lending immediately after election and the negative impact is persistent over the post-election era. This effect is intuitive and economically meaningful in the sense that banks reduce aggressive lending behaviour after elections and the reason could be attributed to a reduction of a build-up risks and perhaps the quest to build a resilient banking system from a sudden change in government. It also supports the work of Englmaiaer and Stowasser (2017) who show that total lending by local savings banks is substantially higher during an election year, and declines afterwards. Our results imply that the negative impact ofelection on bank lending behaviour persists before election years but dissipates after elections.

In general, our results confirm that electoral cycles are important in determining the levels of bank lending behaviour in different political business regimes. Specifically, it supports the hypothesis of Iddrisu and Turkson (2020) who provide evidence that political business cycles increase pricing behaviour of banks in Africa. However, it disagrees with the findings of Leon and Weill (2022) who show that firms are more credit constrained in election years and pre-election years as election exacerbate political uncertainty. Thus, our results are in line with the 'opportunistic behaviour theory' which argues that all governments and institutions, irrespective of their ideological orientation or political affiliation, apply expansionary policies ahead of elections in order to increase their recognition and brighten their re-election chances. Therefore, commercial banks lend more around periods of electoral cycles but tend to reduce lending in the long term over the political business cycle.

4.1.2 Impact of regulatory independence of central bank on bank lending behaviour

In this section, we test whether regulatory policy independence of the central bank has a significant effect on bank lending behaviours across electoral regimes. Table 2 shows the results of the individual regulatory independence of central bank (monetary, macro-prudential and CBI) on bank lending, and the impacts across different electoral regimes. For instance, in Table 2, we show that the response of bank lending to the individual regulatory independence of the central bank do not take effect instantaneously, and therefore, for robustness purposes, we introduce both the lag and

the lead values of the regulatory independence variables to capture the instantaneous or contemporaneous effects. In addition, it is possible that the bank lending impacts of the dynamics of the individual regulatory independence of the central bank, based on their lag and lead values – may vary across electoral events. For this reason, we split the sample into periods of election and periods without election. We do this to examine the extent to which the effect of the regulatory independence variables on bank lending differ across different electoral regimes.

In Table 2, for instance, we show the results for the full sample, as well as the split samples based on the respective periods of election and periods without election. In Table 2, we observe that the contemporaneous effect of monetary policy independence on bank lending was negative and significant (see, Model 9). This suggests that countries that enforce monetary policy autonomy of the central bank induce a negative impact on bank lending behaviour. This has its roots from the lens of monetary policy transmission mechanism, as argued by Friedman (1968), who explained that an increase in money supply leads to a decrease in the monetary policy rate, with a resultant increase in bank lending. Therefore, contractionary monetary policy independence, for instance, an increase in the monetary policy rates by the central banks, restricts the liquidity and the ability of banks to lend, thereby reducing credit expansion to borrowers and business firms, as supported by Ciccarelli *et al.*, 2015). This is in line with the findings of Modugu *et al.* (2022), Abuka *et al.* (2015, 2019) and Borio and Gambacorta (2017) who supported the claim that an increase in monetary policy rates, decreases bank lending behaviours in developing countries. After introducing the lag and forecast/forward values of monetary policy independence, we observe that the negative impact is reduced for pre-implementation of monetary policy independence while it is enhanced for the post implementation of monetary policy independence (see model 9). This is because the pre-implementation of policy reforms relaxes the level at which bank lending is reduced. It is clear from our results that electoral cycles influence the extent of impact of monetary policy dynamics on bank lending. For instance, the negative impacts of monetary policy independence, its lag and lead values on bank lending are lower in periods without election (model 10) compared to periods with election (model 11).

In terms of macro-prudential independence, Table 2 shows that macro-prudential independence action of the central bank has a positive and significant effect on bank lending behaviour (see, model 12). Macro-prudential policy actions by the central bank offer banks the incentive to maintain capital in their buffer and reserves, and thus, banks have to increase their level of capital in response to any increase in risk. According to the regulatory hypothesis, a positive relationship exists between the capital level and the risk-taking incentives. Tightening of the macro-prudential policy independently by the central bank raises the stock of capital in banks' reserves and consequently, increases the ability of banks to create loans. Therefore, our findings suggest that stringent macro-prudential autonomy of the central bank increases bank lending behaviour. This agrees with a recent study by Hodula and Ngo (2021) who provided a robust estimates that a macro-prudential policy tightening leads to an increase in shadow bank lending. While the use of macro-prudential measures could lead to higher capitalization and make the financial sector more resilient and reduce its risk exposure. This contradicts the findings of Cehajic and Kosak (2022), who show that the implication could mean restricted lending to firms, especially smaller firms with financing options and considerable reliance on bank credit. We show that the contemporaneous

and lag values of macro-prudential independence positively affect bank lending but lead values of macro-prudential independence increases bank lending (see Model 12). This suggests that bank lending reduces substantially when countries implement macro-prudential independent action in the future. Table 2 shows that macro-prudential independence increases bank lending in periods without election while it reduces bank lending in election periods (Models 13 and 14). The positive impact of the lag and lead values of macro-prudential independence on bank lending in periods without election (model 13) is relatively greater compared to periods of election (model 14). The implication is that banks are more skeptical to take risk during election periods, despite the degree of compliance to macro-prudential standards.

In Table 2 (Model 15), central bank independence and its lag have a positive and significant effect on bank lending behaviour. Our findings support the claim by Agoba *et al.* (2020) that central bank independence promotes access to credit by the private sector by reducing inflation (price stability). However, the positive impacts are reversed when countries implement central bank independence in the future or in the subsequent year. This implies that countries that allow the central bank to set independent policy instruments in the long term allow them to monitor the opportunistic behaviour of managers in the credit market, generate optimal returns that gives them greater power to reduce lending. In addition, the positive impact of the central bank independence, its lag and lead values on bank lending in periods without election (model 16) is reduced in periods of election (model 17). The implication is that the dynamics of central bank independence policies induce an increase in bank lending behaviours across different electoral regimes, hence, require effective regulatory measures by reserve banks.

4.1.3 Interactive effects of electoral cycle and regulatory independence of central bank on bank lending

It is also possible that central bank wants to signal that banks' lending patterns during elections may not yield desirable outcome. In view of that, we test whether regulatory policy independence is important in shaping the effect of electoral cycles on bank lending behaviours. Thus, we include the interaction of electoral cycles with individual regulatory independence of the central bank. We discuss the marginal effects from the interactions between the electoral cycles and the individual regulatory independence of the central bank. Consistent with Brambor *et al.* (2006) on pitfalls of interactive regressions, we cannot establish policy implications exclusively on marginal effects. Hence, we interpret the marginal effects based on the interaction terms, as supported by Ghosh (2020, 2022), and also by net effects (overall impact), as supported by Asongu and Nwachukwu (2016). In Table 3, the unconditional effects of electoral cycles show that bank lending is increased before election and the extent of the increment is greater during election years. However, bank lending declines after an election and the reductive effect falls in the subsequent years after election.

The independent regulatory policies of the central bank are important toolkits for shaping the behaviours of bank lending in electoral cycles. For instance, in Table 3, the unconditional effect of elections on bank lending is 0.0627 while the conditional effect (coefficient of interaction term between electoral cycle and monetary policy independence) is -0.939 (see model 18). This means that the marginal effect of electoral cycle is negative when interacted with monetary policy independence. For better interpretation that is consistent with Brambor et al. (2006), we compute the net effect of electoral cycle to be equal to -0.3674 [0.0627 + (-0.939 x mean of monetary policy independence)] when the mean of monetary policy independence is 0.458. Thus, the negative net effect suggests that monetary policy independence alters the positive impact of election on bank lending into a negative. Similarly, based on the marginal effect (coefficient of the interaction term between the lag values of electoral cycle and monetary policy independence), the positive impact of pre-election (first lag of electoral cycle) on bank lending is reduced when interacted with monetary policy independence while the negative impact of the lead values of electoral cycle on bank lending is enhanced when interacted with monetary policy independence.

In Table 3, the unconditional effect of elections on bank lending is 0.169 while the conditional effect (coefficient of interaction term between electoral cycle and macro-prudential independence) is -0.101 (see Model 19). This means that the marginal effect of electoral cycle is negative when interacted with macro-prudential policy independence. For better interpretation, the computation of the net effect (0.1513) of electoral cycle is less positive compared to the unconditional effect. This suggests that macro-prudential independence reduces the positive impact of election on bank lending. Similarly, based on the marginal effect (i.e., the coefficient of the interaction term between the lag values of electoral cycle and macro-prudential independence), the positive impact of pre-election (first lag of electoral cycle) on bank lending is altered when interacted with macro-prudential independence. In addition, the negative impact of the lead values of electoral cycle (in year 1) on bank lending is reversed to positive when interacted with macro-prudential independence, but the negative impact of the lead values of electoral cycle (in year 2) on bank lending is enhanced when interacted with macro-prudential independence.

In Table 3, the unconditional effect of elections on bank lending is 0.153 while the conditional effect (coefficient of interaction term between electoral cycle and central bank independence) is -0.0283 (see model 20). This means that the marginal effect of electoral cycle is negative when interacted with central bank independence. For better interpretation, the computation of the net effect (0.1376) of electoral cycle is less positive compared to the unconditional effect. This suggests that central bank independence reduces the positive impact of election on bank lending. Similarly, based on the marginal effect (i.e., the coefficient of the interaction term between the lag values of electoral cycle and central bank independence), the positive impact of pre-election (first lag of electoral cycle) on bank lending is reduced when interacted with central bank independence while the negative impacts of the lead 1 and lead 2 values of electoral cycle on bank lending are reduced and enhanced respectively when both are interacted with central bank independence.

It can be deduced from the interactions that countries with strong monetary and macro-prudential autonomy are more likely to tighten regulations within electoral cycles and during economic booms when credit growth are high (Funke *et al*., 2016; Antoniades & Calomiris, 2018; Doerr *et*

al., Voth, 2018; Gyongyosi & Verner, 2019). Regulatory policy is formulated by governments to impose restrictions and controls on certain activities or behaviour while regulatory independence is a law that establishes a regulator as independent authority to control certain behaviours of the banking sector (Lanneau, 2021). Although elections send good signal to commercial banks to lend more to the government in power and other political parties in order to increase their chances of winning an election, for countries with strong independent central bank regulatory policy, the central bank or independent regulatory authority may impose restrictions on banks' lending behaviours to reduce potential financial losses during election periods. This explains why our overall impacts, based on the net effects, shows that independent central bank regulatory policies tame the nexus between electoral cycle and bank lending.

In general, our results confirm that independent central bank regulatory policies (monetary, macro-prudential and central bank independence) dampen the positive effects of elections on bank lending before and during elections while they amplify the reductive effects of electoral cycle on bank lending immediately and years after the election.

4.2 Robustness results: Interactive effects across strong and weak political institutions

Our earlier findings indicate that banks reduce their lending in electoral cycles when interacted with the individual regulatory independence of the central bank. It does not show the overall impacts of this behaviour across political institutions. The study shows evidence of the net effect of elections on bank lending at levels of the regulatory independence indexes across the political institutions. Following Brambor *et al.* (2006) and Asongu and Nwachukwu (2016), we compute the net effects. In Table 4, for instance, in models 21 and 24 respectively, it can be deduced that for countries with strong political institutions, the positive impact of elections on bank lending is reduced at increasing levels (tightening) of independent monetary policy of the central bank while for countries with weak political institutions, the positive impact of elections on bank lending is magnified at increasing levels (tightening) of independent monetary policy of the central bank.

Similarly, in Table 4, for countries with a weak political institution, the net effect of electoral cycle is more positive at increasing levels (tightening) of macro-prudential independence (see model 22) but for countries with strong political institutions, the net effect is less positive at increasing levels (tightening) of macro-prudential independence (see models 25). In Table 4 (model 23), the net effect of electoral cycle in countries with weak political institutions is more positive at increasing levels of central bank independence than the net effect for countries with strong political institutions.

Although, elections generally send good signals to governments, political institutions, the financial sector and regulators about the local environment (Agbloryor, 2019), for countries with poor political institutions, political interference may hinder or restrict the independent function of central banks – which may induce greater lending behaviours of banks. Thus, central bank

regulatory policy independence magnify the extent to which banks on-lend during electoral events. This confirms our results that, banks in countries with strong political institutions are able to reduce their lending activities at greater levels of regulatory independence index of the central bank compared to countries in weak political institutions. As a policy implication, elections can consolidate the gains of bank lending from independent central bank regulatory policies. However, the corresponding low net effects imply that democratic system and electoral standards need to be improved in order to accelerate the underlying gains in the development of independent central bank regulatory settings.

5. Conclusion and policy implications

The aim of the study is to examine the effect of regulatory independence of the central bank in shaping the impact of electoral cycles on bank lending behaviour in Africa. By employing the dynamic system Generalized Method of Moments (SGMM) Two-Step estimator for a panel dataset of 54 African countries over the period, 2004-2022, the study found that banks lend more when elections are getting closer but the total lending by banks is substantially higher during election years, and declines afterwards. The study shows that countries that enforce monetary policy autonomy of the central bank induce a negative impact on bank lending behaviour while those that apply strong macro-prudential independent action and central bank independence reduce lending substantially in the long term. The study provides evidence to empirically support that monetary, macro-prudential and central bank independence of the central dampen the positive effect of elections on bank lending around election years while they amplify the reductive effects on bank lending immediately and in periods after the election. In addition, banks in countries with strong political institutions are able to reduce their lending activities in stringent regulatory independence of the central bank compared to countries in weak political institutions.

Further, although we do not test this directly, the results suggest that incumbents choose good policies (monetary policy, etc.), contrary to the independent functions of central bank, in order to enhance their chances of success. Consequently, the environment for bank lending activities is likely to be friendlier during elections, leading to greater lending by banks. The study has policy implications in the sense that government, policymakers and political institutions should come up with appropriate policies that controls political influence, and the actions of banks to lend excessively during elections. Thus, efforts of making elections an instrument for deepening democratic process of a country will help reduce the country's risk profile, and hence control the level of bank lending around electoral cycles. Based on that, future studies should consider the threshold point at which banks can lend during election years.

In addition, policymakers should put forward the right policy mix between the individual regulatory policies of independent central bank to control bank lending behaviours around election periods. Thus, these policies should be well defined to reflect a tightening or loosening targeted policy instrument around electoral cycles, and during good times and bad times. Further, lending policies have more immediate response and thus are politically sensitive from independent central bank's regulatory policies in a country with strong political institution compared to those in a weak

political institution. Hence, there is a wake-up call for countries with weak independent central bank policy and political institutions to strengthen their independent regulatory policy policies. This will enable them better strategize to yield a desirable outcome of bank lending to the real economy during election years.

The findings in this study obviously leave space for future research, especially as it pertains to assessing if the established findings withstand empirical scrutiny in other developing regions of the world. Consequently, it would should be interesting for future study to consider other variables that capture the institutional architecture of the micro- and macro-prudential policies, the degree of independence of prudential authorities, and whether the central bank is involved or not in the prudential supervision of the banking sector and how these measures affect bank lending. Moreover, owing to data availability constraints at the time of the study, digital currency variables are not involved and hence, considering these variables in future studies is worthwhile.

References

Abor, J. Y., Agoba, A. M., Mumuni, Z., & Yawson, A. (2022). Monetary Policy, Central Banks' Independence, and Financial Development in Africa. In *The Economics of Banking and Finance in Africa* (pp. 227-267). Palgrave Macmillan, Cham.

Abuka, C., Alinda, R.K., Minoiu, C., Peydro, J.-L. and Presbitero& Presbitero, A.F. (2019), "Monetary policy and bank lending in developing countries: loan applications, rates, and real effects", *Journal of Development Economics*, Vol. 139, pp. 185-202,

Agarwal, S., Morais, B., Ruiz Ortega, C., & Zhang, C. (2016). The political economy of bank lending: evidence from an emerging market. *World Bank Policy Research Working Paper*, (7577).

Agbloyor, E. K. (2019). Foreign direct investment, political business cycles and welfare in Africa. *Journal of International Development*, *31*(5), 345-373.

Agoba, A. M., Abor, J. Y., Osei, K. A., & Sa-Aadu, J. (2020). Do Independent Central Banks Exhibit Varied Behaviour in Election and Non-Election Years?: The Case of Fiscal Policy in Africa. *Journal of African Business*, *21*(1), 105-125.

Agoba, A. M., Abor, J., Osei, K. A., & Sa-Aadu, J. (2017). Central bank independence and inflation in Africa: The role of financial systems and institutional quality. *Central Bank Review*, *17*(4), 131-146.

Akinci, O., & Olmstead-Rumsey, J. (2018). How effective are macroprudential policies? An empirical investigation. *Journal of Financial Intermediation*, *33*, 33-57.

Ali, F., Saleem, A., Zahid, R.M.A., Barczi, J., &Sagi, J. (2022). Lending behaviours of banks during elections and business cycles: one-step system gmm approach. *Academy of Accounting and Financial Studies Journal*, 26(5), 1-16.

Altunbas, Y., Binici, M., & Gambacorta, L. (2018). Macroprudential policy and bank risk. *Journal of International Money and Finance*, *81*, 203-220.

Amidu, M. (2006). The link between monetary policy and banks lending behaviour: the Ghanaian case. *Banks & bank systems*, (1, № 4), 38-48.

Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of econometrics*, *68*(1), 29-51.

Arnone, M., Laurens, B. J., Segalotto, J. F., & Sommer, M. (2009). Central bank autonomy: Lessons from global trends. *IMF Staff Papers*, *56*(2), 263-296.

Asongu, S. A., & Nwachukwu, J. C. (2016). The role of governance in mobile phones for inclusive human development in Sub-Saharan Africa. *Technovation*, *55*, 1-13.

Asongu, S., & Nwachukwu, J. C. (2017). Mobile phones in the diffusion of knowledge and persistence in inclusive human development in Sub-Saharan Africa. *Information Development*, *33*(3), 289-302.

Auer, R., Matyunina, A., & Ongena, S. (2022). The countercyclical capital buffer and the composition of bank lending. *Journal of Financial Intermediation*, 100965.

Ayyagari, M., Beck, T., &Peria, M. S. M. (2017). Credit Growth and Macroprudential Policies: Preliminary Evidence on the Firm Level. In B. for International Settlements (Ed.), Financial Systems and the Real Economy, volume 91 of BIS Papers chapters (pp. 15–34). Bank for International Settlements.

Azzimonti, M. (2019. November). Partisan conflict, news, and investors' expectations' (Working Paper No. 2019-07). Stony Brook University.

Balls, E., Howat, J., & Stansbury, A. (2018). Central Bank Independence Revisited: After the financial crisis, what should a model central bank look like?M-RCBG Associate Working Paper Series | No. 87.

Behncke, S. (2022). Effects of macroprudential policies on bank lending and credit risks. *Journal of Financial Services Research*, 1-25.

Bertay, A.C., Demirgüç-Kunt, A., & Huizinga, H. (2015). Bank ownership and credit over the business cycle: Is lending by state banks less procyclical?*Journal of Banking & Finance,50*, 326-339.

Bircan, Ç., & Saka, O. (2019). Elections and economic cycles: what can we learn from the recent Turkish experience?. https://openaccess.city.ac.uk/id/eprint/26785/1/ (Accessed: 07/01/2022).

Bircan, Ç.,& Saka, O. (2018). *Political lending cycles and real outcomes: evidence from Turkey*. EBRD and LSE working paper. https://www.qeh.ox.ac.uk/sites/www.odid.ox.ac.uk/files/Bircan_Saka-Political%20lending%20cycles%20in%20Turkey.pdf (Accessed: 07/01/2022).

BIS (2017). Macroprudential frameworks, implementation and relationship with other policies. Number 94 in BIS Papers. Bank for International Settlements. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3101175 (Accessed: 07/01/2022).

Block, S. A. (2002). Political Business Cycles, Democratization, and Economic Reform: The Case of Africa. Journal of Development Economics, 67(1), 205 – 228.

Bodenstein, M., Guerrieri, L., &LaBriola, J. (2019). Macroeconomic policy games. *Journal of Monetary Economics*, *101*, 64-81.

Borio, C., & Gambacorta, L. (2017). Monetary policy and bank lending in a low interest rate environment: diminishing effectiveness?. *Journal of Macroeconomics*, *54*, 217-231.

Brambor, T., Clark, W. R., & Golder, M. (2006). Understanding interaction models: Improving empirical analyses. *Political analysis*, *14*(1), 63-82.

Brei, M., & Schclarek, A. (2013). Public bank lending in times of crisis. *Journal of financial stability*, *9*(4), 820-830.

Buch, C., Vogel, E., &Weigert, B. (2018). Evaluating macroprudential policies. ESRB: Working Paper Series No. 2018/76 (Accessed: 07/01/2022).

Carrillo, J. A., Mendoza, E. G., Nuguer, V., &Roldán-Peña, J. (2021). Tight money-tight credit: coordination failure in the conduct of monetary and financial policies. *American Economic Journal: Macroeconomics*, *13*(3), 37-73.

Carvalho, D. (2014). The real effects of government-owned banks: Evidence from an emerging market. *The Journal of Finance*, *69*(2), 577-609.

Cehajic, A. and & Kosak, M. (2021). Tightening and Loosening of Macroprudential Policy, its Effects on Credit Growth and Implications for the COVID-19 Crisis. Economics and Business Review; 23:207e233.

Cehajic, A. and & Kosak, M. (2022). Bank lending and small and medium-sized enterprises' access to finance – effects of macroprudential policies. *Journal of international money and finance.* 1-23.

Chen, Y. S., Shen, C. H., & Lin, C. Y. (2014). The benefits of political connection: Evidence from individual bank-loan contracts. *Journal of Financial Services Research*, *45*(3), 287-305.

Ciccarelli, M., Maddaloni, A., &Peydró, J. L. (2015). Trusting the bankers: A new look at the credit channel of monetary policy. *Review of Economic Dynamics*, *18*(4), 979-1002.

Cohen, B. H., & Edwards, G. (2017). The new era of expected credit loss provisioning. *BIS Quarterly Review, March*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2931474 (Accessed: 07/01/2022).

Cukierman, A. (2008). Central bank independence and monetary policymaking institutions - Past, present and future. European Journal of Political Economy 24, 722-736.

Cukierman, A. (2013). Regulatory Reforms and the Independence of Central Banks and Financial Supervisors. In E. G. Morten Balling, States, Banks and the Financing of the Economy: Monetary Policy and Regulatory Regimes (pp. 121-134). Vienna: SUERF.

Czaplicki, M. (2022). Measuring the restrictiveness of (macro) prudential policy: the case of bank capital regulation in Poland. *Journal of Banking Regulation*, *23*(3), 322-338.

De Waal, A., Gupta, R., & Jooste, C. (2018). South Africa's monetary policy independence: evidence from a Global New-Keynesian DSGE model. *Applied economics letters*, *25*(12), 840-846.

Dinç, I. S. (2005). Politicians and banks: Political influences on government-owned banks in emerging markets. *Journal of financial economics*, *77*(2), 453-479.

Doumpos, M., Gaganis, C., & Pasiouras, F. (2015). Central bank independence, financial supervision structure and bank soundness: An empirical analysis around the crisis. *Journal of Banking & Finance*, *61*, S69-S83.

Dreher, A., Lang, V. F., & Richert, K. (2019). The political economy of International Finance Corporation lending. *Journal of Development Economics*, *140*, 242-254.

Duff, A. W. (2014). Central bank independence and macroprudential policy: A critical look at the US financial stability framework. *Berkeley Bus. LJ*, *11*, 183.

Edge, R. M., & Liang, N. (2019). New financial stability governance structures and central banks. SSRN Working Paper.

Englmaier, F., & Stowasser, T. (2017). Electoral cycles in savings bank lending. *Journal of the European Economic Association*, *15*(2), 296-354.

Epure, M., Mihai, I., Minoiu, C., &Peydró, J.-L. (2017). Household Credit, Global Financial Cycle, and Macroprudential Policies: Credit Register Evidence from an Emerging Country. Working Papers 1006.

Fang, H., Li, Z., Xu, N., & Yan, H. (2018). *In the shadows of the government: Relationship building during political turnovers* (No. w25300). National Bureau of Economic Research.

Farhi, E., &Werning, I. (2014). Dilemma not trilemma? Capital controls and exchange rates with volatile capital flows. *IMF Economic Review*, *62*(4), 569-605.

Friedman, H. (1968). Magnitude of experimental effect and a table for its rapid estimation. *Psychological bulletin*, *70*(4), 245.

Funashima, Y. (2016). The Fed-induced political business cycle: Empirical evidence from a time–frequency view. *Economic Modelling*, *54*, 402-411.

Fungáčová, Z., Schoors, K. J., Solanko, L., & Weill, L. (2020). Political cycles and bank lending in Russia. *Available at SSRN 3764763*.

Gabriel, V. J., Lazopoulos, I., & Lima, D. (2022). Institutional Arrangements and Inflation Bias: A Dynamic Heterogeneous Panel Approach. *Journal of Money, Credit and Banking*.

Gambacorta, L., & Murcia, A. (2017). The impact of macroprudential policies and their interaction with monetary policy: an empirical analysis using credit registry data.

Gerschenkron, A. (2015). Economic backwardness in historical perspective (1962).*Cambridge MA*.

Ghosh, S. (2022). Elections and provisioning behaviour: Assessing the Indian evidence. *Economic Systems*, *46*(1), 100943.

Gyeke-Dako, A., Agbloyor, E. K., Agoba, A. M., Turkson, F., & Abbey, E. (2022). Central Bank Independence, Inflation, and Poverty in Africa. *Journal of Emerging Market Finance*, *21*(2), 211-236.

Hodula, M. & Ngo, N.A. (2021). Does Macroprudential Policy Leak? Evidence from Non-Bank Credit Intermediation in EU Countries. Czech National Bank, Working Paper Series — —— 5/2021.

Hussain, M., & Bashir, U. (2019). Impact of monetary policy on bank lending: does market structure matter?. *International Economic Journal*, *33*(4), 620-648.

Iddrisu, A. G., &Ebo Turkson, F. (2020). Political business cycles, bank pricing behaviour and financial inclusion in Africa. *Cogent Economics & Finance*, *8*(1), 1762286.

Jeanneney, S. G. (2006). Independence of the Central Bank of West African States: An Expected Reform? *Revue deconomie du developpement*, *14*(1), 45-77.

Jiménez, G., Ongena, S., Peydró, J.-L., &Saurina, J. (2017). Macroprudential Policy, Countercyclical Bank Capital Buffers, and Credit Supply: Evidence from the Spanish Dynamic Provisioning Experiments. Journal of Political Economy, 125(6), 2126–2177.

Jones, E. (2022). Do central bankers dream of political union? From epistemic community to common identity. In *Constructing the EU's Political Identity* (pp. 71-88). Palgrave Macmillan, Cham.

Kakes, J., & Sturm, J. E. (2002). Monetary policy and bank lending: Evidence from German banking groups. *Journal of Banking & Finance*, *26*(11), 2077-2092.

Kanga, D. (2021). Banks and Monetary Policy Transmission in the West African Economic and Monetary Union-Research Paper. https://www.africaportal.org/publications/banks-and-monetary-policy-transmission-west-african-economic-and-monetary-union-research-paper/ ((Accessed: 07/01/2022).

Keita, K., & Turcu, C. (2022). Promoting Counter-Cyclical Fiscal Policy: Fiscal Rules Versus Institutions. *Comparative Economic Studies*, 1-46.

Klein, M. W., &Shambaugh, J. C. (2015). Rounding the corners of the policy trilemma: sources of monetary policy autonomy. *American Economic Journal: Macroeconomics*, *7*(4), 33-66.

Klüh, U., & Urban, J. (2022). *Independently green? An integrated strategy for a transformative ECB* (No. 9). ZNWU Discussion Paper.

Koetter, M., & Popov, A. (2021). Political cycles in bank lending to the government. *The Review of Financial Studies*, *34*(6), 3138-3180.

Kohn, D. (2015). Implementing macroprudential and monetary policies: The case for two committees. Speech at the Federal Reserve Board's Boston Conference.

Krishnamurti, D., & Lee, Y. C. (2014). *Macroprudential policy framework: a practice guide*. World Bank Publications.

Kumar, N. (2020). Political interference and crowding out in bank lending. *Journal of Financial Intermediation*, *43*, 100815.

Martinez-Resano, J. R. (2004). Central bank financial independence. *Available at SSRN 3937440*.

Masciandaro, D., & Romelli, D. (2018). Central bankers as supervisors: Do crises matter? European Journal of Political Economy, 52, 120-140.

Meriläinen, J.M. (2016). Lending growth during the financial crisis and the sovereign debt crisis: The role of bank ownership type. *Journal of International Financial Markets, Institutions and Money*,*41*, 168-182.

Meuleman, E., & Vander Vennet, R. (2020). Macroprudential policy and bank systemic risk. *Journal of Financial Stability*, *47*, 100724.

Micco, A., &Panizza, U. (2006). Bank ownership and lending behaviour. *Economics letters*, *93*(2), 248-254.

Mishra, P., Montiel, P., Pedroni, P., & Spilimbergo, A. (2014). Monetary policy and bank lending rates in low-income countries: Heterogeneous panel estimates. *Journal of Development Economics*, *111*, 117-131.

Modugu, K.P. and Juan Dempere, J. (2022). Monetary policies and bank lending in developing countries:evidence from Sub-Sahara Africa. *Journal of Economics and Development, 24(3), 217-229.*

Mosley, P., & Chiripanhura, B. (2016). The African political business cycle: Varieties of experience. *The Journal of Development Studies*, *52*(7), 917-932.

Mpatswe, M. G. K., Tapsoba, M. S. J. A., & York, M. R. C. (2011). *The cyclicality of fiscal policies in the CEMAC region*. International Monetary Fund.

Müller, K. (2019). Electoral cycles in macro-prudential regulation. ESRB: Working Paper Series No. 2019/106

Mwankemwa, L. P., & Mlamka, B. (2022). Effects of Monetary Policy on Bank's Credit Dynamics in Tanzania. *African Journal of Economic Review*, *10*(2), 13-39.

Nguyen, N. T., Wereley, S. T., & Shaegh, S. A. M. (2019). *Fundamentals and applications of microfluidics*. Artech house.

OECD (2014), *The Governance of Regulators*, OECD Best Practice Principles for Regulatory Policy, OECD Publishing, Paris.

OECD (2017), *Creating a Culture of Independence: Practical Guidance Against Undue Influence*, The Governance of Regulators, OECD Publishing, Paris. Page 6.

Ozili, P. K. (2019). Bank loan loss provisioning during election years: cross-country evidence. *International Journal of Managerial Finance*, 16(4), 413-431.

Paoli, B. D., & Paustian, M. (2017). Coordinating monetary and macroprudential policies. *Journal of Money, Credit and Banking*, *49*(2-3), 319-349.

Papademos, L. (2009). ECB Financial Stability Review June 2009–Opening remarks.

Rodriguez, J., & Santiso, J. (2008). Banking on democracy: the political economy of international private bank lending in emerging markets. *International Political Science Review*, *29*(2), 215-246.

Romelli, D. (2022). The political economy of reforms in central bank design: evidence from a new dataset. *Economic Policy*, *37*(112), 641-688.

Sapienza, P. (2004). The effects of government ownership on bank lending. *Journal of financial economics*, *72*(2), 357-384.

Satragno, L. (2022). *Monetary Stability as a Common Concern in International Law: Policy Cooperation and Coordination of Central Banks* (p. 228). Brill.

Sever, C., & Yücel, E. (2022). The effects of elections on macroprudential policy. Journal of Comparative Economics, 50(2), 507-533.

Shleifer, A., &Vishny, R.W. (1994). Politicians and firms. *The Quarterly Journal of Economics*,*109*(4), 995-1025.

Shrum, W., Chompalov, I., &Genuth, J. (2001). Trust, conflict and performance in scientific collaborations. *Social studies of science*, *31*(5), 681-730.

Strong, C. O. (2021). Political influence, central bank independence and inflation in Africa: A comparative analysis. *European Journal of Political Economy*, *69*, 102004.

Thomson, I. (2020). A Literature Review on Regulatory Independence in Canada's Energy Systems: Origins, Rationale and Key Features. University of Ottawa, https://ruor.uottawa.ca/handle/10393/42482 (Accessed: 07/01/2022).

Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of financial economics*, *105*(3), 581-606.

Yun, Y., & Cho, B. (2022). Does monetary policy affect bank lending to households and firms differently?. *Economic Modelling*, *109*, 105783.

Table 1: Impacts of Electoral cycles on Bank Lending Behaviour

VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Bank lending$_{t-1}$	-1.272***	-2.809***	-2.812***	-2.769***	-2.811***	-2.798***	-2.777***	-2.801***
	(0.199)	(0.654)	(0.638)	(0.676)	(0.638)	(0.626)	(0.677)	(0.599)
Electoral cycle $_{t-1}$		**0.0263*** **	**0.0274*** **	**0.0249*** **	**0.0264*** **	**0.0236*** **	**0.0260*** **	**0.0311*** **
		(0.00901)	**(0.00903)**	**(0.00906)**	**(0.00904)**	**(0.00905)**	**(0.00906)**	**(0.00902)**
Electoral cycle	**0.235*** **	**0.0516*** **	**0.0505*** **	**0.0534*** **	**0.0518*** **	**0.0544*** **	**0.0527*** **	**0.0480*** **
	(0.0854)	**(0.00976)**	**(0.00978)**	**(0.00981)**	**(0.00979)**	**(0.00990)**	**(0.00983)**	**(0.00973)**
Electoral cycle $_{t+1}$		**-0.00107*** **	**-0.00122*** **	**-0.00122*** **	**-0.00103*** **	**-0.00108*** **	**-0.00109*** **	**-0.00106*** **
		(0.000257)	**(0.000303)**	**(0.000303)**	**(0.000264)**	**(0.000264)**	**(0.000255)**	**(0.000255)**
Electoral cycle $_{t+2}$		**-0.0585*** **	**-0.0580*** **	**-0.0598*** **	**-0.0586*** **	**-0.0599*** **	**0.0587*** **	**0.0540*** **
		(0.0110)	**(0.0110)**	**(0.0111)**	**(0.0111)**	**(0.0110)**	**(0.0111)**	**(0.0110)**
Banking crisis		-0.0398**	-0.0426***	-0.0383**	-0.0327**	-0.0434***	-0.0310*	-0.0341**
		(0.0164)	(0.0164)	(0.0162)	(0.0160)	(0.0166)	(0.0160)	(0.0169)
Bank concentration		-6.20e-05***	-6.56e-05***	-6.32e-05***	-6.85e-05***	-5.65e-05***	-6.91e-05***	-4.62e-05**
		(1.70e-05)	(1.66e-05)	(1.70e-05)	(1.65e-05)	(1.67e-05)	(1.65e-05)	(1.80e-05)
Credit risk		-0.000270	-0.000242	-0.000213	-0.000321*	-0.000152	-0.000261	-0.000360*
		(0.000185)	(0.000185)	(0.000186)	(0.000186)	(0.000186)	(0.000186)	(0.000184)
Foreign entry		0.0356	0.0399*	0.0445*	0.0459*	0.0293	0.0564**	0.0208
		(0.0240)	(0.0235)	(0.0234)	(0.0244)	(0.0235)	(0.0235)	(0.0248)
inflation		-0.132***	-0.0260***	-0.0260***	-0.118***	-0.0718***	-0.125***	-0.0766***
		(0.0117)	(0.00808)	(0.00808)	(0.0111)	(0.0101)	(0.0113)	(0.0103)
Real GDP per capita		0.0158***	0.0159***	0.0156***	0.0155***	0.0159***	0.0155***	0.0161***
		(0.00157)	(0.00154)	(0.00158)	(0.00158)	(0.00159)	(0.00157)	(0.00158)
Political institutions		0.0199***						
		(0.00593)						
Control of corruption			0.0235***					
			(0.00632)					
G-Effectiveness				0.0157**				
				(0.00623)				
Pol. Stability-Violence					0.00675*			
					(0.00398)			
Regulatory quality						0.0270***		

						(0.00558)		
Rule of law							0.00351	
							(0.00570)	
Voice and accountability								0.0264***
								(0.00533)
Time Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	14.15	0.496***	0.495***	0.482***	0.479***	0.500***	0.465***	0.520***
	(10.86)	(0.0260)	(0.0251)	(0.0251)	(0.0266)	(0.0253)	(0.0251)	(0.0271)
Observations	775	775	775	775	775	775	775	775
Number of Group	37	46	45	48	48	48	46	45
Instrument	22	27	26	23	23	23	27	26
AR(1)	-1.61	-3.29	-3.33	-3.38	-3.50	-3.27	-3.29	-3.33
z(p value)	(0.09)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
AR(2)	3.4	0.65	0.68	0.63	0.65	0.61	0.65	0.68
z(p value)	(0.454)	(0.517)	(0.509)	(0.499)	(0.517)	(0.491)	(0.517)	(0.509)
Sargan Test (p-value)	15.93	14.47	15.46	15.90	20.67	22.30	14.47	18.41
	(0.145)	(0.208)	(0.162)	(0.145)	(0.393)	(0.542)	(0.208)	(0.763)
Hansen Test	5.20	21.13	7.706	5.15	5.07	5.20	9.067	12.12
Chi2 (p) value)	(0.270)	(0.142)	(0.565)	(0.272)	(0.397)	(0.270)	(0.431)	(0.335)
Fisher	960.99***	1985.51***	2160.99***	2808.65***	2156.63***	2160.99***	1985.51***	2160.99***

Table 1 shows the effect of electoral cycles on bank lending behavior. All variables are described in Appendix A.

Table 2: Impacts of central bank regulatory independence on bank lending across different electoral regimes

	Monetary policy independence			Macro-prudential independence			Central bank Independence		
	Full sample	Periods without election	Election periods	Full sample	Periods without election	Election periods	Full sample	Periods without election	Election periods
VARIABLES	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16	Model 17
Bank lending $_{t-1}$	-0.765***	-1.229***	0.446**	-0.654***	-0.770**	0.698**	-0.679**	-0.845***	0.512*
	(0.198)	(0.401)	(0.165)	(0.136)	(0.365)	(0.281)	(0.271)	(0.143)	(0.298)
Bank lending $_{t-2}$	-0.0714***	-0.0650***	0.101***	-0.0756***	-0.0532***	0.0979***	-0.0808***	-0.0165***	0.00747***
	(0.0149)	(0.0133)	(0.0145)	(0.0139)	(0.0136)	(0.0135)	(0.0126)	(0.00416)	(0.00186)
Monetary policy independence $_{t-1}$	**-0.00792****	**-0.00251***	**-0.00280****						
	(0.00384)	**(0.00145)**	**(0.00124)**						
Monetary policy independence	**-0.0266*****	**-0.0273*****	**-0.134*****						
	(0.00919)	**(0.00996)**	**(0.0159)**						
Monetary policy independence $_{t+1}$	**-0.0339*****	**-0.0303****	**-0.117****						
	(0.0108)	**(0.0121)**	**(0.0561)**						
Macro-prudential independence $_{t-1}$				**0.0160*****	**0.00873*****	**-0.0958***			
				(0.00490)	**(0.00244)**	**(0.0491)**			
Macro-prudential independence				**0.0319*****	**0.0368*****	**-0.112****			
				(0.00689)	**(0.00703)**	**(0.0556)**			
Macro-prudential independence$_{t+1}$				**-0.0985*****	**0.127*****	**0.0104*****			
				(0.0137)	**(0.0141)**	**(0.00240)**			
Central bank Independence $_{t-1}$							**0.0132*****	**0.00654*****	**0.146*****
							(0.00259)	**(0.00242)**	**(0.0145)**
Central bank Independence							**1.014*****	**0.0886*****	**0.00718*****
							(0.359)	**(0.0157)**	**(0.00266)**
Central bank Independence$_{t+1}$							**-0.892****	**0.00328****	**0.00196****
							(0.363)	**(0.00162)**	**(0.000826)**
Election event	-0.168***			-0.149***			-0.150***		
	(0.0163)			(0.0160)			(0.0177)		
Banking crisis	-0.0398**	-0.0426***	-0.0383**	-0.0327**	-0.0434***	-0.0310*	-0.0383**	-0.0327**	-0.0434***
	(0.0164)	(0.0164)	(0.0162)	(0.0160)	(0.0166)	(0.0160)	(0.0162)	(0.0160)	(0.0166)

Bank concentration	-0.0158***	-0.0159***	-0.0156***	-0.0155***	-0.0159***	-0.0155***	-0.0159***	-0.0156***	-0.0155***
	(0.00157)	(0.00154)	(0.00158)	(0.00158)	(0.00159)	(0.00157)	(0.00154)	(0.00158)	(0.00158)
Credit risk	-0.000321*	-0.00489*	-0.00561**	-0.0106*	-0.000360*	0.00580**	-0.0106*	-0.00793***	-0.00580**
	(0.000186)	(0.00281)	(0.00268)	(0.00523)	(0.000184)	(0.00222)	(0.00523)	(0.00240)	(0.00222)
Foreign entry	0.189***	0.488***	0.0247	0.212	0.364**	1.371*	0.148*	0.490***	-0.0784
	(0.0583)	(0.0960)	(0.0548)	(0.135)	(0.158)	(0.708)	(0.0766)	(0.126)	(0.115)
Inflation	-0.00424***	-0.00594***	-0.00242*	-0.000456	-0.000784	-0.00657***	-0.00262**	-0.00430***	-0.00509***
	(0.00114)	(0.00153)	(0.00143)	(0.00198)	(0.00230)	(0.00192)	(0.00116)	(0.00157)	(0.00161)
Real GDP per capita	0.0352*	0.148***	0.0445*	0.0834*	0.183***	0.577***	0.0438**	0.172***	-0.0210
	(0.0180)	(0.0315)	(0.0244)	(0.0488)	(0.0648)	(0.168)	(0.0207)	(0.0372)	(0.0208)
Political institutions	0.0120*	0.0775***	0.195***	0.314***	0.304***	-0.0125	0.0897*	0.435***	0.00260
	(0.00723)	(0.0260)	(0.0388)	(0.0485)	(0.0292)	(0.0154)	(0.0476)	(0.0707)	(0.00804)
Constant	0.115	-0.818***	0.834***	-0.176	-0.904*	0.0817	0.151	-0.809***	0.770***
	(0.149)	(0.259)	(0.202)	(0.406)	(0.530)	(0.393)	(0.168)	(0.288)	(0.230)
Time Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	686	525	161	686	525	161	686	525	161
Number of Group	46	45	23	46	45	23	46	45	23
Instrument	27	26	17	27	26	17	27	26	17
AR1	-3.091	-3.338	-3.035	-3.186	-3.766	-3.905	-3.989	-3.453	-3.005
z(p-value)	0.001	0.001	0.000	0.001	0.001	0.000	0.001	0.001	0.000
AR2	-0.627	0.680	0.691	-0.154	-0.600	-0.318	-0.215	0.65	0.310
z(p-value)	0.531	0.509	0.489	0.877	0.549	0.365	0.830	0.517	0.315
Sargan's Test	27.94	22.32	15.27	15.37	18.42	16.79	22.77	25.69	22.21
p-value	0.359	0.387	0.301	0.816	0.433	0.321	0.291	0.610	0.206
Hansen's Test	8.188	6.440	6.918	5.214	6.980	9.555	8.777	10.56	6.840
Chi2 (p) value)	0.515	0.695	0.837	0.815	0.444	0.0520	0.458	0.307	0.824
Fisher-test	1154	1107.8	1707.1	2717	2373.60	2160.99	3125	3301.4	152128
P-value	0	0	0	0	0	0	0	0	0

Table 2 shows the effect of central bank regulatory independence on bank lending. All variables are described in Appendix A.
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3: Interactive effects of electoral cycles and central bank regulatory independence on bank lending

Interactions with---	Monetary policy Independence	Macro-prudential Independence	Central Bank Independence
Variables	Model 18	Model 19	Model 20
Bank lending $_{t-1}$	-1.003***	-1.003***	-1.002***
	(0.00682)	(0.00695)	(0.00765)
Electoral cycle $_{t-1}$	**0.0203***	**0.0201***	**0.0203***
	(0.0111)	**(0.0105)**	**(0.0111)**
Electoral cycle	**0.0627*****	**0.169*****	**0.153****
	(0.0169)	**(0.0157)**	**(0.0718)**
Electoral cycle $_{t+1}$	**-0.103*****	**-0.144*****	**-0.780*****
	(0.0395)	**(0.0286)**	**(0.118)**
Electoral cycle $_{t+2}$	**-0.0253*****	**-0.0241****	**-0.0858*****
	(0.00906)	**(0.0121)**	**(0.0202)**
Monetary policy independence	-10.16**		
	(4.808)		
Electoral cycle$_{t-1}$ × Monetary policy independence	0.00197***		
	(0.000182)		
Electoral cycle × Monetary policy independence	**-0.939****		
	(0.380)		
Electoral cycle$_{t+1}$ × Monetary policy independence	-0.0233		
	(0.0160)		
Electoral cycle$_{t+2}$ × Monetary policy independence	-0.601***		
	(0.172)		
Macro-prudential independence		-12.11***	
		(4.298)	
Electoral cycle$_{t-1}$ × Macro-prudential independence		-0.0854***	
		(0.0272)	
Electoral cycle × Macro-prudential independence		**-0.101*****	
		(0.0217)	
Electoral cycle$_{\mathbf{t+1}}$ × Macro-prudential independence		0.141**	
		(0.0559)	

Electoral cycle$_{t+2}$ × Macro-prudential independence		-1.787***	
		(0.671)	
Central bank independence			-1.314***
			(0.478)
Electoral cycle $_{t-1}$ × Central bank independence			0.00134***
			(0.000343)
Electoral cycle × Central bank independence			**-0.0283****
			(0.0114)
Electoral cycle $_{t+1}$ × Central bank independence			-0.0136*
			(0.00760)
Electoral cycle $_{t+2}$ × Central bank independence			-0.235**
			(0.112)
Banking crisis	-104.1***	-107.5***	-120.9***
	(5.639)	(6.446)	(7.223)
Bank concentration	-0.108***	-0.117***	-0.0977***
	(0.00856)	(0.00830)	(0.00946)
Credit risk	-1.200***	-0.551***	-1.005***
	(0.0554)	(0.0787)	(0.0704)
Foreign entry	21.95***	24.29***	26.21***
	(3.369)	(4.691)	(3.304)
Inflation	-0.00302***	-0.00124	-0.00153**
	(0.000824)	(0.000824)	(0.000693)
Real GDP per capita	1.164**	2.073***	1.846***
	(0.466)	(0.489)	(0.576)
Political institutions	23.74***	23.37***	14.34***
	(1.752)	(2.654)	(2.095)
Time Fixed Effect	Yes	Yes	Yes
Constant	-29.36***	-12.26**	-7.035
	(4.198)	(5.400)	(12.43)
Observations	736	690	734
Number of Group	48	48	48
Instrument	23	23	23
AR(1)	-3.38	-3.50	-3.27

z(p value)	(0.001)	(0.001)	(0.001)
AR(2)	0.63	0.65	0.61
z(p value)	(0.499)	(0.517)	(0.491)
Sargan Test OIR	2.502	0.266	0.195
	(0.286)	(0.606)	(0.207)
Hansen Test OIR:	5.15	5.07	5.20
Chi2 (p) value)	(0.272)	(0.397)	(0.270)
Fisher	2808.65***	2156.63***	2160.99***
Net Effect (Electoral cycle)	**-0.3674*** **	**0.1513*** **	**0.1376*** **

Table 2 shows the interactive effect of electoral cycle and central bank regulatory independence on bank lending. All variables are described in Appendix A.
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Interactive effects of electoral cycles and central bank regulatory independence on bank lending in countries with weak and strong political institutions

	Countries with weak political institutions			Countries with strong political institutions		
VARIABLES	Model 21	Model 22	Model 23	Model 24	Model 25	Model 26
Bank lending $_{t-1}$	0.856**	0.836**	0.836**	0.845**	0.850**	0.869**
	(0.364)	(0.369)	(0.369)	(0.367)	(0.368)	(0.364)
Electoral cycle	**1.935****	**1.675***	**1.685***	**0.227****	**0.230*****	**0.230*****
	(0.873)	**(0.911)**	**(0.916)**	**(0.0895)**	**(0.0667)**	**(0.0667)**
Monetary policy independence	-0.00779***			0.00869***		
	(0.000222)			(0.000533)		
Electoral cycle × Monetary policy independence	**3.651***			**-0.3714*****		
	(2.115)			**(0.1390)**		
Macro-prudential independence		0.471***			12.19**	
		(0.177)			(5.767)	
Electoral cycle × Macro-prudential independence		**0.0645*****			**-5.566****	
		(0.00243)			**(2.489)**	
Central bank Independence			-12.68***			0.251*
			(4.709)			(0.135)
Electoral cycle × Central bank Independence			**1.554***			**-0.334***
			(0.820)			**(0.173)**
Banking crisis	-7.403	9.082	10.96	-4.498	-10.32	-11.92
	(12.58)	(15.10)	(15.33)	(13.74)	(12.64)	(12.91)
Bank concentration	-0.0217*	-0.0587**	-0.0587**	-0.0245**	-0.0402**	-0.0248*
	(0.0116)	(0.0240)	(0.0240)	(0.0122)	(0.0180)	(0.0128)
Credit risk	-0.119*	-0.144**	-0.144**	-0.111*	-0.0384	-0.734
	(0.0621)	(0.0705)	(0.0705)	(0.0638)	(0.0417)	(1.499)
Foreign entry	1.084***	0.540**	0.540**	1.065***	2.449***	1.303***
	(0.400)	(0.238)	(0.238)	(0.392)	(0.884)	(0.475)
Inflation	-3.443**	-4.597**	-4.597**	-3.621**	-5.367**	-3.906**
	(1.599)	(1.972)	(1.972)	(1.648)	(2.290)	(1.755)
Real GDP per capita	12.19*	12.00*	15.54**	18.27**	18.09**	18.22**
	(6.466)	(6.997)	(7.671)	(7.917)	(8.411)	(8.644)

Time Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Constant	163.7**	169.8***	141.4**	311.2***	234.3***	174.5**
	(78.64)	(51.81)	(54.85)	(89.23)	(70.10)	(83.06)
Net effect	**3.5892*** **	**1.6848*** **	**2.5312*** **	**0.05508*** **	**-0.8654*** **	**0.04777*** **
Observations	313	346	344	325	358	358
Number of Group	35	35	35	31	31	31
Instrument	19	19	19	19	19	19
AR(1)	-3.677	-3.112	-3.297	-3.221	-3.682	-3.113
z(p value)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
AR(2)	-1.56	-1.53	-1.56	-1.54	-1.53	-1.54
z(p value)	(0.120)	(0.126)	(0.120)	(0.124)	(0.126)	(0.123)
Sargan Test	15.71	37.65	22.81	37.65	18.54	22.30
(p-value)	(0.152)	(0.895)	(0.297)	(0.895)	(0.206)	(0.542)
Hansen Test OIR:	30.28	28.11	29.31	30.86	30.02	28.46
Chi2 (p) value)	(0.603)	(0.709)	(0.651)	(0.574)	(0.616)	(0.693)
Fisher	1098.19***	1135.69***	1519.73***	796.26***	2396.68***	1401.12***

All variables are described in Appendix A.

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Appendix (see supplementary sheet).

APPENDIX A

Variables	Measurement	Expectations	
Dependent:			
Bank lending	*is measured using the percentage of aggregate bank credit to gross domestic product (GDP) in a given country*	Global Financial Development Database of the World Bank	
Independent (Key) Variables			
Electoral cycles	*(1) Electoral cycle (election event) is constructed as a dummy, with a value of 1 in election years and 0 otherwise)* *(2) Electoral cycle $_{t-1}$ (pre-election) is constructed as a dummy, with a value equal to 1 in years before presidential elections, and 0 otherwise;* *(3) Electoral cycle $_{t+1}$ (post-election) is constructed as a dummy, with a value equal to 1 in year 1 after presidential election has taken place, and 0 otherwise;* *(4) Electoral cycle $_{t+2}$ (post-election) is constructed as a dummy, with a value equal to 1 in year 2 after presidential election has taken place, and 0 otherwise.*	Global Financial Development Database of the World Bank	+/-ve
Monetary policy independence	*Monetary policy independence index ranges between 0 and 1 with higher values of index denoting lower correlation of interest rates and thus greater monetary policy independence (data on monetary policy independence from IMF's International Financial Statistics (IFS))*	IMF's International Financial Statistics (IFS) Database	-ve

Macro-prudential independence	*is the sum of dummies for all 17 categories: countercyclical capital buffer, requirements for banks to maintain a capital conservation buffer, capital requirements, limit on leverage of banks, loan loss provision requirements, limits on foreign currency, limits to the loan-to-value ratios, debt service-to-income ratio, minimum requirements for liquidity coverage ratios, limits to the loan-deposit ratio, limits to net or gross open foreign exchange positions, reserve requirements, loan restrictions, risk measures, taxes and levies applied to specified transactions, These are sum of all the dummies of the policy actions recorded in the databases and takes values from -1 to 1, with higher values of the index indicating strong macro-prudential independence. Data was obtained from the iMaPP database constructed by Alam et al. (2019)*	iMaPP database constructed by Alam *et al.* (2019). Global Macro-prudential policy instruments and IMF annual macro-prudential policy survey), national sources (Lim *et al.*, 2011, 2013; Alam *et al.*, 2019).	-ve
Central bank independence	*is the weighted average of components of central bank independence(Central Bank's ability to control monetary instruments, usually a set of restrictions on the government's influence on the management of monetary policy by the central bank)*	Cukierman, Webb and Neyapti indexes (CWN) (Garriga, 2020)	-ve
Control variables			
Banking crisis	*(measured with a dummy equal 1, if a country experienced banking crisis in a particular year, and 0 otherwise);*	Global Financial Development Database of the World Bank	-ve
Bank concentration	*is the industry asset concentration of banks, measured as the ratio of asset of the three largest commercial natural logarithm of total bank assets;*	Global Financial Development Database of the World Bank	+ve
Credit risk	*is the ratio of nonperforming to gross loan;*	Global Financial Development Database of the World Bank	+ve

Foreign Bank Entry	***Foreign entry*** *(measured with a dummy equal to 1 if a foreign bank entered a particularly country in a specific year, and 0 otherwise*	BankScope	+ve
Inflation	*measured with the consumer price index);*	Global Financial Development Database of the World Bank	-ve
Real GDP per capita	*real GDP per capita;*	Global Financial Development Database of the World Bank	-ve
Political institution	*is measured as an aggregate of six indicators (rule of law, government effectiveness, control of corruption, political stability, regulatory quality and voice and accountability)*	*World Governance Indicators*	-ve

APPENDIX B

Table A: Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
Bank lending	864	75.3157	36.756	8.138	238.387
Electoral cycle	877	0.173	0.378	0	1
Monetary policy independence	867	0.458	0.499	0	1
Macro-prudential independence	864	0.175	0.619	-1	1
Central bank independence	843	0.545	0.092	0.246	0.991
Banking crisis	839	0.078	0.269	0	1
Bank concentration	771	70.91	18.691	17.164	100
Credit risk	728	4.255	3.409	-0.212	45.3
Foreign Bank Entry	839	0.593	0.491	0	1
Inflation	844	7.496	13.721	-9.798	324.997
Real GDP per capita	835	8.971	1.297	6.661	11.944
Political institution	848	-0.561	0.361	-1.778	0.855
Control of corruption	849	-0.614	0.355	-1.62	0.76
Government effectiveness	849	-0.599	0.387	-1.69	1.06
Political stability	849	-0.522	0.564	-2.67	1.2
Regulatory quality	849	-0.502	0.372	-2.23	1.13
Rule of law	849	-0.556	0.378	-1.66	1.08
Voice and accountability	849	-0.571	0.466	-1.98	0.94

The sample includes banks in 54 African countries. All the variables are computed using data for the period 2004-2022. Bank lending behaviour, is measured using the percentage of aggregate bank credit to gross domestic product (GDP) in a given country; Electoral cycle (election event) is constructed as a dummy, with a value of 1 in election years and 0 otherwise); Monetary policy independence index ranges between 0 and 1 with higher values of index denoting lower correlation of interest rates and thus greater monetary policy independence (data on monetary policy independence from IMF's International Financial Statistics (IFS)); ***Macro-Prudential Policy Action Policy action,*** *is the sum of dummies for all 17 categories: countercyclical capital buffer, requirements for banks to maintain a capital conservation buffer, capital requirements, limit on leverage of banks, loan loss provision requirements, limits on foreign currency, limits to the loan-to-value ratios, debt service-to-income ratio, minimum requirements for liquidity coverage ratios, limits to the loan-deposit ratio, limits to net or gross open foreign exchange positions, reserve requirements, loan restrictions, risk measures, taxes and levies applied to specified transactions, These are sum of all the dummies of the policy actions recorded in the databases and takes values from -1 to 1, with higher values of the index indicating strong macro-prudential independence. Data was obtained from the iMaPP database constructed by Alam et al. (2019);* ***Central Bank Independence*** *is the weighted average of components of central bank independence(Central Bank's ability to control monetary instruments, usually a set of restrictions on the government's influence on the management of monetary policy by the central bank);* ***Banking crisis*** *(measured with a dummy equal 1, if a country experienced banking crisis in a particular year, and 0 otherwise);* ***Bank Concentration*** *is the industry asset concentration of banks, measured as the ratio of asset of the three largest commercial natural logarithm of*

total bank assets; ***Credit Risk*** *is the ratio of nonperforming to gross loan;* ***Foreign entry*** *(measured with a dummy equal to 1 if a foreign bank entered a particularly country in a specific year, and 0 otherwise;* ***Inflation*** *(measured with the consumer price index); real GDP per capita;* ***Political institutions*** *is measured as an aggregate of six indicators (rule of law, government effectiveness, control of corruption, political stability, regulatory quality and voice and accountability) from the World Governance Indicators; Data on these control variables were obtained from the World Bank Global Financial Development database.*

Table B: Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Bank lending	1.000											
(2) Macro-prudential policy action	0.082	1.000										
	(0.000)											
(3) Monetary policy	-0.119	-0.014	1.000									
	(0.000)	(0.362)										
(4) Micro-prudential action	-0.063	-0.034	0.002	1.000								
	(0.000)	(0.058)	(0.913)									
(5) Electoral cycle	0.001	-0.041	-0.029	0.007	1.000							
	(0.929)	(0.006)	(0.016)	(0.647)								
(6) Banking crisis	-0.134	-0.184	-0.090	0.109	0.008	1.000						
	(0.000)	(0.000)	(0.000)	(0.000)	(0.666)							
(7) concentration	-0.249	0.071	-0.075	-0.013	-0.011	-0.414	1.000					
	(0.000)	(0.000)	(0.000)	(0.400)	(0.398)	(0.000)						
(8) credit risk	0.100	-0.076	0.186	0.201	0.022	0.010	0.162	1.000				
	(0.000)	(0.000)	(0.000)	(0.000)	(0.075)	(0.590)	(0.000)					
(9) Foreign entry	0.003	0.056	-0.047	-0.004	0.029	0.046	-0.025	-0.001	1.000			
	(0.830)	(0.000)	(0.000)	(0.804)	(0.019)	(0.011)	(0.061)	(0.903)				
(10) Inflation	0.019	-0.001	-0.020	-0.035	-0.004	-0.082	0.090	-0.249	-0.113	1.000		
	(0.167)	(0.938)	(0.125)	(0.020)	(0.748)	(0.000)	(0.000)	(0.000)	(0.000)			
(11) GDP per capita	0.090	-0.026	0.093	-0.047	0.003	0.091	-0.153	-0.169	0.078	0.249	1.000	
	(0.000)	(0.109)	(0.000)	(0.002)	(0.835)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
(12) Political institutions	-0.017	-0.174	-0.049	0.007	-0.011	0.310	-0.313	-0.114	0.048	0.042	0.101	1.000
	(0.202)	(0.000)	(0.000)	(0.655)	(0.397)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	
(13) Control of corruption	-0.069	-0.106	-0.148	-0.007	-0.011	0.288	-0.199	-0.150	0.041	0.089	0.123	0.906
	(0.000)	(0.000)	(0.000)	(0.653)	(0.391)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
(14) Government effectiveness	-0.093	-0.146	-0.153	-0.035	-0.027	0.313	-0.351	-0.210	0.049	-0.008	0.060	0.909
	(0.000)	(0.000)	(0.000)	(0.020)	(0.033)	(0.000)	(0.000)	(0.000)	(0.000)	(0.527)	(0.000)	(0.000)
(15) Political stability-violence	-0.051	-0.162	-0.023	0.130	-0.013	0.229	-0.147	0.106	0.099	0.013	0.047	0.838
	(0.000)	(0.000)	(0.065)	(0.000)	(0.307)	(0.000)	(0.000)	(0.000)	(0.000)	(0.313)	(0.000)	(0.000)
(16) Regulatory quality	0.013	-0.189	-0.024	-0.087	-0.013	0.284	-0.348	-0.239	0.110	0.038	0.111	0.897
	(0.327)	(0.000)	(0.056)	(0.000)	(0.310)	(0.000)	(0.000)	(0.000)	(0.000)	(0.004)	(0.000)	(0.000)
(17) Rule of law	-0.094	-0.176	0.012	-0.019	-0.029	0.341	-0.295	-0.154	-0.027	0.022	0.128	0.943
	(0.000)	(0.000)	(0.328)	(0.214)	(0.023)	(0.000)	(0.000)	(0.000)	(0.031)	(0.097)	(0.000)	(0.000)
(18) Voice and accountability	0.186	-0.162	0.040	0.003	0.029	0.222	-0.368	-0.063	-0.034	0.073	0.085	0.831

	(0.000)	(0.000)	(0.002)	(0.824)	(0.019)	(0.000)	(0.000)	(0.000)	(0.008)	(0.000)	(0.000)	(0.000)

Variables	(13)	(14)	(18)	(19)	(20)	(21)
(13) Control of corruption	1.000					
(14) Government effectiveness	0.848	1.000				
	(0.000)					
(15) Political stability-violence	0.736	0.637	1.000			
	(0.000)	(0.000)				
(16) Regulatory quality	0.758	0.875	0.591	1.000		
	(0.000)	(0.000)	(0.000)			
(17) Rule of law	0.884	0.910	0.717	0.870	1.000	
	(0.000)	(0.000)	(0.000)	(0.000)		
(18) Voice and accountability	0.641	0.654	0.640	0.752	0.697	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

Electoral cycle (election event) is constructed as a dummy, with a value of 1 in election years and 0 otherwise); ***Monetary policy independence*** *index ranges between 0 and 1 with higher values of index denoting lower correlation of interest rates and thus greater monetary policy independence (data on monetary policy independence from IMF's International Financial Statistics (IFS));* ***Macro-Prudential Policy Action Policy action,*** *is the sum of dummies for all 17 categories: countercyclical capital buffer, requirements for banks to maintain a capital conservation buffer, capital requirements, limit on leverage of banks, loan loss provision requirements, limits on foreign currency, limits to the loan-to-value ratios, debt service-to-income ratio, minimum requirements for liquidity coverage ratios, limits to the loan-deposit ratio, limits to net or gross open foreign exchange positions, reserve requirements, loan restrictions, risk measures, taxes and levies applied to specified transactions, These are sum of all the dummies of the policy actions recorded in the databases and takes values from -1 to 1, with higher values of the index indicating strong macro-prudential independence. Data was obtained from the iMaPP database constructed by Alam et al. (2019);* ***Central Bank Independence*** *is the weighted average of components of central bank independence(Central Bank's ability to control monetary instruments, usually a set of restrictions on the government's influence on the management of monetary policy by the central bank);* ***Banking crisis*** *(measured with a dummy equal 1, if a country experienced banking crisis in a particular year, and 0 otherwise);* ***Bank Concentration*** *is the industry asset concentration of banks, measured as the ratio of asset of the three largest commercial natural logarithm of total bank assets;* ***Credit Risk*** *is the ratio of nonperforming to gross loan;* ***Foreign entry*** *(measured with a dummy equal to 1 if a foreign bank entered a particularly country in a specific year, and 0 otherwise; I****nflation*** *(measured with the consumer price index); real GDP per capita;* ***Political i****nstitutions* *is measured as an aggregate of six indicators (rule of law, government effectiveness, control of corruption, political stability, regulatory quality and voice and accountability) from the World Governance Indicators; Data on these control variables were obtained from the World Bank Global Financial Development database.*

Table C: The mean values of independent central bank regulatory policies across different political institutions

	Mean values for countries with weak Political Institution	Mean values for countries with strong Political Institution
Monetary policy independence	0.4531	0.4629
Macro-prudential independence	0.1522	0.1968
Central bank independence	0.5445	0.5456