Six Decades of Unsettling Evidence of Growth and Finance Nexus: Do shades of democracy explain the paradox?

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ABSTRACT

We document seemingly unsettling evidence of the negative effect of finance on economic growth over a long panel of 162 countries for a wider study period of more than six decades from 1960-2023. We not only document the results that are robust to alternative measures of finance but also find the relationship remain stable for various sub-periods and survive different sensitivity tests. We employ the credit registry coverage as a noble instrument for expansion of finance to further sharpen credibility to our initial findings while addressing endogeneity concern that might plague empirical estimation. The findings from the instrument corroborate our baseline findings. Unboxing financial development to credit market and equity market components and further disaggregation each into the depth, access and efficiency, our investigation reveals the negative growth is driven by the depth and access of financial institutions. In the second stage of analysis, we gauge a comprehensive democracy index ranged from exploitative to facilitative democracy based on cross country variation on the variety of democracy based on corruption in democratic process and political capture. This heterogeneity in democracy explains the negative relationship between growth and finance under exploitative democracy. We further show expansion of credit leads to higher allocation inefficiency in years leading election year thereby supporting our view of credit misallocation driven by political rents. Our findings imply in the wake of political rent-seeking, more finance could mean that would hinder allocative efficiency and entrepreneurship that ultimately deter growth. Our results underscore the merit of facilitative democracy necessary conditions to break the unintended vicious link between finance and growth.

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Introduction

Does finance promote or deter economic growth? Unlike the previously held dominant view, we find the latter might be true. The findings that is based on global data over a comprehensive period of over six decades.

Economic growth and finance nexus occupy one central place in the economic policy literature. To this strand, the more finance, the more growth argument has gained such traction that the positive finance-growth nexus has established itself as a seemingly settled question (King and Levine, 1993; Levine 2003). Unsurprisingly, reforms relating to improving finance have been one of the key focuses of governments worldwide in the past six decades or so. This positive effect derives from Schumpeter (1911) argument that financial intermediation would facilitate allocative efficiency in an economy essential for technological innovation and economic development. Moreover, the argument has found support in earlier empirical works. For instance, using data on 80 countries over the 1960-1989 period, King and Levine (1993) show that the financial system can promote economic growth. Levine& Zervos (1998),Beck et al. (2000) &Levine (2003) further supports this earlier empirical finding. While few minorities of opponents of this dominant positive growth-finance nexus have questioned the first-degree importance of finance. While few minorities of opponents of this dominant positive growth-finance nexus have questioned the first-degree importance of finance arguing financial development would rather follow economic development,[1] we formally explore the possibility of the negative relationship between growth and finance in a more than60-year-long panel of 161 countries.[2]

The possibility of a negative relationship emerges from the fact that in the presence of corruption, state expropriation and elite capture, more finance simply could mean resource capture by a few that would hinder allocative efficiency and entrepreneurship that ultimately deter growth. In line with the elite capture argument (Reinikka et al., 2004; Andersen et al, 2022), we argue that the political economy of opportunism and corruption could facilitate finance to divert resources for expropriation by a select few businesses and connected elites thereby raising external financing prohibitively costly for entrepreneurial and productive units of the economy. More finance, in at least for this set of regimes, may create asset misallocations, bubbles, expansion of non-productive sector and private wealth creation of a select few (Ruan and Wang, 2022).[3]In line with the debt and expropriation argument, Bai et al. (2013) examine a sample of Chinese state-owned companies to document that the companies controlled by private block shareholders have higher leverage due to excessive expropriation via debt. The resultant effect leads to allocative inefficiency in an economy resulting in the shrinkage of economic growth. In this study, we examine this deterring effect of finance on growth in cross-country panel data for six decades.

Using domestic credit extended to the private sector as a percentage of GDP as a measure of finance, we run an empirical investigation of a long panel of 162 countries for more than 6 decadesto

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[1] For example, Lucas [1988] argues the relationship between financial and economic development has been exaggerated. There have been more recent studies examining the growth-finance nexus during crisis (Cerra & Saxena, 2008)) and the non-linearity of growth-finance relationship (Shen & Lee, 2006).

[2]While financial development can include multitude of factors that include depth, access and efficiency of institutions and market, our proposition of more finance is limited the size of credit-instituions in an economy. However, we do enquiry of other aspects as well to unpack heterogenous outcomes on economic growth.

[3] Using qualitative lens, Ruan and Wang (2022) documents how rural elites, especially village cadres, usepolitical collusion to profit from the misuse of public goods, the manipulation of local elections and the suppression of anti-corruption protests.

document a large negative economic magnitude of the negative effect of more finance on economic growth. The conformity of our results is drawn from baseline results along with sub-period analysis (1960-1990), (1991-2007) and (2008-2022) suggesting the negative relationship between finance and growth is not driven by one particular episode of time or sub-period but is still relevant in recent times. We further remove the crisis periods to see if this negative relationship is driven by shrinkage in economic growth during the crisis period. Specifically, we identify the oil shock recession during 1973 -1975, the stagflation 1980-1982, the Gulf War recession (1990-1991), the Asian financial crisis (1997- 1998), the dot com triggered recession (2001), global financial meltdown (2007 – 2009) and the covid crisis: (2020-2021). The result holds even when we remove the crisis period. We further incorporate alternative measures of growth to see if this relationship holds with different growth metrics. Specifically, we employ additional growth measures including GDP per capita growth, GNI growth, Real GDP Growth, GDP per capita growth based on Purchase power parity and GNI per capita growth. The results are intact to our baseline results.

To rule out the possibility that the growth could be endogenous to omitted variables varying over time, we also employ an instrumental variable approach. We use the credit coverage registry as arguably noble instruments for the expansion of Finance for the following reason. First, the credit coverage is not only positively correlated with Finance in our data but also are conceptually positively related to each other. For instance, as credit expands this increases the data collected by central/private credit bureau in any economy. However, there is no plausible first order explanation to conjecture a positive and direct relationship between credit coverage with economic growth. Taking together, we argue that credit coverage (private and public) is a very good instrument for the expansion of Finance. With this instrument and employing two stage OLS estimation, we document a negative relationship between finance and economic growth. The magnitude of the effect are comparable with the OLS implying OLS estimate is as severely affected by endogeneity as often discussed in the growth literature.

We next examine the differential impact of equity market development and credit market development. Unlike finance, equity market provides an efficient risk sharing mechanism for entrepreneurs thereby positively affecting entrepreneurial ecosystem and hence economic growth. To assess this conjecture, we employ Market Cap/GDP as a proxy of equity market development on all growth metrics and run a horse-race models. Contrary to the credit market and growth nexus, we find positive result of equity market on growth. Further, to see whether our result is driven by non-linear relation as documented in previous studies (Levine, 2005), we allow for non-linearity in our estimation models. The accommodative models reveal non-linear relation do not explain the negative finance growth nexus in the data.

In the next set of enquiries, we examine alternative proxy of financial development provided by the IMF database. The results are stable and are inline with our baseline results.

Our negative result between finance and growth is supported across various alternative measures, sensitivity tests, and robustness checks. We show the possibility of a negative relationship emerges from

the fact that in the presence of corruption, state expropriation and elite capture, more finance simply could mean resource capture by a few that would hinder allocative efficiency and entrepreneurship that ultimately deter growth. To strengthen our argument, we explore four possible reasons behind the negative result.

First, we examine whether credit markets or equity markets drive innovation and support the emergence of new billionaires. If credit markets were effective in promoting these outcomes, we would expect positive results. However, our analysis shows that credit market development has no relationship with patent coverage, while equity market development has a positive association. We also find a negative result between credit market development and billionaire presence. In contrast, equity market development shows a positive result with billionaire presence. This shows credit markets are not well-suited to fostering innovation or creating new wealth. Instead, equity markets act as engines of economic progress and serve as "financial accelerators" that fuel growth. This result supports our argument of elite capture of available credits that result in higher expropriation of credit resources and inefficient allocation of resources.

Second, we examine the role of democracy and corruption to explain the negative result. Previous studies (for e.g. Mauro, 1995; Ehrlich et al., 1999; Tavares & Wacziarg, 2001; Mo, 2001; Nguyen & Van Dijk, 2012; Acemoglu et al., 2019; Martinez, 2022) have shown that weak democratic systems and high corruption levels deter a nation's financial system and economy. In another study by Delis et al. (2020) explored the cost of credit as a mechanism through which democratization influences economic development. We obtain various measures of democracy and corruption from (Coppedge et al., 2024) to assess their impact on growth. We reveal that the negative result is driven by deterring democracy and high level of corruption.

Third, we explore whether the election cycle could be the cause of significant credit growth during election periods, and whether this increased credit eventually harms the financial system, potentially driving our negative result. Further, we explore the possibility that the negative result may be driven by the infiltration of political motives, elite interests, and corrupt practices into financial systems, which distort credit allocation and disrupt economic growth. To examine this, we first analyze the impact of election periods (both the current year and the previous year) on domestic credit under a deterrent and facilitating democracy framework. Then, we study the influence of the post-election period (leading up to +1 to +4 years) on the health of the financial system. Our findings show that the effect is more pronounced during the election period where domestic credit exhibits significant growth in weaker democracies, with adverse consequences on credit quality observed over the subsequent two to four years. We share the similar findings with Cole (2009) who show that credit booms during election years are much larger than average annual credit growth, with much of this credit eventually defaulting. Cole also highlights that resources are misused by politicians, and loan defaults are common in districts where the

winning party had the most electoral success. Similarly, Faraz and Rockmore (2020) also reported comparable results in their study.

Fourth, we examine the moderation effect of the quality of national governance institutions. Weaker institutions increase the likelihood that elite capture of available credits could result in higher expropriation of resources and inefficient allocation of resources (Acemoglu et al, 2006; Stulz, 2005; Andersen et al, 2022). Our examination of the moderating role of national governance institutions suggests the negative relation between finance and growth flips to a positive when interacted with the institution's quality on the strength of control of corruption. This is because strong governance reduces inefficiencies and corruption, thus enhancing the productive use of financial resources. In other words, the results highlight the negative relationship between finance and growth is attributed, to a larger extent, to weaker national governance. The results corroborate the findings of Barro (2003) on the determinants of economic growth.

We contribute to finance and growth literature in at least three distinct ways.

First, unlike the dominant view of positive finance and growth nexus, we use comprehensive global macroeconomic data to show the deterring effect of finance on growth mainly driven by the higher risk of corruption, expropriation and elite capture of resources. Unlike the established driver of growth, atleast to the select set of regimes, finance could be a means to exacerbate expropriation and elite capture to deter economic growth. Our work is related to the strand of literature which views finance's role as overstressed and not of primary importance (Lucas, 1988). However, we differ from this strand of literature in that we maintain finance could hurt economic growth by leveraging the elite capture and expropriation (Andersen et al., 2022) and creating an allocative deadweight cost to the economy (Thapa et al., 2022). Our approach builds on the foundational insights of Acemoglu and Robinson (2001, 2012) on the role of political institutions in shaping economic outcomes, integrates perspectives on financial development and growth from Levine (2005), and addresses the misallocation of resources emphasized in Hsieh and Klenow (2009).

Second, we document the positive moderation of country governance and institutions to break this vicious nexus of finance-growth. We show infiltration of political motives, elite interests and corrupt practices into financial systems distort credit allocationand disrupts the economy's growth trajectory.By lowering the magnitude and frequency of expropriation and corrupt opportunism, national governance and facilitating democracy could help more finance to channelise to the productive sector and promote allocational efficiency of the economy thereby positively affecting growth. This finding corroborates the findings of Barrow (2001) on the determinants of growth and Thapa et al. (2022) on allocative efficiency. To this strand, we contribute by providing evidence that the governance environment promotes economic growth by channeling finance to more efficient sectors in the economy. Our motivation to introduce governance mechanism comes from our findings on innovation-financial development nexus. Our results show that the equity market fosters innovation and wealth, and credit development does not, likely due to

elite capture and corruption. This work connects to the discussion of corruption and growth dynamics from Mauro (1995) and extends recent debates on the interplay between financial development, governance, and economic performance (e.g., Beck, Levine, and Loayza, 2000; Rajan and Zingales, 2003).

Third, by unpacking financial development into equity and debt market development, we show two different mechanisms in play affecting economic growth in opposite directions. While debt could further exacerbate allocative inefficiency in the face of higher corruption and expropriation risk (Andersen et al., 2022); equity market development could provide missing governance by promoting market-based governance and exit opportunities, a necessary condition for entrepreneurial development.

The rest of the paper is organised as follows. Section 2 discusses some theoretical underpinning and empirical evidence around growth-finance nexus. Section 3 discusses the identification strategy and data used in the study. Section 4 discusses the results and section 5 concludes.

Literature Review and Hypothesis Development

From a theoretical standpoint, literature on finance and growth could be broadly divided into two schools of view.[4]

Facilitation argument:

Intermediaries as risk-specialists assume the right risk for the surplus unit and manufacture credit to extend to deficit units in the economy. Their risk management expertise facilitates allocative efficiency in the economy, funds are channelised from the unproductive sector to the productive sector spurring economic growth and private sector development. Similarly, lower financing cost stimulates more productive investments, thus spurring growth.

Rajan and Zingales (1996) investigate the relationship between financial development and economic growth and find that industries more reliant on external finance tended to develop faster in countries with more developed financial markets in the 1980s. They maintain that financial development could facilitate economic growth by reducing external finance costs for firms in a large sample of countries. Similarly, in their cross-country study Levine and Zervos (1998) document that both stock market liquidity and banking development are significant predictors of economic growth, capital accumulation, and productivity improvement. Levine (2003) further extends this idea of more finance and more growth.

In a related study, Beck et al (2014) distinguishes financial system size and financial intermediation effect on growth and examine the impact on growth and volatility across 77 countries between 1980 and 2007. They find that intermediation activities positively contributing to the long-term

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[4] There is a third school of view that argues the contribution of finance on growth is not a first-order importance to growth or. This view maintains that Financial development follows Economic development and not the otherwise. Its importance is therefore overstressed.

growth while lowering volatility. On the other hand, Beck et al (2014) document the size of the financial sector stimulates short-term growth, however increasing volatility in high-income countries.

A variant of the facilitation literature documents that there is a non-linear effect in the financial development on economic growth. They argue that financial development contributes positively growth upto a threshold of financial development while reversing the relationship after the threshold (Law and Singh (2013, 2014). Using panel of 87 developed and developing countries, Law and Singh (2014) document the existence of an "optimal" level of financial development, with a threshold beyond which financial development is a detrimental on growth. Similarly, Botev et al (2019) examine the nonlinear relationship between finance and economic growth in the panel of developed, emerging, and developing countries, and reveal that finance has a positive effect on economic growth, however at a decreasing rate at higher levels of financial development and that with credit market (banking) and equity market financing complements each other.

Deterrence argument:

In this section, we explore the possible mechanism that explains negative effect of finance on growth. Sectoral resource allocation of an economy is a function of expropriation and corruption environment facing an economy (Stulz, 2005). In the regime facing higher corruption and expropriation risk, the resources are inefficiently allocated. In line with this argument, study by Boudreaux et al (2018) that employ federal convictions in the USA as a corruption proxy reveal that increased corruption shifts resources away from the knowledge based sector like professional, scientific, and technical service industries. To the set of regimes facing higher corruption, expropriation and corruption, the expansion of credit is a means to further expropriate resources. Put differently, the possibility of a negative relationship emerges from the fact that in the presence of corruption, state expropriation and elite capture, more finance simply could mean resource capture by a few that would hinder allocative efficiency and entrepreneurship that ultimately deter growth in line with the argument put forward by Stulz (2005) and Andersen et al (2022).[5]

In their enquiry of panel of 48 countries and Shen & Lee (2006) finds that banking development has an unfavorable or negative effect on growth. On the contrary, they discover stock market development has a positive impact on growth showing differential effect of credit market expansion and equity market expansion. Similar argument is documented by Arcand et al (2015) who maintain that that excessive financial development can have a negative impact on economic growth.

In line with the deterrence argument, we state our testable hypothesis as follows:

H₁: More finance would deter economic growth.

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[5]Valickova et al (2015) provides a comprehensive meta analysis of 67 studies on the effect of finance on growth.

Identification strategy/ Research Method

To assess the impact of finance on economic growth, we examineefolowing multivariate regression equation (1).

$$\text{Growth}_{k,t} = \propto + \beta_1 Fin_{k,t} + \boldsymbol{\beta_2 X_{k,t}} + \mu_k + \tau_t + \epsilon_{it} \qquad 1)$$

The dependent variable, $\text{Growth}_{k,t}$, is GDP growth rate (y-o-y) of a country k in year t. $Fin_{k,t}$ is the size of domestic credit variable measured as Domestic Credit/GDP (%). $\boldsymbol{X_{k,t}}$ the vector of control variables that include Country Size, GDP growth, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP and Unemployment rate. All variables are defined in Table Appendix table A1.

Data

The primary source of data is from World Bank WDI free access database from 1960 to 2022. We obtain varieties of democracy, corruption index and election cycle from database of Coppedge, M. et al. (2024). For governance moderation, we further employ World Bank WGI free access database. While the initial data with non-missing domestic credit variable would comprise of 163 countries, we impose the restriction that a country has atleast 15 years of observations of domestic credit variable leaves us 7002 country-year observations of 162countries from 1960 to 2023. For alternative measure of financial development, we employ financial development variable from IMF that covers sample period of 1980-2023 for 183 countries. For our sample, this variable covers 162 countries.

Baseline Results with Sensitivity Analysis

We employ estimation equation (1) to examine the effect of finance on economic growth. The result is reported in Table 2.

Our findings reveal unsettling evidence of negative of the private debt expansion on growth with the effect becoming more pronounced after 2008. We then examine if our baseline results are sensitive to a particular episode of time in our long panel. We divide the entire study period into 1960-1995, 1996-2007, and 2008-2023. Our results remain robust and stable suggesting the negative relationship between finance and growth is not driven by one particular episode of time or sub-period but is relevant in the entire study period.

In the Model 6, we remove the crisis periods from our study period. The intuition behind this sensitivity test is see if this negative relationship is driven by shrinkage in economic growth during the crisis period. Specifically, we identify the oil shock recession during 1973 -1975, the stagflation 1980-1982, the gulf war recession (1990-1991), Asian financial crisis (1997- 1998), the dot com triggered recession (2001), global financial meltdown (2007 – 2009) and the covid crisis: (2020-2021).

The onset of the Arab Oil Embargo (1973 -1975), which led to a fourfold increase in crude prices, triggered a severe and prolonged economic downturn. This was exacerbated by a struggling economy grappling with a declining dollar value, mounting trade and budget deficits, and diminishing domestic

crude production. Similarly, The 1980s global economic downturn was triggered by a combination of factors, including the second oil shock of 1979, tighter monetary policies in advanced economies, and the Latin American debt crisis, resulting in declines in activity and significant increases in unemployment rates, as well as long-lasting growth slowdowns in many emerging and developing economies. The Iranian Revolution subsequently caused oil prices to double. We identify 1980-1982 as the stagflation period. Third, the 1990s global economic downturn resulted from a variety of factors, including geopolitical uncertainty and a rise in oil prices associated with the Gulf War, weakness in lending institutions and a credit crunch in the US housing market, banking crises in Scandinavian countries, problems with the European Monetary System's exchange rate mechanism, the bursting of an asset price bubble in Japan, and high inflation and output contractions during the transition to market economies in Central and Eastern Europe and the former USSR.The 1990s. We assign year 1990 and 1991 for Gulf war recession. Fifth, The Asian Financial Crisis was triggered by the collapse of currency exchange rates and a speculative bubble, beginning in Thailand in 1997 and spreading across East and Southeast Asia, leading to the collapse of currency values, stock markets, and other asset values in multiple countries. We assign (1997 and 1998) to capture Asian financial crisis. The dot-com bubble was a result of speculative investments in internet-based companies, causing a stock market bubble in the technology industry. We assign year 2001 to to capture dot com recession. We also control for the GFC crisis. The GFC was triggered by the US housing market crisis and resulted in a global financial meltdown that required government intervention to save banks from bankruptcy and caused the deepest recessions since the Great Depression, with a slow recovery. We assign 2007-2008 to capture for the GFC crisis. Finally, we remove 2020-2021 to account for the Covid-crisis.The result holds even when we remove the crisis period.

The result is the dark side of expansion of finance on economic growth in line with the deterrence argument.

Insert table 2 here

Alternative measure of Growth

We employ alternative measure of growth that includes GDP per capita growth, GNI growth,Real GDP Growth, GDP per capita growth(PPP) and GNI per capita growth. The results reported in Table 3 are intact to our baseline results reported in Table 2.

Insert table 3 about here

Equity Market Development and Growth

In this section, we examine the effect of equity market development. We also examine the non linear relation relationship between finance and growth. The results are reported in Table 4. We show unlike credit market development equity market supports economic growth. The equity market's ability to efficiently allocate capital to productive enterprises likely drives this positive impact. Equity market offers liquidity depth, thereby channelling resource allocation to the productive sector. The result corroborates with the facilitation argument. However, this result should be interpreted cautiously. We also document negative non linear result on equity market and growth that suggest threshold effects. This shows optimal level of financial development is crucial to facilitate growth (Law & Singh, 2014).

Insert table 4 about here

Instrument of financial development

To rule out the possibility that the growth could be endogenous to omitted variable varying over time, we employ instrumental variable approach. We employ the private and public credit registry coverage index as an instrument of financial development. It is reasonable to argue that the higher private and public credit registry coverage is positively associated with higher financial development while no direct economic link with economic growth (the exclusion criteria). In Model 2 we employ principal component analysis (PCA) to consolidate public and private credit coverage into a single variable to enhance robustness and reduce dimensionality. We employ 2sls estimations equations 2 and 3 to estimate the impact of finance on economic growth[6].

$$\text{Stage 1: CMD}_{k,t} = \propto + \propto_1 PCRC_{k,t} + \epsilon_{it} \tag{2}$$

$$\text{Stage 2: Growth}_{k,t} = \propto + \beta_1 \widehat{CMD}_{k,t-1} + \boldsymbol{\beta_2 X_{k,t-1}} + \epsilon_{it} \tag{3}$$

The estimates are reported in table 5. The negative significant coefficient of second stage result in both model 1 and model 2 of the 2SLS instrumental variable estimation further supports the findings from baseline estimations.

Insert table 5 about here

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[6] We also include a higher-ordered lagged domestic credit as a percentage of GDP (lagged by two to five years) as an alternative instrument to address endogeneity issues (Boone et al., 2007). The results are stable and in line with the baseline result. The result is reported in Table 6.

Alternative measure of finance variable

We employ Findex data from IMF as alternative measure of financial development index.Financial Development Index (FD) consists of two sub-components including financial institutions (FI) and financial markets (FM) indices and each of these comprises of three sub-components: depth, access and efficiency. We employ broad Financial Development and its specific components—Credit Development, Depth, Access and efficiency. We report the findings in table 7. The result is consistent with the baseline results in table 2. More specifically, the result show while more finance lead to inefficiencies or misallocations that hinder growth, more efficient financial systems could enhance economic growth. The result suggests that improving the efficiency of financial institutions might be more beneficial for economic growth than simply expanding finance.

Insert table 7 about here

We document fundamental premise that financial inefficiencies are key reason deterring growth. We, now, identify and elaborate on several potential reasons below contributing to this phenomenon

Innovations, Billionaire and Financial Development

In this section, we strengthen our deterrence argument. The results are reported in Table 8. We show credit market development has no relationship with patent coverage, whereas equity market development exhibits a positive association. This underscores the role of equity markets as catalysts for innovation. On the other hand, we document a negative result between credit market development and billionaire presence. This result strengthens our argument related to elite capture and resource concentration. Credit markets primarily channel resources toward existing wealth holders, thereby constraining opportunities for the emergence of new billionaires. Conversely, equity market development demonstrates a positive result with billionaire presence. This shows that equity markets democratize access to capital and incentivize entrepreneurship. This supports our argument that credit markets are ill-equipped to foster innovation or create substantial new wealth. Instead, equity markets serve as engines of economic progress and functions as "financial accelerators."

Insert table 8 about here

Democracy, Governance quality and Corruption Level

The results reported in Table 7 reflects the importance of efficient financial system for positive growth. We explore what drives financial system efficiency and argue that factors like a country's level of democracy, governance quality and corruption play a critical role. Previous studies (for instance Cole, 2009) show that increase in credit during election periods lead to higher default rates. Our negative result may be explained by the inefficiencies in financial systems, where increased credit disproportionately benefits elite groups and politicians. This may be further exacerbated by political motives, elite influence, and corruption who infiltrate financial systems, distorting credit allocation and undermining growth.

i. Democracy's facilitating hand

In order to capture the essence whether democracy has a role to explain the negative result, we employee varieties of Democracy index that includes Electoral democracy index, Liberal democracy index, Participatory democracy index, Deliberative democracy index, Egalitarian democracy index and composite democracy index of these variables (For detail definition of variables, see Appendix Table A1) and show negative relation between finance and growth flips to positive when interacted with the democracy quality.

Insert table 9 about here

ii. Do Election Cycles Drive Credit Growth at the Cost of Quality?

We employ election cycle (current year and previous year) on domestic credit as a percentage of GDP under a deterrent and facilitating democracy framework. Next, we examine the impact of election cycle (lead +1 to lead +4 years) on the financial system's health. We measure the efficiency and quality of credit allocation by the rate of change in non-performing assets (NPAs) relative to the rate of change in lagged domestic credit to the private sector (as a percentage of GDP). We show the negative result is driven by deterring democracy and mainly the effect is observed during election period where domestic credit exhibits significant growth in weaker democracies, with adverse consequences on credit quality observed over the subsequent two to four years.

Insert table 10 here

iii. Role of Corruption

We employee various corruption index that includes Regime corruption Index, Political corruption index, Executive corruption index, Public sector corruption index, and composite corruption

index of these variables (for details on variables, see Appendix Table A1) and show that negative relation between finance and growth flips to positive when interacted with the low corruption levels.

Insert table 11 about here

iv. Role of National governance on the Finance-Growth Nexus

Literature on Law and Finance argues that Law and national governance positively contribute to the financial development of economies (La Porta et al., 1996). Barro (1996) argues that national governance positively contributes to the economic growth. Taking the two aforesaid arguments, we examine whether national governance positively moderates the documented negative relationship between finance and growth. To the extent, national governance lowers the likelihood and magnitude expropriation and corruption, it is plausible to argue, better national governance could direct expansion of credit to the productive sector in the economy, instrumental to achieve economic growth. To assess this moderation effect we estimate economic growth regression equation (4)

$$\text{Growth}_{k,t} = \propto + \omega_1 [NG \times CMD_{k,t}] + \beta_1 CMD_{k,t} + \boldsymbol{\beta_2 X_{k,t}} + \mu_k + \tau_t + \epsilon_{it} \tag{4}$$

where the dependent variable is GDP growth rate (y-o-y) of a country k in year t. NG is national governance that includes control for corruption, government effectiveness, rule of law and regulatory quality and principal component of these variables. $CMD_{k,t}$ is the credit market development variable measured as Domestic Credit/GDP (%). Control variables include include Country Size, GDP per capita, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP and Unemployment rate. All variables are defined in Table Appendix table A1. Standard errors are corrected for double clustering at the country-year levels. The sample period ranges from 1960-2023 for 162 countries. Table 12 reports the finding.

Results from table 12 suggests the negative relation between finance and growth flips to positive when interacted with the national governance quality on the strength of control of corruption, governance effectiveness, rule of law and regulatory quality. This is because strong governance reduces inefficiencies and corruption, thus enhancing the productive use of financial resources.The results highlights the negative relationship between finance and growth is attributed, to a larger extent, to weaker national governance. The results are reported in Table 12 and corroborate to the findings of Barro (1996, 2003) on the determinants of economic growth.

Insert table 12 about here

Conclusion

Contrary to previously held dominant view in the growth and finance literature, we document seemingly unsettling evidence of the negative of finance on economic growth over a long panel of 162 countries for a wider study period of six decades from 1960-2023. The result is robust to employing alternative measure

of finance and stable to sensitivity tests over various sub-period studiesand with the exclusion of crisis periods. The negative result extends not only to the current year but also over a lagged period of two to five years. We also disentangle financial development to institutions and market components and show the negative result is mainly attributed to financial institution depth and access. However, we show the importance of efficiency of financial institutions for positive growth. We explore what drives financial system efficiency and argue that factors like a country's level of democracy, governance quality and corruption play a critical role. Our negative result is explained by the inefficiencies in financial systems, where increased credit disproportionately benefits elite groups and politicians. This is further exacerbated by political motives, elite influence, and corruption who infiltrate financial systems, distorting credit allocation and undermining growth. We show the negative result is driven by deterring democracy and mainly the effect is observed during election period where domestic credit exhibits significant growth in weaker democracies, with adverse consequences on credit quality observed over the subsequent two to four years. The examination of moderating role of national institution reveal that the negative result is driven by weaker national governance and higher corruption risk. Our findings imply more finance simply could mean resource capture by a few that would hinder allocative efficiency and entrepreneurship that ultimately deter growth. Our results underscore the merit of national governance, facilitating democracy that leads efficient financial system and allocative credit efficiency to moderate the link between finance and growth positively.

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Table 1. Summary Statistics

The table provides the summary statistics (count, mean, standard deviation (SD), 1st, 25th, 50th (Median), 75th and 99th percentile) of variables used in this study. Variable include GDP growth, GDP per capita growth, GNI growth, GNI per capita growth, Domestic Credit/GDP, Country Size, GDP per capita, Market Cap/GDP, Financial Development, Credit Development, Credit development Depth, Credit development Access, Credit development Efficiency, Equity development, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP, Unemployment, Billionaire Count, Patent-nonresidents, Patent-residents are as defined in Appendix table A1. Sample period ranges from 1960-2023.

	count	mean	sd	p1	p25	p50	p75	p99
Dependent Variables								
GDP growth	7,002	3.700	5.124	-12.488	1.320	3.808	6.209	21.741
GNI growth	4,038	3.543	4.820	-12.497	1.309	3.666	6.165	17.891
GNI per capita growth	3,977	1.756	4.846	-14.723	-0.559	1.944	4.300	16.054
GDP per capita growth	7,002	1.815	4.989	-14.642	-0.452	1.964	4.318	18.339
Real GDP Growth	6,913	-0.641	14.424	-59.182	-4.830	1.939	6.803	28.911
GDP per capita growth(PPP)	4,549	4.394	5.682	-14.525	1.702	4.447	7.238	22.838
Explanatory Variable								
Domestic Credit/GDP	7,002	39.448	38.572	1.141	12.700	25.764	52.361	184.595
Market Cap/GDP	1,817	60.120	61.333	0.229	18.968	40.070	81.016	330.818
Alternative Proxy:								
Explanatory Variable								
Financial Development	5,154	0.279	0.219	0.029	0.110	0.202	0.374	0.903
Credit Development	5,154	0.368	0.219	0.048	0.192	0.307	0.498	0.925
Credit development Depth	5,154	0.228	0.244	0.001	0.051	0.124	0.320	0.944
Credit development Access	5,154	0.285	0.272	0.000	0.051	0.193	0.445	0.966
Credit development Efficiency	5,154	0.542	0.155	0.055	0.464	0.565	0.650	0.875
Control Variables								
Country Size	7,001	23.273	2.544	18.550	21.311	23.088	25.086	29.206
GDP per capita	7,001	7.671	1.765	4.268	6.249	7.581	9.013	11.185
Inflation	6,999	11.101	26.031	-10.507	1.997	5.263	10.998	131.484
FDI-Outflow/GDP	5,243	1.640	5.753	-5.516	0.000	0.149	0.968	41.162

FDI-Inflow/GDP	6,104	3.657	6.831	-5.656	0.307	1.561	4.269	42.093
Trade/GDP	5,794	75.519	49.829	12.346	42.922	64.026	93.714	313.965
Unemployment	4,353	7.582	5.657	0.600	3.523	5.820	10.196	25.994
Channel Metrics								
Patent-residents	2,520	5.558	2.874	0.693	3.367	5.432	7.419	12.717
Patent-nonresidents	2,765	5.869	2.670	0.693	3.871	5.652	7.909	11.802
Billionaire Count	918	2.092	1.291	0.693	1.099	1.792	2.773	6.301
Democracy Index								
Electoral democracy index	5,463	0.469	0.281	0.016	0.201	0.456	0.731	0.911
Liberal democracy index	5,430	0.374	0.272	0.027	0.118	0.308	0.615	0.881
Participatory democracy index	5,463	0.299	0.212	0.011	0.112	0.265	0.467	0.747
Deliberative democracy index	5,463	0.370	0.266	0.019	0.131	0.318	0.604	0.876
Egalitarian democracy index	5,463	0.360	0.247	0.039	0.147	0.289	0.546	0.870
Corruption Index								
Regime corruption	5,463	0.472	0.301	0.002	0.168	0.514	0.736	0.959
Political corruption index	5,429	0.470	0.293	0.003	0.186	0.497	0.723	0.949
Executive corruption index	5,463	0.471	0.301	0.003	0.174	0.505	0.731	0.970
Public sector corruption index	5,463	0.449	0.295	0.001	0.176	0.455	0.695	0.947
Credit Quality and Allocation Efficiency Ratio	1,395	0.120	2.810	-11.886	-0.152	0.021	0.328	14.337

Table 2A. Baseline Estimations

The table presents regression estimates results for the following economic growth regression specification:

$$\text{Growth}_{k,t} = \propto + \beta_1 Fin_{k,t} + \boldsymbol{\beta_2 X_{k,t}} + \mu_k + \tau_t + \epsilon_{it}$$

Where the dependent variable is GDP growth rate (y-o-y)of a country k in year t. $Fin_{k,t}$ is the financial development variable measured as Domestic Credit/GDP (%).Model 1 presents the regression results with the financial development variable. A model 2, 3, and 4 incorporates sub-period analyses for 1960-1995, 1996-2007, and 2008-2023, respectively. Model 5 displays regression results that include control variables, while Model 6 presents results excluding the crisis period. The Control variables include Country Size, GDP per capita, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP and Unemployment rate and are defined in Table Appendix table A1. Inclusion of country and year fixed effects (FE) is indicated at the end. Standard errors are corrected for double clustering at the country and year levels. The sample period ranges from 1960-2023 for 161 countries. *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	1	2	3	4	5	6
	Baseline results	1960-1995	1996-2007	2008-2023	Baseline results with controls	Excluding Crisis periods
Domestic Credit/GDP	**-0.0325*****	**-0.0208****	**-0.0254*****	**-0.0771*****	**-0.0494*****	**-0.0522*****
	(0.000)	(0.034)	(0.000)	(0.000)	(0.000)	(0.000)
Country Size					1.0398	1.0888
					(0.184)	(0.176)
GDP per capita					0.0295	-0.3771
					(0.971)	(0.666)
Inflation					-0.0108*	-0.0065
					(0.078)	(0.360)
FDI-Outflow/GDP					-0.0430*	-0.0467*
					(0.058)	(0.076)
FDI-Inflow/GDP					0.0790***	0.0824***
					(0.000)	(0.001)
Trade/GDP					0.0284***	0.0209***
					(0.000)	(0.001)
Unemployment					-0.1879***	-0.1698***
					(0.000)	(0.000)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7002.0000	2983.0000	1636.0000	2375.0000	3344.0000	2564.0000
Adj. R2	0.1728	0.1445	0.3030	0.3718	0.3536	0.2959

Table 2B. Additional Macro and Fiscal Controls on Baseline Estimations
The table presents regression estimates results for the following economic growth regression specification:

$$\text{Growth}_{k,t} = \propto + \beta_1 Fin_{k,t} + \boldsymbol{\beta_2 X_{k,t}} + \mu_k + \tau_t + \epsilon_{it}$$

Where the dependent variable is GDP growth rate (y-o-y)of a country k in year t. $Fin_{k,t}$ is the financial development variable measured as Domestic Credit/GDP (%).Model 1 presents the regression results with the financial development variable. A model 2, 3, and 4 incorporates sub-period analyses for 1960-1995, 1996-2007, and 2008-2023, respectively. Model 5 displays regression results that include control variables, while Model 6 presents results excluding the crisis period. The Control variables include Country Size, GDP per capita, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP, Unemployment rate, broad money growth, central government debt, and real interest rate and are defined in Table Appendix table A1. Inclusion of country and year fixed effects (FE) is indicated at the end. Standard errors are corrected for double clustering at the country and year levels. The sample period ranges from 1960-2023 for 161 countries. *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	1	2	3	4	5	6
	Baseline results	1960-1995	1996-2007	2008-2023	Baseline results with controls	Excluding Crisis periods
Domestic Credit/GDP	-0.0325***	-0.0208**	-0.0254***	-0.0771***	-0.0297***	-0.0292***
	(0.000)	(0.034)	(0.000)	(0.000)	(0.000)	(0.000)
Country Size					-0.4324	-0.3364
					(0.755)	(0.835)
GDP per capita					1.6853	1.2026
					(0.264)	(0.493)
Inflation					-0.0325***	-0.0549
					(0.006)	(0.122)
FDI-Outflow/GDP					-0.0319	-0.0249
					(0.329)	(0.446)
FDI-Inflow/GDP					0.0589**	0.0494*
					(0.033)	(0.098)
Trade/GDP					0.0150**	0.0181**
					(0.037)	(0.021)
Unemployment					-0.1969***	-0.2072***
					(0.001)	(0.002)
Broad money growth					0.0521***	0.0824***
					(0.001)	(0.000)
Real interest rate					-0.0682***	-0.0718*
					(0.006)	(0.052)
Central government debt					0.0037	-0.0026
					(0.613)	(0.759)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7002.0000	2983.0000	1636.0000	2375.0000	788.0000	608.0000
Adj. R2	0.1728	0.1445	0.3030	0.3718	0.5179	0.4726

Table 3. Alternative Definition of Growth

The table presents the alternative measure of growth. The alternative measure of growth includes GDP per capita growth, GNI growth, GNI per capita growth, Real GDP growth and Real GDP per capital growth (PPP). The Control variables include Country Size, GDP per capita, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP and Unemployment rate and are defined in Table Appendix table A1. Inclusion of country and year fixed effects (FE) is indicated at the end. Standard errors are corrected for double clustering at the country and year levels. The sample period ranges from 1960-2023 for 162 countries. *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	1	2	3	4	5	6	7	8	9	10
	GNI growth	GNI growth	GNI per capita growth	GNI per capita growth	GDP per capita growth	GDP per capita growth	Real GDP growth	Real GDP growth	Real GDP per capita growth(PPP)	Real GDP per capita growth(PPP)
Domestic Credit/GDP	**-0.031*****	**-0.042*****	**-0.031*****	**-0.040*****	**-0.029*****	**-0.044*****	**-0.038*****	**-0.104*****	**-0.048*****	**-0.054*****
	(0.004)	**(0.005)**	**(0.004)**	**(0.005)**	**(0.003)**	**(0.005)**	**(0.009)**	**(0.015)**	**(0.005)**	**(0.007)**
Country Size		2.370**		2.304**		0.720**		0.203		1.211***
		(0.967)		(1.002)		(0.338)		(2.044)		(0.416)
GDP per capita		-1.409		-1.498				11.423***		
		(1.018)		(1.065)				(2.391)		
Inflation		-0.018**		-0.017**		-0.013**				
		(0.007)		(0.007)		(0.006)				
FDI-Outflow/GDP		-0.051*		-0.052*		-0.058***		-0.166***		-0.075**
		(0.030)		(0.029)		(0.023)		(0.052)		(0.029)
FDI-Inflow/GDP		0.062**		0.071***		0.092***		0.191***		0.102***
		(0.028)		(0.028)		(0.021)		(0.049)		(0.029)
Trade/GDP		0.046***		0.040***		0.023***		0.028		0.025***
		(0.009)		(0.009)		(0.006)		(0.017)		(0.007)
Unemployment		-0.185***		-0.168***		-0.167***		-0.215**		-0.140***
		(0.037)		(0.038)		(0.030)		(0.094)		(0.037)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4037.000	2727.000	3977.000	2719.000	7002.000	3344.000	6913.000	3313.000	4549.000	3322.000
Adj. R2	0.194	0.319	0.176	0.288	0.171	0.337	0.295	0.367	0.270	0.339

Table 4. Growth and Equity market development. Does it behave like Credit market?

The table presents regression estimates results for the following economic growth regression specification:

$$\text{Growth}_{k,t} = \propto + \beta_1 Fin_{k,t} + \boldsymbol{\beta_2 X_{k,t}} + \mu_k + \tau_t + \epsilon_{it}$$

Where the dependent variable is measured through alternative measure of growth (y-o-y) of a country k in year t. The Control variables include Country Size, GDP per capita, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP and Unemployment rate and are defined in Table Appendix table A1. Inclusion of country and year fixed effects (FE) is indicated at the end. Standard errors are corrected for double clustering at the country and year levels. *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	1	2	3	4	5	6	7	8
	GDP growth	GDP per capita growth	GNI growth	GNI per capita growth	GDP growth	GDP per capita growth	GNI growth	GNI per capita growth
Domestic Credit/GDP	**-0.0528***	**-0.0434***	**-0.0451***	**-0.0417***	**-0.0647***	**-0.0446***	**-0.0648***	**-0.0519***
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.003)**	**(0.000)**	**(0.002)**
Market Cap/GDP	**0.0168***	**0.0168***	**0.0210***	**0.0181***	**0.0361***	**0.0372***	**0.0301***	**0.0364***
	(0.000)	**(0.000)**	**(0.000)**	**(0.001)**	**(0.000)**	**(0.000)**	**(0.005)**	**(0.000)**
Country Size	0.5676	1.6991	2.3705	2.9698*	0.9701	2.0006*	2.6556*	3.3326*
	(0.660)	(0.145)	(0.138)	(0.080)	(0.457)	(0.091)	(0.099)	(0.054)
GDP per capita	0.5949	-1.0814	-1.6654	-2.3708	0.1301	-1.4701	-1.9307	-2.7995
	(0.664)	(0.382)	(0.315)	(0.179)	(0.925)	(0.243)	(0.249)	(0.121)
Inflation	-0.0026	-0.0058	-0.0267	0.0066	-0.0035	-0.0058	-0.0291	0.0052
	(0.831)	(0.652)	(0.258)	(0.768)	(0.782)	(0.660)	(0.229)	(0.820)
FDI-Outflow/GDP	-0.0923***	-0.1212***	-0.0654*	-0.0705**	-0.0897***	-0.1177***	-0.0666*	-0.0678**
	(0.002)	(0.000)	(0.085)	(0.042)	(0.002)	(0.000)	(0.077)	(0.049)
FDI-Inflow/GDP	0.1061***	0.1360***	0.0729**	0.0875***	0.1071***	0.1383***	0.0731**	0.0877***
	(0.000)	(0.000)	(0.048)	(0.009)	(0.000)	(0.000)	(0.047)	(0.009)
Trade/GDP	0.0147**	0.0095	0.0278***	0.0252**	0.0172**	0.0118*	0.0289***	0.0278**
	(0.026)	(0.153)	(0.008)	(0.017)	(0.012)	(0.088)	(0.007)	(0.010)
Unemployment	-0.1487***	-0.1193***	-0.1309***	-0.0895*	-0.1381***	-0.1057***	-0.1316***	-0.0820
	(0.000)	(0.002)	(0.008)	(0.073)	(0.001)	(0.008)	(0.009)	(0.110)
Domestic Credit/GDP²					0.0001	-0.0000	0.0001	0.0000
					(0.420)	(0.965)	(0.191)	(0.573)
Market Cap/GDP²					-0.0001***	-0.0001***	-0.0000	-0.0001**
					(0.002)	(0.002)	(0.424)	(0.043)
Country fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1507.0000	1507.0000	1247.0000	1254.0000	1507.0000	1507.0000	1247.0000	1254.0000
Adj. R2	0.4973	0.4678	0.4280	0.3592	0.5002	0.4711	0.4282	0.3608

Table 5. 2S-Least Square IV Regression

The table presents regression estimates results for the following 2SLS regression specification:

Stage 1: $Fin_{k,t} = \propto + \propto_1 PRCRC_{k,t} + \propto_2 PUCRC_{k,t} + \propto_3 X_{k,t} + \epsilon_{it}$

Stage 2: $Growth_{k,t} = \propto + \beta_1 \widehat{Fin}_{k,t} + \beta_2 X_{k,t} + \epsilon_{it}$

where, the dependent variable is GDP growth rate (y-o-y) of a country k in year t. In Model 1, both Public Credit Coverage and private credit Coverage are used as instruments. In Model 2, PCA is conducted for both Public Credit Coverage and Private Credit Coverage. $\widehat{Fin}_{k,t}$ is financial development variable, measured as the predicted value of Domestic Credit/GDP (%) in the first stage regression (Stage 1). The Control variables include Country Size, GDP per capita, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP and Unemployment rate and are defined in Table Appendix table A1. *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	Model 1		Model 2	
	first stage	2nd stage	first stage	2nd stage
Private Credit Coverage	0.5526***			
	(0.000)			
Public Credit Coverage	0.3742***			
	(0.000)			
Predicted Credit/GDP		**-0.0229****		
		(0.014)		
Country Size		-4.2074***		-4.3700***
		(0.006)		(0.005)
GDP per capita		6.5059***		6.7363***
		(0.000)		(0.000)
Inflation		-0.0296**		-0.0298**
		(0.044)		(0.043)
FDI-Outflow/GDP		-0.0463		-0.0432
		(0.102)		(0.129)
FDI-Inflow/GDP		0.0801***		0.0777***
		(0.002)		(0.003)
Trade/GDP		0.0399***		0.0406***
		(0.000)		(0.000)
Unemployment		-0.1545***		-0.1531***
		(0.001)		(0.001)
Scores for component 1			0.1867***	
			(0.000)	
Predicted Credit/GDP				**-0.0268****
				(0.009)
Country FE		Yes		Yes
Year FE		Yes		Yes
Observations	2273.0000	1759.0000	2273.0000	1759.0000
Adj. R2	0.2308	0.3558	0.1915	0.3566

Table 6: Alternative Test: Two-stage least squares regressions

The table represents the instrumental variables (IV) estimation procedure. In the first stage, we employ the lag(2-5) of domestic credit (as % of GDP) as an instrument for current domestic credit (as % of GDP). In the second stage, we use these predicted values (instrumented values) of domestic credit to estimate its effect on GDP growth. The Control variables include Country Size, GDP per capita, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP and Unemployment rate and are defined in Table Appendix table A1. *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	First Stage	Second Stage	First Stage	Second Stage	First Stage	Second Stage	First Stage	Second Stage
L2.Dom Credit (%GDP)	0.8362***							
	0.000							
Lagged (2)Persistence		-0.0449***						
		0.000						
L3.Dom Credit (%GDP)			0.7503***					
			0.000					
Lagged(3) Persistence				-0.0436***				
				0.000				
L4.Dom Credit (%GDP)					0.6677***			
					0.000			
Lagged(4) Persistence						-0.0360***		
						0.000		
L5.Dom Credit (%GDP)							0.5429***	
							0.000	
Lagged(5) Persistence								-0.0293***
								-0.003
Country Size	8.1114***	1.0548	10.5219***	1.0972	11.3397***	1.067	9.9842***	1.1623
	0.000	-0.193	0.000	-0.187	0.000	-0.218	-0.003	-0.192
GDP per capita	-3.3183	0.0447	-3.8541	0.1314	-3.4529	0.1851	-1.0889	-0.0325
	-0.15	-0.958	-0.144	-0.881	-0.246	-0.84	-0.75	-0.973
Inflation	-0.0381	-0.0054	-0.0391	-0.0049	-0.0418*	-0.0055	-0.0474*	-0.0095
	-0.222	-0.39	-0.19	-0.424	-0.062	-0.399	-0.067	-0.18
FDI-Outflow/GDP	0.3972***	-0.0463**	0.5302***	-0.0420*	0.6327***	-0.0445*	0.6553***	-0.0440*
	0.000	-0.044	0.000	-0.076	0.000	-0.067	0.000	-0.079
FDI-Inflow/GDP	-0.1426**	0.0832***	-0.1557*	0.0807***	-0.2069*	0.0829***	-0.1896	0.0818***
	-0.034	0.000	-0.08	0.000	-0.056	0.000	-0.116	0.000
Trade/GDP	-0.0461***	0.0285***	-0.0651***	0.0297***	-0.0765***	0.0312***	-0.0783***	0.0335***
	-0.003	0.000	-0.002	0.000	-0.002	0.000	-0.006	0.000
Unemployment	-0.4744***	-0.1721***	-0.5584***	-0.1808***	-0.4846***	-0.1816***	-0.2277	-0.1855***
	0.000	0.000	0.000	0.000	0.000	0.000	-0.136	0.000
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3256	3256	3208	3208	3160	3160	3110	3110
Adj. R2	0.9607	0.3451	0.9425	0.344	0.9274	0.3387	0.912	0.3327

Table 7. Finance and growth? Employing alternative measure of finance

The table presents regression estimates results for the following economic growth regression specification:

$$\text{Growth}_{k,t} = \propto + \beta_1 Fin_{k,t} + \boldsymbol{\beta_2 X_{k,t}} + \mu_k + \tau_t + \epsilon_{it}$$

Where the dependent variable is GDP growth rate (y-o-y)of a country k in year t. $Fin_{k,t}$is the alternative measure of financial development index provided by IMF database and the Control variables include Country Size, GDP per capita, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP and Unemployment rate and are defined in Table Appendix table A1. Inclusion of country and year fixed effects (FE) is indicated at the end. Standard errors are corrected for double clustering at the country and year levels. The sample period ranges from 1960-2023 for 162 countries. *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	1	2	3	4	5
Financial Development	-6.2177***				
	(0.000)				
Credit Development		-10.3976***			
		(0.000)			
Credit development Depth			-11.3019***		
			(0.000)		
Credit development Access				-5.8758***	
				(0.000)	
Credit development Efficiency					1.9340*
					(0.060)
Country Size	0.8334	0.4971	0.4999	0.7076	1.5446*
	(0.375)	(0.578)	(0.574)	(0.428)	(0.084)
GDP per capita	0.1018	0.8598	0.3275	0.6540	-0.8803
	(0.916)	(0.364)	(0.717)	(0.485)	(0.337)
Inflation	-0.0172***	-0.0182***	-0.0141**	-0.0192***	-0.0170**
	(0.006)	(0.004)	(0.031)	(0.004)	(0.011)
FDI-Outflow/GDP	-0.0476**	-0.0384	-0.0370	-0.0419*	-0.0586**
	(0.043)	(0.100)	(0.119)	(0.075)	(0.015)
FDI-Inflow/GDP	0.0695***	0.0639***	0.0613***	0.0674***	0.0764***
	(0.002)	(0.004)	(0.005)	(0.002)	(0.001)
Trade/GDP	0.0395***	0.0372***	0.0396***	0.0366***	0.0396***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Unemployment	-0.2252***	-0.2327***	-0.2177***	-0.2286***	-0.2237***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	2973.0000	2973.0000	2973.0000	2973.0000	2973.0000
Adj. R2	0.3609	0.3696	0.3733	0.3667	0.3580

Table 8. Role of Finance on Patents and Tycoons

The table present regression estimates results that examine effect of finance on Patents coverage and billionaire count. The Control variables include Country Size, GDP per capita, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP and Unemployment rate and are defined in Table Appendix table A1. Inclusion of country and year fixed effects (FE) is indicated at the end. Standard errors are corrected for double clustering at the country and year levels. .*, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	Patent Application-Resident	Without USA	Patent Application-Non resident	Patent Coverage Without USA	Billionaire	Billionaire Count Without USA
Credit Development	-0.041	-0.060	-0.073	-0.095	-0.555**	-0.570*
	(-0.15)	(-0.22)	(-0.18)	(-0.24)	(-2.33)	(-1.73)
Equity Development	0.985***	0.993***	0.630***	0.649***	0.437***	0.462*
	(6.15)	(6.10)	(3.07)	(3.09)	(2.86)	(1.73)
Country Size	2.230***	2.257***	2.357***	2.423***	-1.141***	-1.145***
	(10.14)	(10.25)	(8.13)	(8.31)	(-4.24)	(-3.84)
GDP per capita	-1.455***	-1.465***	-2.201***	-2.235***	2.378***	2.394***
	(-5.84)	(-5.89)	(-7.09)	(-7.19)	(8.37)	(6.29)
Inflation	0.003***	0.003***	0.001	0.001	0.005	0.005
	(4.27)	(4.21)	(1.03)	(0.98)	(1.01)	(1.28)
FDI-Outflow/GDP	-0.008*	-0.008*	-0.006	-0.005	-0.011**	-0.011**
	(-1.82)	(-1.81)	(-0.83)	(-0.82)	(-2.52)	(-2.25)
FDI-Inflow/GDP	0.007*	0.007*	0.007	0.007	0.011**	0.011**
	(1.72)	(1.71)	(1.30)	(1.29)	(2.51)	(2.41)
Trade/GDP	0.003**	0.003**	-0.006***	-0.006***	-0.004***	-0.004***
	(2.26)	(2.38)	(-3.43)	(-3.20)	(-3.10)	(-2.77)
Unemployment	0.022***	0.022***	0.016**	0.016*	0.049***	0.048***
	(3.83)	(3.77)	(1.99)	(1.88)	(4.79)	(5.31)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1895.000	1864.000	1954.000	1923.000	807.000	786.000
Adj. R2	0.970	0.967	0.935	0.930	0.925	0.901

Table 9. Democracy's Hidden Hand

The table presents regression estimates results for the following economic growth regression specification:

$$\text{Growth}_{k,t} = \propto + \omega_1 [D \times CMD_{k,t}] + \beta_1 CMD_{k,t} + \boldsymbol{\beta_2 X_{k,t}} + \mu_k + \tau_t + \epsilon_{it}$$

where, the dependent variable is GDP growth rate (y-o-y)of a country k in year t. D is variety of Democracy index that includes Electoral democracy index, Liberal democracy index, Participatory democracy index, Deliberative democracy index, Egalitarian democracy index and composite democracy index of these variables. $CMD_{k,t}$ is the financial development variable measured as Domestic Credit/GDP (%).the Control variables include Country Size, GDP per capita, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP and Unemployment rate and are defined in Table Appendix table A1. Inclusion of country and year fixed effects (FE) is indicated at the end. Standard errors are corrected for double clustering at the country and year levels. *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	1	2	3	4	5	6
Domestic Credit/GDP	-0.091***	-0.116***	-0.118***	-0.116***	-0.109***	-0.118***
	(-7.07)	(-8.56)	(-8.47)	(-8.46)	(-8.00)	(-8.39)
[Domestic Credit/GDP*Democracy Index]	0.001***					
	(4.61)					
[Domestic Credit/GDP* Liberal democracy index]		0.009***				
		(6.15)				
[Domestic Credit/GDP* Participatory democracy index]			0.010***			
			(6.17)			
[Domestic Credit/GDP* Deliberative democracy index]				0.009***		
				(6.15)		
[Domestic Credit/GDP* Egalitarian democracy index]					0.008***	
					(5.56)	
[Domestic Credit/GDP* Electoral democracy index]						0.009***
						(6.03)
Country Size	1.874**	2.027**	2.245***	1.999**	1.871**	2.208***
	(2.44)	(2.42)	(2.69)	(2.38)	(2.26)	(2.65)
GDP per capita	-0.454	-0.436	-0.619	-0.423	-0.376	-0.598
	(-0.58)	(-0.53)	(-0.76)	(-0.52)	(-0.46)	(-0.74)
Inflation	-0.012**	-0.005	-0.005	-0.005	-0.005	-0.005
	(-1.97)	(-0.67)	(-0.66)	(-0.73)	(-0.66)	(-0.70)
FDI-Outflow/GDP	-0.047**	-0.039*	-0.041*	-0.039*	-0.040*	-0.042*
	(-2.10)	(-1.74)	(-1.85)	(-1.71)	(-1.80)	(-1.85)
FDI-Inflow/GDP	0.080***	0.074***	0.076***	0.073***	0.074***	0.074***
	(3.90)	(3.43)	(3.53)	(3.36)	(3.40)	(3.42)
Trade/GDP	0.033***	0.031***	0.031***	0.031***	0.030***	0.032***
	(5.35)	(4.44)	(4.41)	(4.47)	(4.28)	(4.51)
Unemployment	-0.188***	-0.169***	-0.169***	-0.171***	-0.166***	-0.169***
	(-5.98)	(-5.91)	(-5.94)	(-5.98)	(-5.79)	(-5.94)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3344.000	2696.000	2696.000	2696.000	2696.000	2696.000
Adj. R2	0.364	0.389	0.392	0.389	0.388	0.390

Table 10. Do Election Cycles Drive Credit Growth at the Cost of Quality?

The table presents regression estimates for the effects of election cycles on domestic credit and the efficiency and quality of credit allocation within the economy. Model 1-2shows the impact of the election period (current year and previous year) on domestic credit as a percentage of GDPunder a deterrent and facilitating democracy framework. Model 3reflects on the influence of the election cycle (lead +1 to lead +4 years) on the financial system's health. The efficiency and quality of credit allocation are measured by the rate of change in non-performing assets (NPAs) relative to the rate of change in lagged domestic credit to the private sector (as a percentage of GDP).

	1	2	3
	Deterrence Democracy	Facilitating Democracy	Credit misallocation
Election Cycle	3.204**	0.851	1.683**
	(2.09)	(0.74)	(2.37)
Election Cycle* Democracy Index			-0.040*
			(-1.75)
Country size	26.757***	-15.704*	-1.142
	(4.20)	(-1.65)	(-0.55)
GDP per capita	-1.416	22.080**	-0.007
	(-0.22)	(2.21)	(-0.00)
Inflation	-0.057	0.240***	-0.005
	(-0.86)	(3.68)	(-0.33)
FDI-out	-1.029*	0.676***	-0.053**
	(-1.79)	(2.69)	(-2.16)
FDI-in	0.251*	-0.407*	0.063***
	(1.72)	(-1.74)	(2.67)
Trade	0.110**	-0.404***	0.005
	(2.30)	(-7.32)	(0.61)
Unemployment	-0.571***	1.249***	0.024
	(-3.00)	(4.68)	(0.50)
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	498.000	1103.000	1184.000
Adj. R2	0.893	0.835	0.040

Table 11. Corruption's Shadow: Unveiling Its Influence on the Finance-Growth Nexus

The table presents regression estimates results for the following economic growth regression specification:

$$\text{Growth}_{k,t} = \propto + \omega_1 \left[C \times CMD_{k,t} \right] + \beta_1 CMD_{k,t} + \boldsymbol{\beta_2 X_{k,t}} + \mu_k + \tau_t + \epsilon_{it}$$

where, the dependent variable is GDP growth rate (y-o-y)of a country k in year t. C is variety of corruption index that includes Regime corruption Index, Political corruption index, Executive corruption index, Public sector corruption index, and composite corruption index of these variables. $CMD_{k,t}$ is the financial development variable measured as Domestic Credit/GDP (%).the Control variables include Country Size, GDP per capita, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP and Unemployment rate and are defined in Table Appendix table A1. Inclusion of country and year fixed effects (FE) is indicated at the end. Standard errors are corrected for double clustering at the country and year levels. *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	1	2	3	4	5
Domestic Credit/GDP	-0.082***	-0.096***	-0.092***	-0.097***	-0.097***
	(-6.18)	(-6.85)	(-6.39)	(-6.90)	(-7.07)
[Domestic Credit/GDP* Corruption Index]	0.001***				
	(3.49)				
[Domestic Credit/GDP* Regime corruption Index]		0.007***			
		(4.29)			
[Domestic Credit/GDP* Political corruption index]			0.006***		
			(3.75)		
[Domestic Credit/GDP* Executive corruption index]				0.007***	
				(4.35)	
[Domestic Credit/GDP* Public sector corruption index]					0.007***
					(4.38)
Country Size	1.275	1.031	0.866	1.084	1.012
	(1.63)	(1.24)	(1.04)	(1.30)	(1.21)
GDP per capita	0.070	0.368	0.475	0.305	0.406
	(0.09)	(0.44)	(0.57)	(0.37)	(0.49)
Inflation	-0.011*	-0.003	-0.003	-0.003	-0.004
	(-1.80)	(-0.44)	(-0.44)	(-0.43)	(-0.52)
FDI-Outflow/GDP	-0.047**	-0.038*	-0.038*	-0.039*	-0.039*
	(-2.11)	(-1.72)	(-1.70)	(-1.77)	(-1.74)
FDI-Inflow/GDP	0.082***	0.074***	0.075***	0.075***	0.075***
	(3.96)	(3.47)	(3.47)	(3.52)	(3.49)
Trade/GDP	0.031***	0.028***	0.028***	0.028***	0.028***
	(4.99)	(3.99)	(3.97)	(4.00)	(4.04)
Unemployment	-0.182***	-0.160***	-0.160***	-0.160***	-0.158***
	(-5.69)	(-5.49)	(-5.45)	(-5.49)	(-5.43)
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	3344.000	2696.000	2696.000	2696.000	2696.000
Adj. R2	0.360	0.384	0.383	0.384	0.383

# Table 12. National Governance at the Helm: Reassessing the Growth Paradox

The table presents regression estimates results for the following economic growth regression specification:

$$\text{Growth}_{k,t} = \propto + \omega_1 \big[NG \times Fin_{k,t} \big] + \beta_1 Fin_{k,t} + \boldsymbol{\beta_2 X_{k,t}} + \mu_k + \tau_t + \epsilon_{it}$$

where, the dependent variable is GDP growth rate (y-o-y)of a country k in year t. NG is national governance that includes control for corruption, government effectiveness, rule of law and regulatory quality and principal component of these variables. $Fin_{k,t}$is the financial development variable measured as Domestic Credit/GDP (%).the Control variables include Country Size, GDP per capita, Inflation, FDI-Outflow/GDP, FDI-Inflow/GDP, Trade/GDP and Unemployment rate and are defined in Table Appendix table A1. Inclusion of country and year fixed effects (FE) is indicated at the end. Standard errors are corrected for double clustering at the country and year levels. *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	1	2	3	4	5
Domestic Credit/GDP	-0.068***	-0.071***	-0.070***	-0.071***	-0.071***
	(-8.79)	(-8.65)	(-8.69)	(-9.06)	(-8.89)
[Corruption Control × Domestic Credit/GDP]	**0.020***				
	(5.25)				
[Governance Effectiveness × Domestic Credit/GDP]		**0.022***			
		(4.43)			
[Rule of Law × Domestic Credit/GDP]			**0.023***		
			(4.90)		
[Regulatory Quality × Domestic Credit/GDP]				**0.023***	
				(4.03)	
[Composite effect × Domestic Credit/GDP]					**0.011***
					(4.89)
Country Size	1.552**	1.647**	1.619**	1.601**	1.629**
	(1.97)	(2.06)	(2.03)	(2.00)	(2.05)
GDP per capita	-0.009	-0.163	-0.057	-0.086	-0.083
	(-0.01)	(-0.20)	(-0.07)	(-0.11)	(-0.10)
Inflation	-0.012*	-0.012*	-0.012*	-0.012*	-0.012*
	(-1.90)	(-1.89)	(-1.93)	(-1.93)	(-1.92)
FDI-Outflow/GDP	-0.049**	-0.050**	-0.049**	-0.049**	-0.050**
	(-2.17)	(-2.19)	(-2.15)	(-2.15)	(-2.19)
FDI-Inflow/GDP	0.084***	0.085***	0.085***	0.084***	0.084***
	(4.01)	(4.02)	(4.03)	(3.96)	(4.02)
Trade/GDP	0.029***	0.029***	0.029***	0.029***	0.029***
	(4.70)	(4.65)	(4.76)	(4.68)	(4.70)
Unemployment	-0.178***	-0.180***	-0.180***	-0.178***	-0.179***
	(-5.61)	(-5.67)	(-5.67)	(-5.62)	(-5.63)
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	3313.000	3313.000	3313.000	3313.000	3313.000
Adj. R2	0.358	0.358	0.358	0.357	0.358

Figure 1: Scatterplot of GDP growth-Domestic credit/GDP
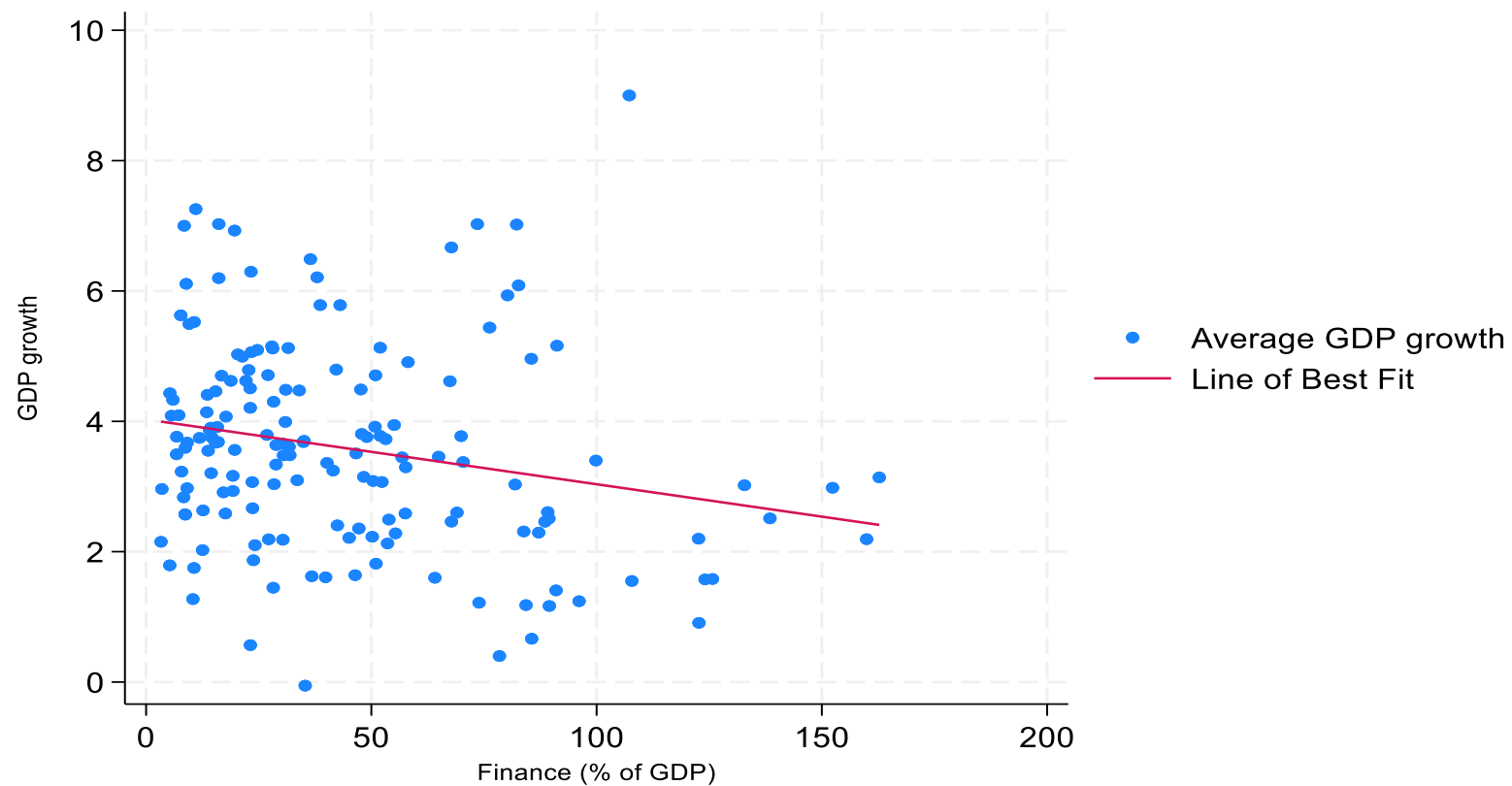
Note: The figure plots the scatter plot along with the line of best-fit of average growth over average domestic credit/GDP (%) of the cross section of sample countries over the period of 1960-2023.

Figure 2: Scatterplot of GDP growth-Financial Development
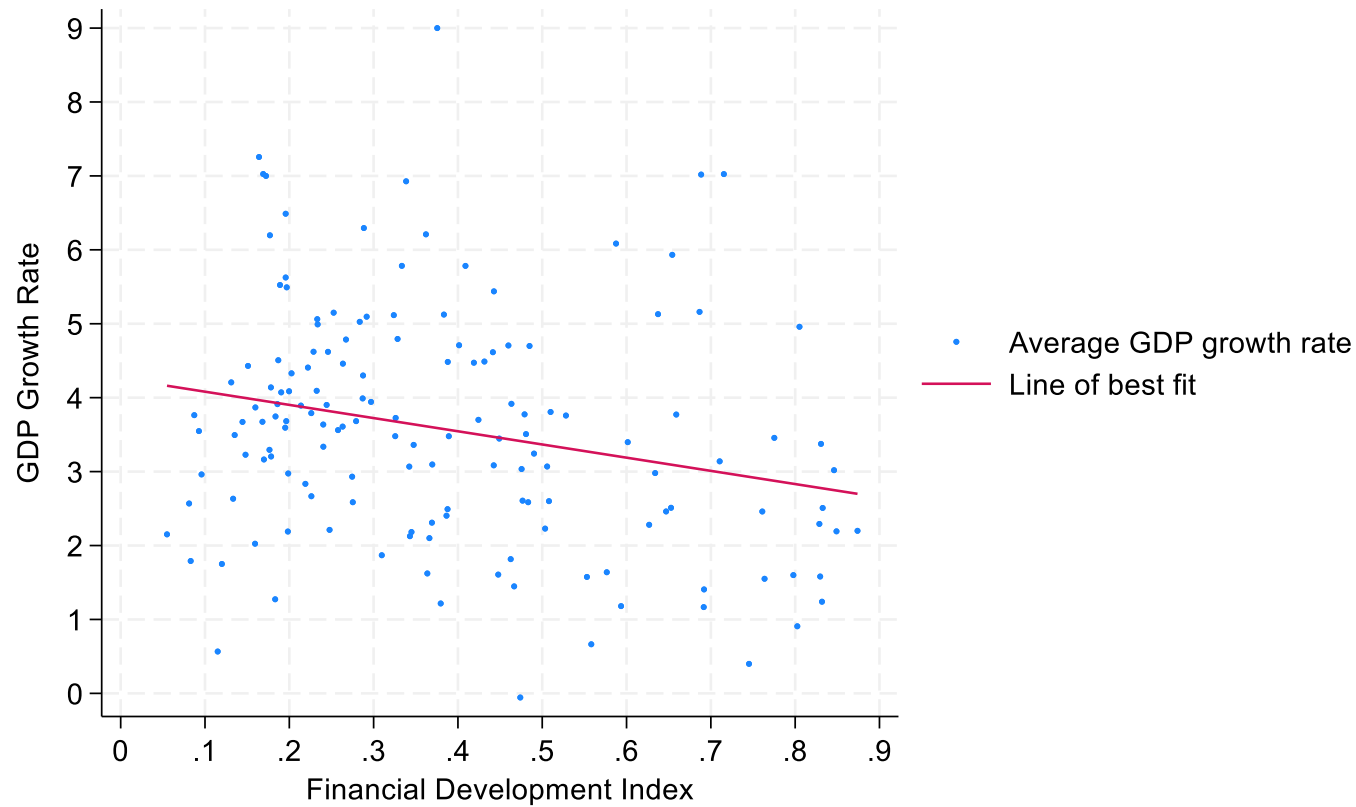
Note: The figure plots the scatter plot along with the line of best-fit of average growth over average Financial Institution index from IMF of the cross section of sample countries over the period of 1960-2023.

Appendix Table A1. Variable definitions and data sources

Variable	Definition	Data Sources
GDP growth (annual %)	Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2015 prices, expressed in U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.	WDI
GDP per capita growth (annual %)	Annual percentage growth rate of GDP per capita based on constant local currency. GDP per capita is gross domestic product divided by midyear population. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.	WDI
GNI growth (annual %)	GNI (formerly GNP) is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad.	WDI
GDP per capita (current US$)	GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars.	WDI
GNI per capita growth (annual %)	Annual percentage growth rate of GNI per capita based on constant local currency. Aggregates are based on constant 2010 U.S. dollars. GNI per capita is gross national income divided by midyear population. GNI (formerly GNP) is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad.	WDI
Real GDP growth	It measures the actual growth without any distorting effects from inflation.	WDI and Author Calculated
Real GDP per capita growth (PPP)	It measures real GDP per capita using purchasing power parity rates.	WDI and Author Calculated
Domestic credit to private sector (% of GDP)	Domestic credit to private sector refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment. For some countries these claims include credit to public enterprises. The financial corporations include monetary authorities and deposit money banks, as well as other financial corporations where data are available (including corporations that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other financial corporations are finance and leasing companies, money lenders, insurance corporations, pension funds, and foreign exchange companies.	WDI
Market capitalization of listed domestic companies (% of GDP)	Market capitalisation (also known as market value) is the share price times the number of shares outstanding (including their several classes) for listed domestic companies. Investment funds, unit trusts, and companies whose only business goal is to hold shares of other listed companies are excluded. Data are end of year values	WDI
Financial Development Index(FD)	A relative ranking of countries on the depth, access, and efficiency of their financial institutions and financial markets. It is aggregate of financial institutions index and financial market index	IMF
Financial Institutions index (FI): Credit Development	It is an aggregate of Financial Institutions depth index, Financial Institutions Access index, Financial Institutions Efficiency index.	IMF
Financial Market index (FM): Equity Development	It is an aggregate of Financial Market depth index, Financial Market Access index, Financial Market Efficiency index.	IMF
Financial Institutions depth index: Credit Development Depth	It includes data on bank credit to private sector in percent of GDP, pension fund assets to GDP, mutual fund assets to GDP, and insurance premiums, life and non life to GDP.	IMF
Financial Institutions Access index: Credit Development Access	It includes bank branches per 100,000 adults and ATMs per 100,000 adults.	IMF
Financial Institutions	It includes banking sector net interest margin, lending deposits spread, non interest income to total income, overhead costs to	IMF

Efficiency index: Credit Development Efficiency	total assets, return on assets and return on equity.	
Trade (% of GDP)	Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product.	WDI
Foreign direct investment, net outflows (% of GDP)	Foreign direct investment refers to direct investment equity flows in an economy. It is the sum of equity capital, reinvestment of earnings, and other capital. Direct investment is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy. Ownership of 10 percent or more of the ordinary shares of voting stock is the criterion for determining the existence of a direct investment relationship. This series shows net outflows of investment from the reporting economy to the rest of the world, and is divided by GDP.	WDI
GDP (current US$)	GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars. Dollar figures for GDP are converted from domestic currencies using single year official exchange rates. For a few countries where the official exchange rate does not reflect the rate effectively applied to actual foreign exchange transactions, an alternative conversion factor is used.	WDI
Unemployment, total (% of total labor force) (modeled ILO estimate)	Unemployment refers to the share of the labor force that is without work but available for and seeking employment.	WDI
Inflation, GDP deflator (annual %)	Inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency.	WDI
Foreign direct investment, net inflows (% of GDP)	Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP.	WDI
Broad money growth (annual %)	Broad money is the sum of currency outside banks; demand deposits other than those of the central government; the time, savings, and foreign currency deposits of resident sectors other than the central government; bank and traveler's checks; and other securities such as certificates of deposit and commercial paper	WDI
Real interest rate (%)	Real interest rate is the lending interest rate adjusted for inflation as measured by the GDP deflator.	WDI
Central government debt, total (% of GDP)	Debt is the entire stock of direct government fixed-term contractual obligations to others outstanding on a particular date. It includes domestic and foreign liabilities such as currency and money deposits, securities other than shares, and loans. It is the gross amount of government liabilities reduced by the amount of equity and financial derivatives held by the government. Because debt is a stock rather than a flow, it is measured as of a given date, usually the last day of the fiscal year.	WDI
Political Stability No Violence (PV)	Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism.	WGI
Control of Corruption (CC)	Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.	WGI
Government Effectiveness	Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.	WGI
Rule of Law	Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	WGI
Regulatory Quality	Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	WGI
Billionaire Count	This includes the yearly total number of billionaires in specific countries.	Forbes Billionaire list obtained from Gigasheet
Patent applications, residents	Resident patent applications are those for which the first-named applicant or assignee is a resident of the State or region concerned. Patent applications are worldwide patent applications filed through the Patent Cooperation Treaty procedure or with a	WDI

	national patent office for exclusive rights for an invention--a product or process that provides a new way of doing something or offers a new technical solution to a problem. A patent provides protection for the invention to the owner of the patent for a limited period, generally 20 years.	
Patent applications, nonresidents	Non-resident patent applications are from applicants outside the relevant State or region.	WDI
Public credit registry coverage	Public credit registry coverage reports the number of individuals and firms listed in a public credit registry with current information on repayment history, unpaid debts, or credit outstanding. The number is expressed as a percentage of the adult population.	WDI
Private credit bureau coverage	Private credit bureau coverage reports the number of individuals or firms listed by a private credit bureau with current information on repayment history, unpaid debts, or credit outstanding. The number is expressed as a percentage of the adult population.	WDI
Electoral democracy index	The electoral principle of democracy seeks to embody the core value of making rulers responsive to citizens, achieved through electoral competition for the electorate's approval under circumstances when suffrage is extensive; political and civil society organizations can operate freely; elections are clean and not marred by fraud or systematic irregularities; and elections affect the composition of the chief executive of the country.	Coppedge, M. et al. (2024)
Liberal democracy index	The liberal principle of democracy emphasizes the importance of protecting individual and minority rights against the tyranny of the state and the tyranny of the majority. The liberal model takes a "negative" view of political power insofar as it judges the quality of democracy by the limits placed on government. This is achieved by constitutionally protected civil liberties, strong rule of law, an independent judiciary, and effective checks and balances that, together, limit the exercise of executive power.	Coppedge, M. et al. (2024)
Participatory democracy index	The participatory principle of democracy emphasizes active participation by citizens in all political processes, electoral and non-electoral. It is motivated by uneasiness about a bedrock practice of electoral democracy: delegating authority to representatives.	Coppedge, M. et al. (2024)
Deliberative democracy index	The deliberative principle of democracy focuses on the process by which decisions are reached in a polity. A deliberative process is one in which public reasoning focused on the common good motivates political decisions—as contrasted with emotional appeals, solidary attachments, parochial interests, or coercion.	Coppedge, M. et al. (2024)
Egalitarian democracy index	The egalitarian principle of democracy holds that material and immaterial inequalities inhibit the exercise of formal rights and liberties, and diminish the ability of citizens from all social groups to participate. Egalitarian democracy is achieved when 1) rights and freedoms of individuals are protected equally across all social groups; and 2) resources are distributed equally across all social groups; 3) groups and individuals enjoy equal access to power.	Coppedge, M. et al. (2024)
Regime corruption	It reflects the extent to which the political actors use political office for private or political gain	Coppedge, M. et al. (2024)
Political corruption index	It reflects the pervasive nature of political corruption	Coppedge, M. et al. (2024)
Executive corruption index	It reflects the extent to which executive members, or their representatives, engage in favor-granting in exchange for bribes, kickbacks, or other material benefits, as well as how frequently they steal, embezzle, or misuse public funds and state resources for personal or family gain.	Coppedge, M. et al. (2024)
Public sector corruption index	It reflects to what extent do public sector employees grant favors in exchange for bribes, kickbacks, or other material inducements, and how often do they steal, embezzle, or misappropriate public funds or other state resources for personal or family use	Coppedge, M. et al. (2024)
Credit Quality and Allocation Efficiency Ratio	It is the rate of change in non-performing assets (NPAs) relative to the rate of change in lagged domestic credit to the private sector (as a percentage of GDP). It reflects the health of the financial system, indicating whether credit is being efficiently allocated to drive productive sectors.	WDI and Author Calculated

Appendix Table A2. Country wise Average Domestic Credit and Growth

Country	Average GDP Growth(%)	Average Domestic Credit/GDP(%)	Number of Observations
Algeria	3.637	28.880	60
Antigua and Barbuda	3.507	46.609	46
Argentina	2.586	17.607	57
Aruba	3.775	52.014	37
Australia	3.376	70.382	63
Austria	1.406	91.010	23
Bahamas, The	2.229	50.209	44
Bahrain	4.795	42.210	45
Bangladesh	5.062	23.396	50
Barbados	1.816	51.043	56
Belgium	1.600	64.106	23
Belize	4.474	33.995	48
Benin	3.894	14.641	63
Bhutan	6.295	23.282	40
Bolivia	3.479	31.914	62
Bosnia and Herzegovina	2.586	57.548	18
Botswana	6.927	19.640	52
Brazil	3.807	47.860	61
Brunei Darussalam	-0.055	35.314	18
Bulgaria	1.639	46.405	33
Burkina Faso	4.407	13.624	62
Burundi	2.633	12.639	60
Cabo Verde	6.210	37.979	43
Cambodia	6.489	36.484	31
Cameroon	3.673	15.427	59
Canada	3.457	64.942	48
Central African Republic	1.751	10.634	62
Chad	3.229	7.863	61
Chile	3.399	99.855	23
China	9.000	107.254	47
Colombia	3.990	30.916	61
Comoros	2.569	8.731	42
Congo, Dem. Rep.	2.152	3.319	57
Congo, Rep.	3.548	13.774	63
Costa Rica	3.918	50.820	19
Cote d'Ivoire	4.207	23.135	62
Cyprus	2.980	152.375	23
Czechia	2.356	47.227	31
Denmark	2.460	88.555	63
Dominica	2.404	42.464	46
Dominican Republic	5.096	24.706	20
Ecuador	3.609	31.737	22
Egypt, Arab Rep.	5.150	27.940	63
El Salvador	2.126	53.600	23
Equatorial Guinea	7.256	11.029	39
Eritrea	2.190	27.216	17
Estonia	2.600	69.006	20
Eswatini	4.621	18.825	51

Ethiopia	4.094	7.242	47
Fiji	2.310	83.828	23
Finland	1.181	84.334	23
France	1.240	96.121	23
Gabon	3.869	14.092	59
Gambia, The	3.746	11.880	55
Georgia	4.706	50.946	16
Germany	1.167	89.508	22
Ghana	3.674	9.116	63
Greece	0.665	85.596	23
Grenada	3.085	50.394	46
Guatemala	3.479	30.514	23
Guinea	4.430	5.309	30
Guinea-Bissau	3.764	6.806	38
Guyana	3.683	34.922	44
Haiti	1.273	10.395	63
Honduras	3.727	53.194	23
Hong Kong SAR, China	3.139	162.747	34
Hungary	1.607	39.848	42
IDA total	3.755	14.581	61
Iceland	3.772	69.931	63
India	5.117	28.094	61
Iran, Islamic Rep.	4.709	27.068	55
Iraq	6.110	8.909	36
Ireland	4.960	85.505	23
Israel	5.130	51.960	63
Italy	0.400	78.441	23
Jamaica	1.448	28.232	57
Japan	2.192	159.941	54
Jordan	4.615	67.443	47
Kenya	4.622	22.191	63
Korea, Rep.	7.025	73.531	63
Kuwait	2.493	53.900	48
Kyrgyz Republic	4.139	13.464	29
Lao PDR	7.000	8.455	22
Lebanon	5.439	76.259	29
Lesotho	3.903	14.385	51
Liberia	1.791	5.256	48
Libya	4.461	15.442	63
Luxembourg	2.509	89.414	23
Macao SAR, China	5.933	80.235	40
Madagascar	2.025	12.537	62
Malawi	3.495	6.780	44
Malaysia	6.085	82.686	63
Maldives	5.784	38.661	20
Mali	4.072	17.744	56
Malta	5.161	91.215	19
Mauritania	3.683	15.985	45
Mauritius	4.489	47.677	63
Mexico	2.100	24.170	27
Micronesia, Fed. Sts.	0.566	23.148	27
Mongolia	4.484	31.010	33

Montenegro	3.148	48.313	22
Mozambique	6.197	16.132	33
Myanmar	5.626	7.713	60
Nepal	3.791	26.820	63
Netherlands	1.551	107.827	23
Nicaragua	3.337	28.844	23
Niger	2.975	9.110	62
Nigeria	3.594	8.718	62
Norway	1.575	124.089	23
Oman	5.125	31.550	52
Pakistan	4.992	21.351	63
Paraguay	4.507	23.100	63
Peru	3.561	19.686	62
Philippines	4.301	28.311	63
Poland	3.701	35.060	33
Portugal	0.908	122.723	23
Qatar	5.783	43.074	53
Romania	3.068	23.575	28
Russian Federation	3.244	41.518	21
Rwanda	5.493	9.577	60
Samoa	1.217	73.908	17
Sao Tome and Principe	3.295	57.637	29
Saudi Arabia	5.027	20.375	57
Senegal	3.164	19.259	63
Serbia	3.097	33.553	27
Seychelles	4.700	16.761	46
Sierra Leone	2.962	3.513	63
Singapore	7.019	82.270	58
Slovak Republic	3.069	52.354	18
Slovenia	2.281	55.364	20
Small states	3.031	81.921	23
Solomon Islands	2.667	23.640	43
Somalia	2.574	8.652	29
South Africa	2.608	89.160	58
Spain	1.581	125.735	23
Sri Lanka	4.787	22.785	58
St. Kitts and Nevis	3.759	48.985	45
St. Lucia	3.447	56.827	44
St. Vincent and the Grenadines	3.362	40.163	49
Sudan	2.835	8.358	62
Suriname	1.869	23.826	57
Sweden	2.461	67.797	63
Switzerland	2.200	122.631	56
Syrian Arab Republic	5.525	10.672	51
Tajikistan	7.026	16.141	16
Tanzania	4.330	5.966	63
Thailand	2.511	138.492	17
Timor-Leste	3.205	14.439	22
Togo	3.913	15.815	62
Tonga	1.623	36.789	41
Trinidad and Tobago	3.035	28.414	63
Tunisia	3.943	55.072	50

Turkiye	4.907	58.147	16
United Kingdom	2.293	87.158	63
United States	3.019	132.830	63
Uruguay	2.183	30.367	63
Vanuatu	2.212	45.072	44
Venezuela, RB	2.932	19.282	53
Viet Nam	6.668	67.787	30
West Bank and Gaza	3.660	30.311	26
Yemen, Rep.	4.087	5.643	23
Zimbabwe	2.911	17.188	41