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Research Paper

Political freedom and financial inclusion: Unraveling social trust and political rent-seeking

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ABSTRACT

This paper delves into the role of political rights in shaping financial inclusion. Despite the acknowledged significance of political institutions in influencing financial systems, there remains limited understanding of the economic origins of the impact of political institutions on financial inclusion. Utilizing data from the 2021 Global Findex database, the study finds that weak political rights significantly reduce the likelihood of individuals possessing financial accounts and using digital financial services. Robustness tests employing an instrumental variable and the difference-in-differences framework confirm that inadequate political rights have a detrimental effect on financial inclusion. By exploring the reasons for financial exclusion and moderating factors, this study provides supportive evidence for the mechanisms of eroded social trust and political rent-seeking as the key constraints that hinder inclusiveness in providing mainstream financial products and services.

1. Introduction

A growing body of literature has provided evidence that financial inclusion, defined as the access and utilization of affordable financial services by individuals, can bring both micro and macroeconomic benefits to society. For instance, financial inclusion can contribute to macroeconomic benefits such as poverty reduction, financial stability, and economic growth (e.g., Beck et al., 2007; Bruhn and Love, 2014; Ahamed and Mallick, 2019), as well as microeconomic benefits including improved household wealth, increased savings, and greater expenditure (e.g., Agarwal et al., 2017; Schaner, 2018; Célerier and Matray, 2019). In an effort to realize the numerous benefits of inclusive financial systems, governments in over 60 countries have set official targets for financial inclusion by 2015, and this issue continues to attract significant attention from policymakers (Sahay et al., 2015; Demirgüç-Kunt

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et al., 2017). According to a World Bank report (Demirgüç-Kunt et al., 2017), the global level of financial inclusion in 2017 was 7% higher than in 2014 and 18% higher than in 2011. Previous studies suggest that digital financial services play a crucial role in mitigating financial exclusion (e.g., Mallat, 2007; Merritt, 2011; Sahay et al., 2015; Gomber et al., 2017; Ozili, 2018). However, despite the acknowledged benefits of financial inclusion, one-third of adults still remain excluded from mainstream financial services.

A recent strand of studies investigates the causes of financial exclusion, including factors such as transaction costs, financial literacy, and trust (Bachas et al., 2018; Grohmann et al., 2018; Allen et al., 2021; Lu et al., 2021). However, less is known about the economic origins of the impact of political institutions on financial inclusion. Strong political rights indicate a political system that comprises free and fair elections, competitive political parties, and an opposition that plays an important role and holds actual power. Weak political freedom, on the other hand, is typically associated with reduced government accountability, lower property and human rights, and limited freedom of expression. Given the significant role that political institutions play in shaping financial sectors (e.g., Roe, 2006; Keefer, 2008; Roe and Siegel, 2011), this study aims to investigate how political rights contribute to financial inclusion.

Based on the theory of political rent-seeking, an environment with strong political rights encourages public monitoring, increases political competition, and curbs corruption. Such an environment prevents politicians from expropriating household wealth to pursue their own interests, resulting in more discretionary money being available to households, thus enabling them to access financial services (Glaeser et al., 2004; Stulz, 2005; Jensen, 2008; Jensen and Johnston, 2011; Boubakri et al., 2013). Furthermore, politicians may distort the function and efficiency of financial institutions by exerting control to pursue self-interested projects; a situation which is less likely to occur in environments with strong political rights. From the perspective of trust, a low level of political trust caused by weak political rights reduces social trust, which, in turn, weakens the trust and confidence of the public towards financial institutions (Berman, 1997; Brehm and Rahn, 1997; Hall, 1999; Delhey and Newton, 2005; Nannestad, 2008; Rothstein and Stolle, 2008; Tao et al., 2014). This diminished trust can also impede the use of digital financial services by households, as government surveillance in low political rights settings may exploit private information for private interests (Haggerty and Ericson, 2000; Cohen, 2013). Therefore, we posit that weak political rights negatively affect financial inclusion by eroding household wealth and trust.

Using the data of 136 countries in the 2021 Global Findex database, we investigate the impact of political rights on financial inclusion and find evidence that supports our hypothesis. Specifically, we find that weak political rights significantly decrease the probability of individuals possessing financial accounts and utilizing financial services, and that the impact is also economically significant. To further assess the robustness of our findings, we conduct various tests. We use subsample tests to determine whether the impact of political rights on financial inclusion is influenced by factors such as economic development, political risk, and economic freedom. We also use data from the Financial Access Survey (FAS) as an alternative sample to check whether our results hold for country-level tests. To address concerns of endogeneity, we employ a two-stage least squares (2SLS) method with the instrumental variable being a country's political rights index. Additionally, we employ a difference-in-differences framework. In the framework, a significant improvement in political freedom is considered to be a shock for political rights. Our robustness tests further support the negative impact of weak political rights on financial inclusion.

We then explore the reasons behind financial exclusion in an environment with weak political rights. Our findings suggest that individuals living in such environments do not possess financial accounts due to a lack of trust in financial institutions and a lack of money, which supports the argument that weak political rights impede financial inclusion through political rent-seeking and the deterioration of social trust. To gain a better understanding of the mechanisms of political rent-seeking, we further test the moderating roles of corruption, government effectiveness, government ownership, and bank competition. Our results indicate that the impact of weak political rights on financial inclusion is attenuated by the control of corruption and government effectiveness, and is intensified by bank concentration. These findings imply that weak political rights promote political rent-seeking through distortions in financial institutions' capital allocation, resulting in low financial inclusion. Additionally, we further investigate the impact of political rights on digital payment systems, as these play a non-trivial role in promoting financial inclusion. Our findings reveal that weak political rights raise individuals' privacy concerns and reduce the probability of such individuals accessing digital financial services.

Our study makes several contributions to the literature on financial inclusion and its determinants. Previous research has highlighted the role of financial inclusion in alleviating poverty (Burgess and Pande, 2005; Prina, 2015; Célerier and Matray, 2019; Zhang and Posso, 2019), improving financial stability (Sahay et al., 2015; Ahamed and Mallick, 2019) and fostering economic growth (Levine, 2005; Beck et al., 2007). Given the significant benefits of financial inclusion, a growing body of literature has begun to study its determinants (Allen et al., 2016; Brown et al., 2016; Demirgüç-Kunt et al., 2017; Grohmann et al., 2018; Ji, 2020; Lu et al., 2021). Our study makes a unique contribution to this literature by evidencing the non-trivial role of political rights in the development of financial inclusion. To the best of our knowledge, we are the first to investigate how political rights affect financial inclusion and the mechanisms underlying this relationship.

Finally, our study contributes to the literature on the relationship between political trust and social trust. Prior research has highlighted the role of political rights in shaping generalized trust (Berman, 1997; Brehm and Rahn, 1997; Hall, 1999; Delhey and Newton, 2005; Nannestad, 2008; Rothstein and Stolle, 2008; Tao et al., 2014). Our study extends this literature by demonstrating how political trust is linked to mistrust in financial institutions, providing further evidence that trust in political institutions can spill over into the financial sector.

This study also has significant implications for policymakers. With financial inclusion gaining increasing attention and more countries setting goals to achieve inclusive financial systems (Sahay et al., 2015; Demirgüç-Kunt et al., 2017), our study highlights the importance of considering political factors when developing policies related to financial inclusion, particularly those that involve financial institutions in the implementation of such policies.

The remainder of the paper is structured as follows. In Section 2, we review the existing literature on financial inclusion and political rights. Section 3 provides details on the data and empirical design. The results of our empirical tests, robustness checks, and further analysis are presented in Section 4. We conclude the study in Section 5.

2. Literature review and hypothesis development

2.1. Financial inclusion

The benefits of financial inclusion to societies and economies have been well documented in the finance and economics literature. At the micro-level, financial inclusion can benefit lower-income households through savings, spending, and a reduction in transaction costs. Field experiments have provided ample evidence to support this claim. For instance, Ashraf et al. (2010) document that accessing commitment savings products increases female empowerment and the purchase of female-oriented durable goods in Filipino households. Dupas and Robinson (2013) and Schaner (2018) find that improved financial inclusion increases investment in preventative healthcare and household income in Kenya. Prina (2015) finds that a reduction in the transaction costs of savings accounts improves the financial situation of poor households in Nepal. Agarwal et al. (2017) find that the launch of the financial inclusion program in India increased savings and medical expenditure for unbanked households in India. Célerier and Matray (2019) finds that expanding bank branches fosters low-income household wealth accumulation in the U.S. Zhang and Posso (2019) document that financial inclusion positively impacts household income in China.

In terms of the macro-level benefits, prior studies document that financial inclusion can alleviate poverty, improve financial stability, and foster economic growth. In support of this argument, Burgess and Pande (2005) find that branch expansion significantly reduces poverty in India. Additionally, Bruhn and Love (2014) document evidence of poverty alleviation, employment improvement, and economic growth in Mexico. Among the international studies, Levine (2005) argues that financial development boosts economic growth by easing external financing constraints for firms. Beck et al. (2007) find that an inclusive financial system helps to reduce income inequality and poverty. Sahay et al. (2015) report that expanded access to credit increases financial stability under adequate supervision. Ahamed and Mallick (2019) indicate that inclusive financial sectors enhance bank stability. Additionally, Ahamed et al. (2021) uncover evidence suggesting that banks in countries with a more inclusive banking sector tend to achieve higher levels of operating efficiency, with this effect being particularly pronounced for banks operating in developing economies.

2.1.1. Determinants of financial inclusion

Although we can observe that governments across the world are committed to increasing their financial service system inclusivity, survey evidence suggests that a large proportion of adults remain unbanked (Demirgüç-Kunt et al., 2017). This has motivated researchers to explore the reasons behind exclusive financial sectors. Prior studies have identified various obstacles to financial inclusion, such as a lack of awareness, documentation requirements, and cultural factors (Aggarwal and Klapper, 2013; Kosse, 2013; Karlan et al., 2014; Allen et al., 2016). Among the country-specific studies, Bachas et al. (2018) and Demirgüç-Kunt and Klapper (2012) find supportive evidence that the distance to bank branches impedes access to financial services in Mexico and in Africa. Allen et al. (2021) document that the financial institution expansion strategy is crucial for achieving a high level of inclusivity in Kenya.

Among the cross-country studies, Demirgüç-Kunt and Klapper (2013) and Brown et al. (2016) document evidence for the impact of cost, distance, and documentation requirements on financial inclusion. Banerjee et al. (2011), Karlan et al. (2014), Grohmann et al. (2018), and Goczek and Witkowski (2016) argue that high transaction costs, low financial literacy, and a lack of trust in banking institutions significantly contribute to financial exclusion. Allen et al. (2016) investigate the determinants of financial inclusion from a political perspective and find that political uncertainty is negatively associated with financial inclusion. Abu et al. (2015) find that a reduction in political corruption raises the public's ability to save in the Economic Community of West African States and argue that curbed political corruption creates household wealth through an increase in government revenue, human capital investment, and employment opportunities. Lu et al. (2021), Ji (2020), and Xu (2020) link national culture with financial inclusion and found that a strong culture of individualism, religiosity, and social trust increases trust in financial institutions, leading to a higher level of financial inclusion.

2.2. Political institutions

2.2.1. Political rent-seeking

Theoretically, politicians may be incentivized to prioritize their own welfare over that of society (e.g., Becker and Stigler, 1974; Becker, 1983; Shleifer and Vishny, 1993; Kroszner and Stratmann, 1998; Shleifer and Vishny, 1998; Stulz, 2005). Shleifer and Vishny (1993) argue that weak political institutions can lead to corrupt bureaucracies that demand secrecy in exchange for bribes by distorting expenditure and imposing regulations. Kroszner and Stratmann (1998) suggest that congressional committees can be used by members of Congress to pursue long-term political contributions despite legal restrictions on bribery. Studies have also provided evidence for the private interest theory. Kane (1989, 1990) documents that regulators' political interests can weaken the enforcement of government programs. Kroszner and Strahan (1999) find that state-level deregulation of bank branching restrictions in the U.S. was influenced by political interest groups. Stulz (2005) posits that weak political institutions can lead governments to exert excessive influence on companies through regulation, bribes, taxes, and expropriation of assets. Brown and Dinc (2005) find cross-country evidence in emerging markets that the implementation of existing regulations is driven by political concerns.

In line with the political rent-seeking explanation, prior studies empirically investigate the impact of political institutions on the behavior of financial institutions and the efficiency of financial markets. Khwaja and Mian (2005) find that government banks in Pakistan grant politically-favored loans to politically-connected firms, which tend to perform poorly. Faccio et al. (2006) provide cross-country evidence that companies with political connections are more likely to receive bailouts when they declare bankruptcy. Claessens et al. (2008) find that, in Brazil, firms that make political campaign contributions, and that have low investment opportunities, have better access to bank credit following elections. Calomiris (2009) argues that subsidies or special rights granted by governments to favored participants in the banking sector play a significant role in the likelihood of banking crises. Braun and Raddatz (2010) find that under low-quality political institutions, banks tend to use political connections to gain a favorable position by influencing bank regulation. Similarly, Duchin and Sosyura (2010) document that political connections allow banks to receive favorable treatment in government capital allocation during financial crises. Duchin and Sosyura (2012) find that politically connected banks were more likely to receive bailouts, but earned lower returns for taxpayers. Mian et al. (2013) and Igan et al. (2012) find evidence of political rent-seeking in the mortgage market during the expansion of subprime lending.

2.2.2. Government ownership

Another strand of studies highlights the role of government ownership in financial development, capital allocation efficiency, and economic growth under weak political institutions (e.g., Shleifer and Vishny, 1998; Barth et al., 2001; La Porta et al., 2002). Rent-seeking activities in financial sectors tend to be more concentrated in banks with high government ownership (Sapienza, 2004; Dinç, 2005; Khwaja and Mian, 2005; Cole, 2009), as high government ownership allows politicians to act in their own self-interest, rather than in the best interests of society (e.g., Stigler, 1971; Kalt and Zupan, 1984; Peltzman, 1985). In line with this argument, Barth et al. (2004) find cross-country evidence that government ownership of banks is negatively associated with bank growth, efficiency, and stability. Dinç (2005) finds that politicians can use government-owned banks to distribute rents to their supporters in countries with weak political institutions. As a result, political rent-seeking activities incur high social costs due to restricted access to credit.

2.2.3. Monitoring

In addition to the rent-seeking theory, political science literature also highlights the importance of strong political institutions in promoting efficient government decision-making. According to democratic theory, granting citizens political rights to form political parties, thus enabling them to elect and monitor government officials, enhances political competition and government accountability, promotes freedom of information, and curbs corruption (Wittman, 1989; Girling and Staff, 1997; Sandholtz and Koetzle, 2000; Treisman, 2000; Lederman et al., 2005; Shen and Williamson, 2005; Tavits, 2007; Billger and Goel, 2009; Bhattacharyya and Hodler, 2010). Therefore, weak political rights can incentivize financial institutions to intervene in financial markets to pursue political interests, leading to the distortion of resource allocation. In line with this argument, T. Beck et al. (2006) find cross-country evidence that the monitoring and discipline of private agencies are more efficient than those of official supervisory agencies in improving the integrity of bank lending, and that such benefits are more profound in countries with high-quality political institutions.

2.2.4. Social trust

The role of the structure and characteristics of political rights in forming generalized trust is well documented in the political science literature (Berman, 1997; Brehm and Rahn, 1997; Hall, 1999; Delhey and Newton, 2005; Nannestad, 2008; Rothstein and Stolle, 2008; Tao et al., 2014). Low-quality political institutions can create a corrupt environment, which worsens political trust among the public and eventually damages social trust. In line with this argument, Brehm and Rahn (1997) find that weak political institutions erode the public's confidence in political authorities, which reduces interpersonal trust. Hall (1999) provides evidence for the positive relationship between the political participation of citizens and social trust in Britain. Seligson (2002) notes that exposure to corruption erodes belief in the political system and weakens interpersonal trust. Delhey and Newton (2005), Nannestad (2008), and Rothstein and Stolle (2008) investigate the cross-country determinants of trust and highlight the role of the quality of political institutions in determining social trust. Chang and Chu (2006) find strong evidence for the trust-eroding effect of political corruption in Asia. Richey (2010) documents that convictions for governmental corruption lower social trust. Tao et al. (2014) provide survey evidence that political trust positively impacts social trust in China. Overall, previous studies have clearly demonstrated that strong political institutions improve public trust towards authorities, which, in turn, creates generalized trust.

2.2.5. Digital financial inclusion

The entry of digital financial platforms into the financial services sector has revolutionized finance and financial inclusion, as the prevalence of mobile telephony and internet broadband lower the cost of financial transactions (Jack and Suri, 2014; Bachas et al., 2018). Previous studies have recognized the importance of digital financial services as a solution for financial exclusion (Mallat, 2007; Merritt, 2011; Sahay et al., 2015; Gomber et al., 2017; Ozili, 2018). For instance, digital payment systems accessed via mobile phones allow users to benefit from the independence of time and location when making transactions (Lang and Jarvenpaa, 2005; Constantiou et al., 2006), thereby increasing household willingness to employ financial services. In line with this argument, T. Beck et al. (2007) and Sarma and Pais (2011) find that mobile phone and internet usage are positively associated with the level of financial inclusion.

Despite the known benefits of employing digital financial services, households may be hesitant to engage with digital payment systems due to privacy concerns, such as authentication and confidentiality issues, as well as secondary use and unauthorized access to payment details and private information (Dewan and Chen, 2005; Mallat, 2007; Acquisti et al., 2016). For instance,

providers of commercial payment platforms may collect customers' payment information to conduct price discrimination against future consumption (Kahn et al., 2005; Kummer and Schulte, 2019; Garratt and Van Oordt, 2021).

2.3. Hypotheses

As the restriction of political rights impairs monitoring by the public, such an environment can, in turn, provide a breeding ground for corruption and harm financial inclusion in two key areas. Firstly, weak political institutions can reduce household wealth through government expropriation and by incentivizing financial institutions to pursue political benefit at the cost of society (Glaeser et al., 2004; Stulz, 2005; Jensen, 2008; Jensen and Johnston, 2011; Boubakri et al., 2013). This discourages financial inclusion by reducing discretionary money for households. Secondly, low political trust in ineffective and unfair political institutions erodes social trust (Berman, 1997; Brehm and Rahn, 1997; Hall, 1999; Delhey and Newton, 2005; Nannestad, 2008; Rothstein and Stolle, 2008; Tao et al., 2014), which can reduce the trust and confidence of the public towards financial institutions, leading to a lower level of financial inclusion. In terms of digital financial inclusion, in countries with weak political institutions, government surveillance can allow the flow of information to serve private interests (Haggerty and Ericson, 2000; Cohen, 2013), raising households' privacy concerns and reducing the likelihood of such households accessing digital financial services. Overall, we expect to find that weak political institutions are negatively associated with financial inclusion due to the erosion of household wealth and trust.

3. Data and methodology

We collect data from the 2021 Global Findex database, as suggested by Demirgüç-Kunt et al. (2020), to gather information on household financial inclusion. The Global Findex database offers a wealth of information on individuals' saving, borrowing, and payment habits across more than 140 economies. Additionally, we incorporate the political rights index from Freedom House to further analyze the relationship between political rights and financial inclusion. In line with previous studies (Qi et al., 2010; Boubakri et al., 2014; Guedhami et al., 2017; Sha et al., 2021), the political rights index ranges from one to seven, with a higher score indicating a lower level of political rights. Control variables are obtained from the Financial Access Survey (FAS), World Development Indicators (WDI), and Worldwide Governance Indicators (WGI). Finally, we exclude observations with missing or ambiguous responses regarding financial accounts. After data cleaning, our sample includes 141,666 observations across 136 countries.

To test our hypothesis, we use ordinary least square (OLS) regression to estimate the following equation:

$$Financial\ inclusion_{i,j} = \beta_0 + \beta_1 Weak\ political\ rights\ index_j + \beta_2' X_i + \beta_3' X_j + \nu_c + \epsilon_{i,j}, \quad (1)$$

where *i*, *j*, and *c* denote individual, country, and continent, respectively. *Financial inclusion* is the dependent variable that measures an individual's access to financial services, including accounts (*Financial accounts*, *Debit card*, and *Credit card*) and usage (*Deposit*, *Withdraw*, *Save*, *Use of debit card*, and *Use of credit card*). The independent variable of interest is *Weak political rights index*, which measures the degree of political rights in a country, and β_1 captures the impact of political rights on financial inclusion. We control for various factors in X that are known to have an impact on financial inclusion (e.g., T. Beck et al., 2007; Allen et al., 2016; Lu et al., 2021). X_i represents individual-level control variables, such as age (Age), squared age ($AgeSQ$), gender ($Gender$), income quintile ($IncomeQuintile$), workforce status ($Workforce$) and education level ($Tertiary$). X_j includes country-level control variables, such as ATM branches per 1,000 km^2 ($ATM\ penetration$), bank branches per 1,000 km^2 ($Branch\ penetration$), GDP per capita (*GDP per capita*), GDP per capita growth (*GDP per capita growth*) and the degree of financial development (*Financial development*). We include continent-fixed effects (ν_c) in the regression. The definitions and sources of variables are reported in Table 1.

4. Empirical results

4.1. Descriptive statistics and preliminary results

Table 2 presents the summary statistics for the sample of baseline regressions. In Panel A, it is evident that approximately 65.9% of respondents experienced financial exclusion globally in 2021. Specifically, 50.6% of respondents were debit card holders, and approximately 75% of them used their cards in the past 12 months. Only 34.8% of respondents held credit cards in 2021, but 82.4% of them used their cards in the past 12 months, indicating that credit card holders are more likely to utilize their cards than debit card holders. The decision to save is less common compared with decisions to deposit or withdraw. Nevertheless, less than half of respondents did not have access to any of these three financial services. Our findings suggest that financial exclusion remains prevalent and requires significant attention.

In Panel B, the mean and median of *Weak political rights index* for our sample are 3.36 and 3.00, respectively, indicating that respondents generally have a moderate level of political rights. To further exploit the distribution of political rights and financial inclusion, we plot *Weak political rights index* and the degree of financial inclusion measured by *Financial accounts* for each country in Figs. 1 and 2. Fig. 1 shows that countries with higher levels of political rights tend to be concentrated in North America, Europe and Oceania, and that they also have higher levels of financial inclusion, as shown in Fig. 2. Therefore, the initial evidence supports our hypothesis that high levels of political rights are positively associated with financial inclusion.

Table 1
Variable description and sources. This table reports the description and sources of each variable used in this study.

	Description	Database
Panel A. Individual – level variables		
Financial accounts	A dummy variable equals one if a respondent has an account at a financial institution and zero otherwise.	2021 Global Findex
Debit card	A dummy variable equals one if a respondent has a debit card and zero otherwise.	2021 Global Findex
Credit card	A dummy variable equals one if a respondent has a credit card and zero otherwise.	2021 Global Findex
Deposit	A dummy variable equals one if a respondent deposited into an account in the past 12 months and zero otherwise.	2021 Global Findex
Withdraw	A dummy variable equals one if a respondent withdrew from an account in the past 12 months and zero otherwise.	2021 Global Findex
Save	A dummy variable equals one if a respondent saved in the past 12 months and zero otherwise.	2021 Global Findex
Use of debit card	A dummy variable equals one if a respondent used a debit card in the past 12 months and zero otherwise.	2021 Global Findex
Use of credit card	A dummy variable equals one if a respondent used a credit card in the past 12 months and zero otherwise.	2021 Global Findex
Age	The logarithm of the respondent's age.	2021 Global Findex
AgeSQ	Square of the logarithm of the respondent's age.	2021 Global Findex
Gender	A dummy variable equals one if a respondent is male and zero otherwise.	2021 Global Findex
Workforce	A dummy variable equals one if a respondent is out of the workforce and zero otherwise.	2021 Global Findex
Tertiary	A dummy variable equals one if the educational attainment of a respondent is at a tertiary school or above and zero otherwise.	2021 Global Findex
Income quintile	An indicator for the within-country income quintile of the respondent.	2021 Global Findex
Lack of trust	A dummy variable equals one if a respondent does not have an account due to the lack of trust in financial institutions and zero otherwise.	2021 Global Findex
Too expensive	A dummy variable equals one if a respondent does not have an account due to the expense of holding an account and zero otherwise.	2021 Global Findex
Money shortage	A dummy variable equals one if a respondent does not have an account due to the lack of money and zero otherwise.	2021 Global Findex
Religion	A dummy variable equals one if a respondent does not have an account due to religious reasons and zero otherwise.	2021 Global Findex
Too far away	A dummy variable equals one if a respondent does not have an account due to distance from financial institutions and zero otherwise.	2021 Global Findex
Lack of documents	A dummy variable equals one if a respondent does not have an account due to the lack of required documents and zero otherwise.	2021 Global Findex
Mobile account	A dummy variable equals one if a respondent has a mobile money account and zero otherwise.	2021 Global Findex
Transaction via mobile	A dummy variable equals one if a respondent uses mobile phones to access an account and zero otherwise.	2021 Global Findex

Table 1 (*continued*)

	Description	Database
Transaction via internet	A dummy variable equals one if a respondent purchased or made bills via internet and zero otherwise.	2021 Global Findex
Panel B. Country-level variables		
Weak political rights index	The score for political rights ranges from 1 to 7. A higher value implies a lower level of political rights.	Freedom House
Weak political rights dummy	A dummy variable equals one if a country's political rights are rated above 4 and zero otherwise.	Freedom House
ATM penetration	The average number of automated teller machines per 1000 km^2 (in thousands).	Financial Access Survey
Branch penetration	The average number of commercial bank branches per 1000 km^2 (in thousands).	Financial Access Survey
GDP per capita	The logarithm of real GDP per capita in 2021.	World Development Indicators
GDP per capita growth	The annual percentage change of real GDP per capita in 2021.	World Development Indicators
Financial development	Domestic credit to the private sector as a share of GDP.	Global Financial Development
High income	An indicator for high income economy defined by the world bank.	World Bank
Political risk	An indicator for the estimated likelihood of political instability, politically-motivated violence, and/or terrorism.	Worldwide Governance Indicators
Economic freedom	The average of business freedom, labor freedom, monetary freedom, trade freedom, investment freedom, and financial freedom indexes.	Heritage Foundation
Deposit account FAS	The logarithm of the number of deposit accounts per 1000 adults.	Heritage Foundation
Loan account FAS	The logarithm of the number of loan accounts per 1000 adults.	Heritage Foundation
Spatial weak political rights	The weighted average of the political rights index for all bordering countries.	Authors' calculation
Major improvement	A dummy variable equals one if a country's freedom status improves along the three categories of not free, partly free, and free, and zero otherwise.	Heritage Foundation
Control of corruption	An indicator for the estimated perception of the extent to which public power is exercised for private gain.	Worldwide Governance Indicators
Government effectiveness	An indicator for the estimated quality of public services, civil service, policy formulation and implementation, and the credibility of the government's commitment to the policies.	Worldwide Governance Indicators
Government ownership	The proportion of government bank assets among total bank assets.	Global Financial Development
Bank concentration	Assets of the three largest commercial banks as a share of total commercial banking assets.	Global Financial Development
Privacy protection	An indicator for the degree of a country's privacy protection by law.	Varieties of Democracy

4.2. Political rights and financial inclusion

Table 3 presents the baseline regression results of the multivariate test for the impact of political rights on financial inclusion. Column 1 reveals that a weak political rights condition has a negative impact on the level of financial inclusion, and that this impact is both statistically and economically significant. Specifically, a one-standard deviation increase in the *Weak political rights index* results in a decrease of 6.2 percentage points in the probability of possessing financial accounts, which represents 9.4% of the sample mean. Columns 2 and 3 demonstrate that weak political rights also have a significant and negative impact on the probability of possessing debit cards or credit cards. A one-standard deviation increase in the *Weak political rights index* leads to a decrease of 3.93

Table 2
Summary statistics. This table presents the number of observations, mean, standard deviation, and median for the variables used in this study. Panel A is for the individual-specific variables, and Panel B is for the country-specific variables.

	N	Mean	S.D.	Median
Panel A. Individual-level variables				
Financial accounts	110,385	0.659	0.474	1.000
Debit card	109,706	0.506	0.500	1.000
Credit card	68,032	0.348	0.476	0.000
Deposit	67,972	0.780	0.414	1.000
Withdraw	54,053	0.764	0.425	1.000
Save	109,683	0.277	0.447	0.000
Use of debit card	55,422	0.750	0.433	1.000
Use of credit card	23,618	0.824	0.381	1.000
Age	110,385	3.637	0.437	3.664
AgeSQ	110,385	13.424	3.153	13.422
Gender	110,385	0.542	0.498	1.000
Workforce	110,385	0.658	0.474	1.000
Tertiary	110,385	0.220	0.414	0.000
Income quintile	110,385	0.258	0.438	0.000
Lack of trust	40,441	0.254	0.435	0.000
Too expensive	39,016	0.412	0.492	0.000
Money shortage	41,459	0.700	0.458	1.000
Religion	41,105	0.104	0.306	0.000
Too far away	41,136	0.295	0.456	0.000
Lack of documents	41,119	0.289	0.453	0.000
Mobile account	65,150	0.254	0.435	0.000
Transaction via mobile	68,155	0.573	0.495	1.000
Access accounts via mobile or internet	109,765	0.413	0.492	0.000
Panel B. Country-level variables				
Weak political rights index	110,385	3.367	2.067	3.000
Weak political rights dummy	110,385	0.298	0.457	0.000
ATM penetration	110,385	0.078	0.312	0.021
Branch penetration	110,385	0.022	0.058	0.008
GDP per capita	110,385	8.629	1.328	8.532
GDP per capita growth	110,385	-5.287	4.284	-4.494
Financial development	84,064	58.400	37.326	52.330
High income	110,385	0.279	0.449	0.000
Political risk	110,385	-0.152	0.845	-0.260
Economic freedom	109,374	65.652	9.796	65.250
Deposit account FAS	1,485	6.597	1.233	6.858
Loan account FAS	1,230	4.980	1.603	5.288
Spatial weak political rights	102,492	3.766	1.779	3.578
Major improvement	1,485	0.133	0.340	0.000
Government effectiveness	109,409	0.090	0.892	0.011
Control of corruption	109,409	-0.062	0.957	-0.343
Bank concentration	104,433	0.684	0.197	0.684
Government ownership	92,461	0.151	0.191	0.060
Privacy protection	110,385	0.499	1.083	0.543

percentage points in the probability of owning debit cards and a decrease of 2.48 percentage points in the probability of owning credit cards, which account for 7.7% and 7.1% of the sample means. Overall, the results presented in Table 3 provide supportive evidence for the strong impact of political rights on financial inclusion.[3]

Table 4 presents the results on the impact of political rights on the utilization of financial services. Specifically, we examine how limited political rights influence individuals' decisions regarding deposits, withdrawals, savings, and the use of debit and credit cards. Consistent with the findings in Table 3, we observe that inadequate political rights significantly and adversely affect decisions to withdraw, to save, and to use a debit card. In terms of economic significance, a one-standard deviation increase in the *Weak political rights* index results in a 4.6% decrease in the probability of withdrawing, a 19.4% decrease in the probability of saving, and a 6.9% decrease in the probability of using debit cards, relative to the mean of each decision. However, we do not find a significant impact on the decision to deposit or to use a credit card. Hence, Table 4 provides moderate evidence for our hypothesis that political rights play a substantial role in determining financial inclusion.

[3] In addition, we have reanalyzed the results in Table 3 using an alternative proxy for political rights. Specifically, we introduce a dummy variable, the *Weak political rights dummy*, which takes the value of one if a country's political rights score is above 4 and zero otherwise. We then substitute the *Weak political rights index* with the *Weak political rights dummy* in Equation (1). Table A.1 shows the corresponding results.

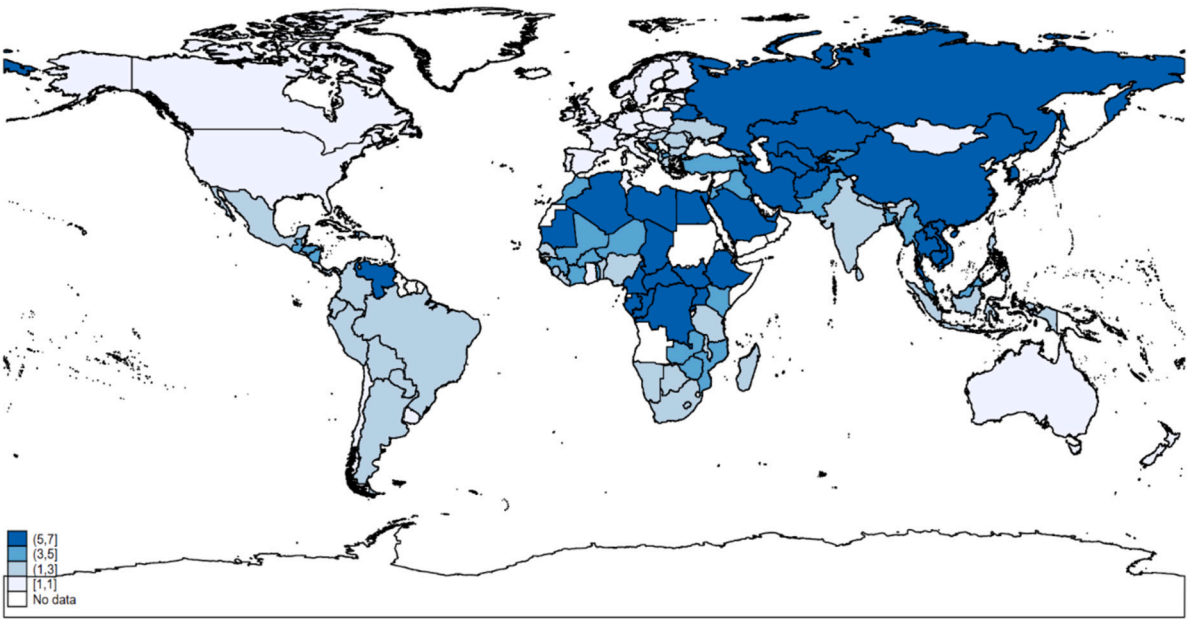

Fig. 1. Political rights in the world. The figure illustrates the level of political rights across countries worldwide in 2021. Political rights are measured by the *Weak political rights index*. A darker area represents a lower level of political rights. Data sources: Freedom House.

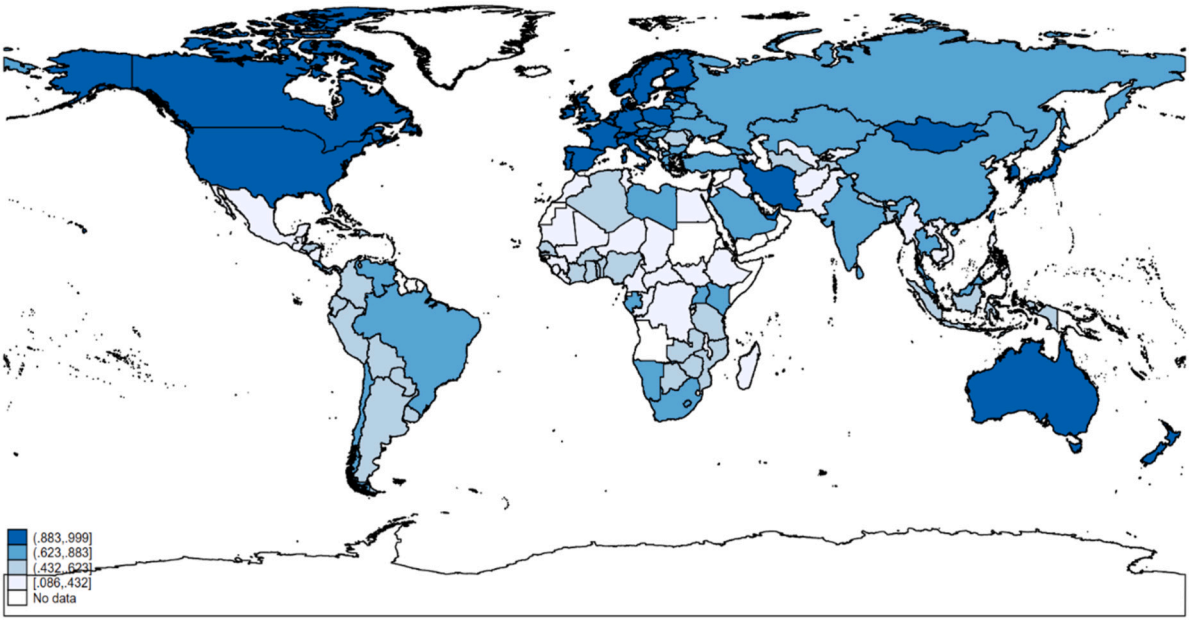

Fig. 2. Prevalence of financial inclusion in the world. The figure illustrates the degree of financial inclusion across countries worldwide in 2021. Country-level financial inclusion is calculated as the proportion of individuals that have financial accounts. A darker area represents a higher level of financial inclusion. Data sources: 2021 Global Findex database.

Next, we delve into the underlying reasons for the impact of political rights on financial inclusion. A fragile political rights environment is known to foster a low level of social trust, creating an atmosphere where individuals are hesitant to engage with mainstream financial services and products. Moreover, weak political rights tend to amplify political rent-seeking activities, diminishing the discretionary income available to households and consequently dampening their demand for financial services. Hence, we hypothesize that the lack of trust in financial institutions and limited financial resources are the primary factors contributing to the impact of weak political rights on financial inclusion.

Table 5 presents the results regarding the reasons for financial exclusion. Each column replaces the dependent variable in Equation (1) with a dummy variable representing one of the following reasons: mistrust of financial institutions (*Lack of trust*), high costs associated with holding an account (*Too expensive*), lack of financial resources (*Money shortage*), religious restrictions (*Religion*),

Table 3
Political rights and financial inclusion: Financial accounts. This table presents the results of the possession of financial accounts on political rights using the OLS method. The dependent variables are proxies of financial inclusion, measured by *Financial accounts* in Column 1, *Debit card* in Column 2, and *Credit card* in Column 3. *Financial accounts* is a dummy variable that equals one if a respondent has an account at a financial institution, and zero otherwise. *Debit card* is a dummy variable that equals one if a respondent has a debit card, and zero otherwise. *Credit card* is a dummy variable that equals one if a respondent has a credit card and zero otherwise. The independent variable of interest is the proxy of political rights, measured by the *Weak political rights index*. The *Weak political rights index* is measured by the score of political rights on a scale of 1 to 7. The definition and details of the variable construction are reported in Table 1. All regressions include a constant term and continent-fixed effects, but their coefficients are omitted for brevity. Robust standard errors, clustered at the country level, are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Financial accounts	*Debit card*	*Credit card*
	(1)	(2)	(3)
Weak political rights index	−0.030**	−0.019**	−0.012*
	(0.013)	(0.009)	(0.007)
Age	0.993***	1.080***	0.655***
	(0.142)	(0.134)	(0.207)
AgeSQ	−0.129***	−0.146***	−0.079***
	(0.020)	(0.019)	(0.028)
Gender	−0.029***	−0.033***	−0.028***
	(0.006)	(0.006)	(0.006)
Workforce	0.088***	0.076***	0.063***
	(0.009)	(0.008)	(0.008)
Tertiary	0.117***	0.142***	0.090***
	(0.012)	(0.014)	(0.013)
Income quintile	0.034***	0.038***	0.033***
	(0.003)	(0.003)	(0.003)
ATM penetration	0.075	0.395**	0.142
	(0.064)	(0.198)	(0.148)
Branch penetration	−0.367	−2.300*	−1.038
	(0.379)	(1.228)	(0.908)
GDP per capita	0.095***	0.134***	0.121***
	(0.020)	(0.023)	(0.017)
GDP per capita growth	0.001	−0.000	0.003
	(0.005)	(0.004)	(0.003)
Financial development	0.077	0.120**	0.038
	(0.052)	(0.048)	(0.054)
Adj. R^2	0.322	0.390	0.179
N	110,385	109,706	68,032

distance from financial institutions (*Too far away*), and lack of required documents (*Lack of documents*). The findings indicate that a lower level of political rights significantly increases the probability of financial exclusion due to mistrust of financial institutions and lack of money. These results align with the explanation of weakened social trust and increased political rent-seeking in the relationship between political rights and financial inclusion.

4.3. Subsample tests

In this section, we conduct a variety of subsample analyses to assess the robustness of our findings. Our first concern is that stronger political institutions could be associated with a higher level of economic development. To address this concern, we divide the sample based on whether a country belongs to a high-income economy, according to the World Bank classification. We then re-run the regression of Equation (1) separately for the high-income and non-high-income groups. If the negative impact of weak political rights on financial inclusion is solely driven by weak economic development, we would expect to observe an insignificant impact for the non-high-income groups. Secondly, since both political risk and political rights reflect political conditions, it is possible that our findings can be explained by political risk. To account for this possibility, we further divide the sample based on whether a country's political risk is above the median and examine whether our findings remain robust. Finally, we investigate whether our findings can be explained by economic freedom, as both political rights and economic freedom measure the overall freedom within a country and may exhibit correlation. Similarly, we split the sample based on whether a country has economic freedom above the median and re-run the regressions to assess the persistence of our findings. These tests aim to strengthen the validity and reliability of our results by considering different factors and potential confounding variables.

Table 4
Political rights and financial inclusion: Use of financial services. This table presents the results of access to financial services on political rights using the OLS method. The dependent variables are proxies of financial inclusion, measured by *Deposit* in Column 1, *Withdraw* in Column 2, *Save* in Column 3, *Use of debit card* in Column 4, and *Use of credit card* in Column 5. *Deposit* is a dummy variable that equals one if a respondent made a deposit into an account in the past 12 months, and zero otherwise. *Withdraw* is a dummy variable that equals one if a respondent made a withdrawal from an account in the past 12 months, and zero otherwise. *Save* is a dummy variable that equals one if a respondent saved money in the past 12 months, and zero otherwise. *Use of debit card* is a dummy variable that equals one if a respondent used a debit card in the past 12 months, and zero otherwise. *Use of credit card* is a dummy variable that equals one if a respondent used a credit card in the past 12 months, and zero otherwise. The definition and details of the variable construction are reported in Table 1. The independent variable of interest is the proxy of political rights, which is measured by the *Weak political rights index*. All regressions include a constant term and continent-fixed effects, but their coefficients are omitted for brevity. Robust standard errors, clustered at the country level, are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Deposit	*Withdraw*	*Save*	*Use of debit card*	*Use of credit card*
	(1)	(2)	(3)	(4)	(5)
Weak political rights index	−0.011	−0.017*	−0.026***	−0.025**	0.006
	(0.010)	(0.010)	(0.007)	(0.012)	(0.005)
Age	0.256**	0.978***	0.371***	0.563***	1.019***
	(0.119)	(0.112)	(0.086)	(0.150)	(0.179)
AgeSQ	−0.042**	−0.140***	−0.053***	−0.090***	−0.142***
	(0.017)	(0.016)	(0.012)	(0.021)	(0.025)
Gender	−0.016***	−0.022***	−0.018***	0.011*	−0.014**
	(0.004)	(0.005)	(0.004)	(0.006)	(0.006)
Workforce	0.074***	0.051***	0.076***	0.032***	0.018**
	(0.007)	(0.008)	(0.007)	(0.008)	(0.007)
Tertiary	0.072***	0.057***	0.130***	0.078***	0.032***
	(0.008)	(0.009)	(0.011)	(0.010)	(0.007)
Income quintile	0.032***	0.026***	0.042***	0.022***	0.012***
	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)
ATM penetration	0.066	0.218*	0.077	0.043	0.007
	(0.051)	(0.124)	(0.052)	(0.042)	(0.019)
Branch penetration	−0.474	−1.322*	−0.227	−0.212	−0.101
	(0.296)	(0.757)	(0.304)	(0.204)	(0.103)
GDP per capita	0.112***	0.067***	0.093***	0.114***	0.060***
	(0.018)	(0.015)	(0.016)	(0.022)	(0.011)
GDP per capita growth	−0.001	−0.002	0.005**	−0.001	−0.001
	(0.003)	(0.003)	(0.002)	(0.004)	(0.002)
Financial development	0.034	0.009	0.070	−0.052	−0.020
	(0.038)	(0.030)	(0.063)	(0.046)	(0.022)
Adj. R^2	0.157	0.091	0.235	0.219	0.035
N	67,972	54,053	109,683	55,422	23,618

Table 6 presents the results for the subsample tests. The findings demonstrate that the coefficient of the *Weak political rights index* remains negative and significant in each subsample. Hence, we conclude that the effect of political rights persists in all subsample analyses, suggesting that our findings are not driven by economic development, political risk, or economic freedom.

4.4. FAS sample with country-level time-series variation

Although the Global Findex database provides valuable cross-sectional variation across individuals, its main limitation is the lack of time-series variation. To address this limitation and to validate our findings, we gather data on financial inclusion from the FAS database for the period from 2004 to 2020. We then conduct tests using the following equation:

$$Financial\ inclusion_{j,t} = \beta_0 + \beta_1 Weak\ political\ rights\ index_{j,t} + \beta_2' X_{j,t} + \nu_c + \nu_t + \varepsilon_{j,t}, \quad (2)$$

where j, c and t denote country, continent, and year. *Financial inclusion* is the dependent variable that measures the degree of financial inclusion, including the logarithm of the number of deposit accounts per 1,000 adults (*Deposit account FAS*) and the logarithm of the number of loan accounts per 1,000 adults (*Loan account FAS*). *Weak political rights index* is the political rights score in Freedom House from 2004 to 2020. For control variables, we include all country-level variables in Equation (1) with the time range of 2004 to 2020. The terms ν_c and ν_t denote country- and year-fixed effects, respectively.

Table 7 presents the results for the FAS sample. In Column 1, the coefficient of the *Weak political rights index* is negative and significant at the 1% level. The magnitude of the coefficient is economically meaningful, as a one-standard deviation increase in the *Weak political rights index* is associated with a 4.5% reduction in the number of deposit accounts, relative to the sample mean. Column 2 provides further supporting evidence, indicating a significant impact of political rights on the possession of credit accounts. Specifically, a one-standard deviation increase in the *Weak political rights index* is associated with a 4.7% decrease in the number

Table 5
Political rights and reasons of financial exclusion. This table presents the results of the reasons for financial exclusion on political rights using the OLS method. The dependent variables are *Lack of trust* in Column 1, *Too expensive* in Column 2, *Money shortage* in Column 3, *Restriction of religion* in Column 4, *Too far away* in Column 5, and *Lack of documents* in Column 6. *Lack of trust* is a dummy variable that equals one if a respondent does not have an account due to mistrust in financial institutions, and zero otherwise. *Too expensive* is a dummy variable that equals one if a respondent does not have an account due to the high cost of maintaining an account, and zero otherwise. *Money shortage* is a dummy variable that equals one if a respondent does not have an account due to a lack of funds, and zero otherwise. *Religion* is a dummy variable that equals one if a respondent does not have an account due to religious reasons, and zero otherwise. *Too far away* is a dummy variable that equals one if a respondent does not have an account due to the distance from financial institutions, and zero otherwise. *Lack of documents* is a dummy variable that equals one if a respondent does not have an account due to a lack of required documents, and zero otherwise. The definition and details of the variable construction are reported in Table 1. The independent variable of interest is the proxy of political rights, measured by the *Weak political rights index*. All regressions include a constant term and continent-fixed effects, but their coefficients are omitted for brevity. Robust standard errors, clustered at the country level, are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Lack of trust	*Too expensive*	*Money shortage*	*Religion*	*Too far away*	*Lack of documents*
	(1)	(2)	(3)	(4)	(5)	(6)
Weak political rights index	0.014**	−0.005	0.018*	0.001	−0.010	−0.006
	(0.006)	(0.008)	(0.010)	(0.004)	(0.008)	(0.007)
Age	0.387***	0.328**	0.624***	−0.049	−0.022	−1.115***
	(0.112)	(0.146)	(0.146)	(0.081)	(0.110)	(0.139)
AgeSQ	−0.053***	−0.038*	−0.084***	0.008	0.006	0.142***
	(0.016)	(0.020)	(0.021)	(0.012)	(0.016)	(0.019)
Gender	−0.038***	−0.013*	0.023***	−0.003	−0.015*	0.000
	(0.007)	(0.007)	(0.007)	(0.004)	(0.008)	(0.006)
Workforce	0.022***	0.026**	0.042***	0.010*	0.023**	0.033***
	(0.007)	(0.010)	(0.011)	(0.005)	(0.010)	(0.011)
Tertiary	0.048***	−0.030*	−0.082***	−0.018**	−0.068***	−0.055***
	(0.015)	(0.016)	(0.015)	(0.007)	(0.014)	(0.013)
Income quintile	−0.008***	−0.029***	−0.026***	−0.008***	−0.030***	−0.023***
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
ATM penetration	−0.168**	−0.079	−0.013	0.047	0.157	0.127
	(0.082)	(0.134)	(0.128)	(0.067)	(0.154)	(0.093)
Branch penetration	0.872*	0.175	0.318	−0.353	−0.955	−0.284
	(0.504)	(0.767)	(0.763)	(0.412)	(0.971)	(0.542)
GDP per capita	0.010	−0.019	−0.037**	−0.011	−0.064***	−0.054**
	(0.019)	(0.026)	(0.018)	(0.009)	(0.021)	(0.022)
GDP per capita growth	−0.008***	−0.005*	0.001	−0.003	−0.002	0.000
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
Financial development	−0.095*	−0.149***	0.032	−0.048	−0.108**	−0.112**
	(0.052)	(0.051)	(0.073)	(0.042)	(0.053)	(0.050)
Adj. R^2	0.026	0.048	0.047	0.009	0.032	0.059
N	40,441	39,016	41,459	41,105	41,136	41,119

Table 6
Robustness tests: Subsample tests. This table presents the results of robustness tests for Equation (1) using different subsamples. The dependent variable is the proxy of financial inclusion, measured by *Financial accounts*. The independent variable of interest is the proxy of political rights, measured by the *Weak political rights index*. The results for high and non-high income samples are presented in Columns 1 and 2, high and low political risk in Columns 3 and 4, and high and low economic freedom in Columns 5 and 6. High and non-high income samples are defined based on whether a country is classified as a high-income economy according to the World Bank. A high (low) political risk sample is defined based on whether *Political risk* is higher (lower) than the median. A high (low) economic freedom sample is defined based on whether *Economic freedom* is higher (lower) than the median. All regressions include the control variables in Equation (1), a constant term, and continent-fixed effects, but their coefficients are omitted for brevity. Robust standard errors, clustered at the country level, are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	High-income sample	*Non-high-income sample*	*High political risk*	*Low political risk*	*High economic freedom*	*Low economic freedom*
	(1)	(2)	(3)	(4)	(5)	(6)
Weak political rights index	−0.027***	−0.040***	−0.071***	−0.040**	−0.034*	−0.040**
	(0.002)	(0.015)	(0.014)	(0.018)	(0.020)	(0.017)
Adj. R^2	0.121	0.226	0.346	0.226	0.257	0.217
N	30,808	79,577	48,616	57,848	52,652	52,801

of deposit accounts, relative to the sample mean. Taken together, these results highlight a consistent and robust hindering effect of weak political rights on financial inclusion, as observed in the sample with a time-series variation. The findings provide additional validation to our earlier findings, demonstrating the enduring impact of political rights on an individual's access to financial services over the studied period.

Table 7
Robustness tests: Country-level evidence. This table presents the results of the impact of political rights on financial inclusion using country-level proxies. The dependent variables are proxies of financial inclusion, measured by *Deposit account FAS* and *Loan account FAS*. *Deposit account FAS* represents the logarithm of the number of deposit accounts per 1,000 adults. *Loan account FAS* represents the logarithm of the number of loan accounts per 1,000 adults. The independent variable of interest is the proxy of political rights, measured by the *Weak political rights index*. All regressions include a constant term, year, and continent-fixed effects, but their coefficients are omitted for brevity. Robust standard errors, clustered at the country level, are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Deposit account FAS	*Loan account FAS*
	(1)	(2)
Weak political rights index	−0.148***	−0.139***
	(0.040)	(0.052)
ATM penetration	0.885**	−8.302***
	(0.356)	(2.226)
Branch penetration	0.431	10.915***
	(0.963)	(3.337)
GDP per capita	0.397***	0.766***
	(0.078)	(0.115)
GDP per capita growth	0.012	0.010
	(0.010)	(0.012)
Financial development	0.379*	0.859***
	(0.193)	(0.257)
Adj. R^2	0.690	0.735
N	1485	1230

4.5. Endogeneity

Another concern is endogenous bias caused by omitted variables, which could render the evidence in the previous sections as being only illustrative, and not causal. To address the issue of endogeneity, we employ the method of 2SLS with an instrumental variable. Specifically, we follow previous studies (Allen et al., 2016; Sha et al., 2021) in using the weighted average of political rights in neighboring countries (*Spatial weak political rights*) as an instrument for the political rights environment of the focal country. The political institutions of a country can be influenced by the spatial political environment through spillover and diffusion (N. Beck et al., 2006; Gleditsch and Ward, 2006). To create the instrumental variable, we first gather information on the geographical distances between the capital of the focal country and each of the bordering countries' capitals. Next, for a bordering country j of focal country i, the weight is calculated as the distance between country i and country j divided by the sum of the distances between country i and all other bordering countries. As a result, the *Spatial weak political rights* for country i is the sum of the weighted *Weak political rights index* across all bordering countries.

Table 8 presents the results of the 2SLS regressions. In Column 1, the first stage regression is displayed. The significant and positive coefficient of *Spatial weak political rights* supports our hypothesis; it suggests that a country's political rights are significantly and positively correlated with the political rights of its neighboring countries. Moving on to Column 2, we regress the three proxies for the possession of financial accounts on the instrumented political rights index. The estimators of *Spatial weak political rights* are significant and negative, indicating that instrumented weak political rights have a significant and negative impact on the likelihood of possessing financial accounts. Likewise, Columns 3 and 4 demonstrate that instrumented weak political rights also significantly reduce the likelihood of possessing debit or credit cards. This further confirms our finding that weak political rights impede financial inclusion. In conclusion, we affirm the robustness of our findings through the use of 2SLS with instrumental variables.

Additionally, we employ the difference-in-differences (DID) framework to further mitigate the endogeneity issues. Following previous studies (Guedhami et al., 2017; Sha et al., 2021), we identify and exclude all instances where a country's political freedom, as identified by Freedom House, transitions from "not free" to "partly free", or from "partly free" to "free". These events signify a significant improvement in political rights. Consequently, the treated group consists of countries that have experienced a major improvement in political freedom, while the control group comprises countries that have not been subject to such changes. To facilitate this analysis, we create a dummy variable (*Major improvement*) that takes the value of one for countries that have undergone a major improvement in political freedom, and zero otherwise. We then conduct a regression analysis using the FAS sample for the following equation:

$$Financial\ inclusion_{j,t} = \beta_0 + \beta_1 Major\ improvement_{j,t} + \beta_2' X_{j,t} + \nu_c + \nu_t + \varepsilon_{j,t}, \quad (3)$$

where j, c and t denote country, continent, and year. The dependent variable, *Financial inclusion*, measures the extent of financial inclusion, encompassing *Deposit account FAS* and *Loan account FAS*. *Major improvement* represents the DID estimator, taking a value of one if a country has experienced a major improvement in its political freedom status, and zero otherwise. The vector X comprises the control variables, which are identical to those in Equation (2). The terms ν_c and ν_t denote country- and year-fixed effects,

Table 8
Robustness tests: 2SLS estimation. This table presents the results of the impact of political rights on financial inclusion using country-level proxies. Column 1 presents the first-stage results, while the remaining columns show the second-stage results. The dependent variables are *Weak political rights index* in Column 1, *Financial accounts* in Column 2, *Debit card* in Column 3, and *Credit card* in Column 4. *Spatial weak political rights* are calculated as the weighted average of the political rights index of all bordering countries. All regressions include a constant term, year, and continent-fixed effects, but their coefficients are omitted for brevity. Robust standard errors, clustered at the country level, are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Weak political rights index	*Financial accounts*	*Debit card*	*Credit card*
	(1)	(2)	(3)	(4)
Spatial weak political rights	0.358***			
	(0.128)			
Weak political rights index		−0.052***	−0.036**	−0.066
		(0.020)	(0.018)	(0.048)
Age	2.056**	1.120***	1.176***	0.869***
	(0.890)	(0.145)	(0.138)	(0.218)
AgeSQ	−0.311**	−0.150***	−0.160***	−0.111***
	(0.132)	(0.021)	(0.020)	(0.030)
Gender	0.017	−0.029***	−0.032***	−0.021***
	(0.047)	(0.006)	(0.006)	(0.006)
Workforce	−0.058	0.099***	0.083***	0.051***
	(0.067)	(0.011)	(0.008)	(0.008)
Tertiary	0.130	0.113***	0.154***	0.091***
	(0.128)	(0.013)	(0.014)	(0.015)
Income quintile	−0.012	0.037***	0.039***	0.029***
	(0.012)	(0.003)	(0.003)	(0.004)
ATM penetration	−0.643	0.557	−0.266	1.123**
	(4.653)	(0.510)	(0.933)	(0.493)
Branch penetration	−4.434	−1.777	0.078	−2.903***
	(16.440)	(1.093)	(1.901)	(1.080)
GDP per capita	−0.587**	0.054**	0.120***	0.110***
	(0.229)	(0.024)	(0.022)	(0.023)
GDP per capita growth	0.052	0.006	0.004	0.008
	(0.040)	(0.005)	(0.004)	(0.006)
Financial development	−0.171	0.071	0.114*	0.014
	(0.832)	(0.056)	(0.062)	(0.055)
Adj. R^2	0.433	0.240	0.369	0.188
N	102,492	102,492	101,848	61,703

respectively. We include country-fixed effects to account for time-invariant differences between the treated and control groups, and year-fixed effects to capture variations in the average outcomes before and after the events. Thus, the coefficient of the DID estimator, β_1, captures the causal impact of improved political rights on financial inclusion between the treated and control groups. If strong political rights enhance financial inclusion, we anticipate a significantly positive value for β_1.

Table 9 presents the results of our DID tests. Consistent with our hypothesis, in Columns 1 and 2 of Panel A, the coefficients of *Major improvement* are significant and positive, indicating that countries experiencing improved political rights exhibit better financial inclusion compared to countries that have not experienced such events. A valid DID analysis requires that the treated and control groups follow parallel trends before the events. To address the concern of parallel trends, we replace *Major improvement* with a set of dummy variables (*Major improvement (N)*) that indicate the year of the events. For example, *Major improvement (−1)* is a dummy variable that equals one for the treated group one year prior to the events, and zero otherwise, while *Major improvement (1)* is a dummy variable that equals one for the treated group one year after the events, and zero otherwise. Columns 3 and 4 demonstrate no significant coefficients for the pre-trend variables, indicating the absence of a pre-trend between the treated and control groups prior to the events. The impact of improved political rights becomes significant one year later and is further strengthened in the second year and beyond.

In addition to testing the parallel trends assumption, we conduct additional tests to validate the DID analysis, and report the results in Panel B of Table 9. We narrow down the sample to three years surrounding the improvement in Columns 1 and 2. We employ the nearest propensity score matching approach using the control variables from Equation (3) in Columns 3 and 4. We find that the results remain qualitatively unchanged. In Columns 5 and 6, we erroneously identify the time of improvement as two years prior, and the results show no significant findings. This suggests that the improvement in political rights is driving the enhanced financial inclusion. Overall, the DID analysis provides supporting evidence for our findings.

4.6. Cross-sectional tests

In this section, we conduct a variety of cross-sectional tests to shed light on the potential mechanisms behind the results. Firstly, we argue that weak political rights weaken the monitoring role of citizens and foster political rent-seeking, thereby reducing household

Table 9
Robustness tests: DID framework. This table reports the results of the DID framework (Panel A) and its robustness tests (Panel B) for the impact of major political freedom improvements on financial inclusion. The sample period spans from 2004 to 2020. The dependent variables are proxies of financial inclusion, measured by *Deposit account FAS* and *Loan account FAS*. The independent variable of interest is the DID estimator of *Major improvement*, which takes the value of one if a country has experienced a major improvement in political freedom status, and zero otherwise. *Major improvement (-1)*, *Major improvement (-2)*, and *Major improvement (-3)* are dummy variables that equal one for treated groups experiencing the improvement one, two, and three years ahead, respectively, and zero otherwise. *Major improvement (0)* is a dummy variable that equals one for treated groups in the year of the improvement, and zero otherwise. *Major improvement (1)* and *Major improvement (2+)* are dummy variables that equal one for treated groups experiencing the improvement in one year and one year thereafter respectively, and zero otherwise. *Major improvement (Placebo)* is created by falsely identifying the time of events two years ahead. In Panel B, Columns 1 and 2 present the results for the sample restricted to three years surrounding the events; Columns 3 and 4 present the results for the Propensity Score Matching (PSM) sample; and Columns 5 and 6 report the results of the placebo tests. All regressions include a constant term, year, and country-fixed effects, but their coefficients are omitted for brevity. Robust standard errors, clustered at the country level, are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A. DID framework

	Deposit account FAS	*Loan account FAS*	*Deposit account FAS*	*Loan account FAS*
	(1)	(2)	(3)	(4)
Major improvement	0.158**	0.311***		
	(0.079)	(0.116)		
Major improvement(-3)			−0.078	−0.128
			(0.077)	(0.118)
Major improvement(−2)			−0.033	−0.026
			(0.069)	(0.102)
Major improvement(−1)			0.069	0.033
			(0.049)	(0.089)
Major improvement(0)			0.114*	0.152
			(0.065)	(0.124)
Major improvement(1)			0.250**	0.310*
			(0.120)	(0.174)
Major improvement(2+)			0.314**	0.430**
			(0.122)	(0.211)
ATM penetration	−1.404	−1.977	−1.056	−1.972
	(0.853)	(1.674)	(0.644)	(1.681)
Branch penetration	8.443***	0.492	3.938*	0.472
	(3.164)	(3.232)	(2.281)	(3.244)
GDP per capita	1.009**	1.345**	1.782***	1.333**
	(0.477)	(0.519)	(0.377)	(0.522)
GDP per capita growth	−0.011***	−0.016**	−0.018***	−0.016*
	(0.004)	(0.008)	(0.004)	(0.008)
Financial development	0.567***	0.682***	0.673***	0.680***
	(0.207)	(0.214)	(0.207)	(0.215)
Adj. R^2	0.926	0.939	0.917	0.939
N	1485	1230	1485	1230

Panel B. Additional tests

	(+3,−3)		PSM		Placebo	
	Deposit account FAS	*Loan account FAS*	*Deposit account FAS*	*Loan account FAS*	*Deposit account FAS*	*Loan account FAS*
	(1)	(2)	(3)	(4)	(5)	(6)
Major improvement	0.145***	0.174**	0.126**	0.120*		
	(0.048)	(0.078)	(0.061)	(0.068)		
Major improvement (Placebo)					0.062	0.075
					(0.081)	(0.097)
Adj. R^2	0.924	0.946	0.959	0.956	0.941	0.960
N	1261	1015	332	272	1485	1230

wealth which would enable them to engage with mainstream financial services. Accordingly, we expect to observe a more profound impact of political rights on financial inclusion for countries with a high level of corruption because government expropriation is more likely to occur in a corrupt environment. Similarly, we expect the impact to be stronger for countries with low government effectiveness, since the weakened monitoring by citizens is associated with the ineffectiveness of government due to a low level of political competition.

To test this hypothesis, we collect two variables to capture the levels of corruption and government effectiveness from the Worldwide Governance Indicators database. The first variable is a country's *Control of corruption*. The second variable is *Government effectiveness*. We then include the interaction of the *Weak political rights index* with the two variables separately in Equation (1).

Table 10 reports the corresponding results. In line with our expectations, Columns 1 and 2 of Table 10 show that the interaction terms are positive and significant, implying that an environment with a low level of corruption and a high level of government efficiency weakens the political rent-seeking activities and increases financial inclusion. Therefore, our tests indicate that weak political rights impede financial inclusion by weakening the monitoring role of citizens and by fostering political rent-seeking.

Table 10
The moderating role of political rent-seeking. This table reports the moderating effects of political rent-seeking and information sharing on the relationship between political rights and financial inclusion. The dependent variable in all columns is the proxy of financial inclusion, measured by *Financial accounts*. Political rights are measured by the *Weak political rights index*. Political rent-seeking is measured by *Control of corruption*, *Government effectiveness*, *Government ownership*, and *Bank concentration*. The definition and details of the variable construction are reported in Table 1. All regressions include a constant term, control variables in Equation (1), and continent-fixed effects, but their coefficients are omitted for brevity. Robust standard errors, clustered at the country level, are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Weak political rights index	−0.015	−0.015	0.029	−0.034*
	(0.014)	(0.011)	(0.024)	(0.017)
Weak political rights index × *Control of corruption*	0.018**			
	(0.009)			
Control of corruption	−0.019			
	(0.036)			
Weak political rights index × *Government effectiveness*		0.026***		
		(0.010)		
Government effectiveness		0.016		
		(0.051)		
Weak political rights index × *Bank concentration*			−0.076*	
			(0.041)	
Bank concentration			0.307**	
			(0.140)	
Weak political rights index × *Government ownership*				0.035
				(0.036)
Government ownership				0.078
				(0.135)
Adj. R^2	0.326	0.333	0.327	0.317
N	109,409	109,409	104,433	92,461

Secondly, we argue that political rights negatively influence financial inclusion by distorting financial institutions' capital allocation and expect to find a stronger impact for countries with high government ownership in the banking sector and low bank competition. The theory is that governments are more likely to serve their political interests through politically favored lending if they hold greater control in the banking sector. Additionally, strong government control is typically associated with low competition in the banking sector. To test these arguments, we collect two variables, *Government ownership* and *Bank concentration*, to capture government control and competition in the banking sector from Global Financial Development. We then include the interaction of the *Weak political rights index* with the two variables separately in Equation (1).

Columns 3 and 4 report the results for the moderating role of government ownership and bank concentration. The coefficient of the interaction term on bank concentration is negative and marginally significant, and we do not find a significant effect for the moderating role of government ownership. Therefore, we conclude that our results provide moderate evidence for the hypothesis that weak political rights impede financial inclusion through the distortion of financial institutions' capital allocation.

4.7. Digital financial services

In this section, we investigate the impact of political rights on digital financial inclusion. We create three proxies to measure the use of digital financial services. Specifically, *Mobile account* is a dummy variable that equals one if a respondent has a mobile money account, and zero otherwise. *Transaction via mobile* is a dummy variable that equals one if a respondent uses a mobile phone to access an account, and zero otherwise. *Transaction via internet* is a dummy variable that equals one if a respondent made purchases or processed bills via the internet, and zero otherwise. We then regress the proxies of the use of digital financial services on *Weak political rights index* and the control variables in Equation (1).

Table 11 reports the results for access to digital financial services. In Column 1, the coefficient of the *Weak political rights index* is negative and significant at the 5% level, implying that a restriction in political rights reduces the probability of holding a mobile financial account. Furthermore, the impact is also economically significant, as a one-standard deviation increase in the *Weak political rights index* results in a reduction of 9.5 percentage points in the probability of possessing digital financial accounts, which accounts for 37.4% of the sample mean. We use alternative proxies of digital financial inclusion in Columns 2 and 3. The results show that a low level of political rights significantly impedes the probability of making transactions via the internet, but has an insignificant impact on the probability of making transactions via a mobile phone. Therefore, our results suggest that weak political rights also hinder digital financial inclusion.

Next, we further explore the potential mechanism for the impact of political rights on digital financial inclusion. If weak political rights harm digital financial inclusion by raising privacy concerns, we should observe that the impact is more pronounced for countries with a low level of protection for privacy. We collect *Privacy protection*, an indicator of the degree of a country's privacy

Table 11
Digital financial inclusion: The role of mobile and internet. This table reports the results of digital financial inclusion on political rights using the OLS method. The dependent variables are proxies of digital financial inclusion: *Mobile account* in Column 1, *Transaction via mobile* in Column 2, and *Transaction via internet* in Column 3. *Mobile account* is a dummy variable that equals one if a respondent has a mobile money account, and zero otherwise. *Transaction via mobile* is a dummy variable that equals one if a respondent uses a mobile phone to access an account, and zero otherwise. *Transaction via internet* is a dummy variable that equals one if a respondent made purchases or processed bills via the internet, and zero otherwise. *Privacy protection* is an indicator that measures the degree of a country's privacy protection in terms of law. The definition and details of the variable construction are reported in Table 1. All regressions include a constant term and continent-fixed effects, but their coefficients are omitted for brevity. Robust standard errors, clustered at the country level, are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Mobile account	*Transaction via mobile*	*Transaction via internet*	*Mobile account*
	(1)	(2)	(3)	(4)
Weak political rights index	-0.046**	−0.014	−0.026**	−0.010
	(0.022)	(0.016)	(0.010)	(0.016)
Weak political rights index × *Privacy protection*				0.020***
				(0.003)
Privacy protection				0.050***
				(0.010)
Age	1.110***	1.389***	1.252***	1.102**
	(0.152)	(0.175)	(0.134)	(0.248)
AgeSQ	−0.170***	−0.228***	−0.197***	−0.168***
	(0.022)	(0.025)	(0.019)	(0.035)
Gender	−0.020**	−0.013*	−0.015***	−0.018**
	(0.008)	(0.007)	(0.005)	(0.005)
Workforce	0.080***	0.076***	0.092***	0.078**
	(0.011)	(0.007)	(0.007)	(0.021)
Tertiary	0.112***	0.144***	0.177***	0.112**
	(0.020)	(0.011)	(0.013)	(0.027)
Income quintile	0.038***	0.037***	0.040***	0.037**
	(0.004)	(0.003)	(0.002)	(0.009)
ATM penetration	0.838***	0.058	0.539***	0.622**
	(0.208)	(0.072)	(0.115)	(0.187)
Branch penetration	−4.977***	−0.425	−3.265***	−3.786**
	(1.243)	(0.413)	(0.712)	(0.987)
GDP per capita	0.031	0.137***	0.108***	0.054
	(0.033)	(0.023)	(0.018)	(0.040)
GDP per capita growth	0.004	0.005	0.003	0.002
	(0.004)	(0.005)	(0.003)	(0.003)
Financial development	−0.105	−0.085*	0.071	−0.140*
	(0.083)	(0.048)	(0.045)	(0.056)
Adj. R^2	0.135	0.238	0.356	0.133
N	65,150	68,155	109,765	65,150

protection in terms of law, from Varieties of Democracy databases. We then include the interaction term of the *Weak political rights index* and *Privacy protection* and re-run the regressions.

Column 4 shows the results. The results are consistent with our hypothesis. The interaction term of the *Weak political rights index* and *Privacy protection* is significantly negative in the regressions, suggesting that weak political rights raise individuals' privacy concerns and reduce the probability of such individuals accessing digital financial services.

5. Conclusion

This study delves into the role of political rights in shaping financial inclusion. Using data from 136 countries, we uncover compelling evidence that weak political rights have a significant negative impact on financial inclusion, manifesting in reduced probabilities of possessing financial accounts and utilizing financial services. Importantly, our findings remain robust even when considering alternative samples and measures of political rights, minimizing the influence of factors such as economic development, political risk, and economic freedom. The validity of our results is further strengthened through the implementation of 2SLS with the instrumental variable of bordering countries' political rights indexes, as well as a difference-in-differences framework that accounts for substantial improvements in political freedom.

Our study provides supporting evidence for the hypothesis that weak political rights hinder financial inclusion through two primary channels: eroded social trust and increased political rent-seeking. Weak political rights contribute to diminished trust in financial institutions and limited access to financial resources. Moreover, the impact of weak political rights on financial inclusion can be attenuated in countries where the likelihood of government rent-seeking is low.

In addition, we explore the influence of political rights on digital payment systems, which play a pivotal role in advancing financial inclusion. Our findings indicate that weak political rights reduce the likelihood of people accessing digital financial services. Notably, this effect is more pronounced in countries with insufficient privacy protection, underscoring the link between weak political rights, heightened privacy concerns among individuals, and a hindered adoption of digital financial services.

In conclusion, our study provides a comprehensive understanding of the impact of political institutions on financial inclusion. It highlights the necessity for policymakers to consider the interplay between political and financial institutions to achieve a more inclusive and effective financial system.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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Appendix A

Table A.1
Political rights and financial accounts: Alternative proxy. This table presents the results of the possession of financial accounts on political rights using the alternative proxy of political rights. The dependent variables are proxies of financial inclusion, measured by *Financial accounts* in Column 1, *Debit card* in Column 2, and *Credit card* in Column 3. The independent variable of interest is the proxy of political rights, which is measured by *Weak political rights dummy*. *Weak political rights dummy* is a dummy variable that equals one if a country's political rights are rated above 4 and zero otherwise. The definition and details of the variable construction are reported in Table 1. All regressions include a constant term and continent-fixed effects, but their coefficients are omitted for brevity. Robust standard errors, clustered at the country level, are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Financial accounts	*Debit card*	*Credit card*
	(1)	(2)	(3)
Weak political rights dummy	−0.119***	−0.068**	−0.015
	(0.045)	(0.030)	(0.029)
Age	1.003***	1.055***	0.629***
	(0.140)	(0.133)	(0.208)
AgeSQ	−0.131***	−0.142***	−0.076***
	(0.020)	(0.019)	(0.029)
Gender	−0.031***	−0.031***	−0.028***
	(0.006)	(0.006)	(0.006)
Workforce	0.085***	0.079***	0.066***
	(0.009)	(0.008)	(0.008)
Tertiary	0.115***	0.145***	0.088***
	(0.012)	(0.013)	(0.013)
Income quintile	0.034***	0.038***	0.033***
	(0.003)	(0.003)	(0.003)
ATM penetration	0.040	0.063	−0.034
	(0.057)	(0.068)	(0.036)
Branch penetration	−0.294	−0.364	0.005
	(0.321)	(0.402)	(0.208)
GDP per capita	0.106***	0.163***	0.127***
	(0.018)	(0.017)	(0.017)
GDP per capita growth	0.000	0.001	0.002
	(0.005)	(0.004)	(0.003)
Financial development	0.091*	0.079**	0.038
	(0.046)	(0.039)	(0.056)
Adj. R^2	0.322	0.402	0.172
N	110,385	109,706	68,032

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