

Inclusive Institutions, Unequal Outcomes: Democracy, State Capacity and Income Inequality

Abstract

Although the relationship between democratic rule and income inequality has received important attention in recent literature, the evidence has been far from conclusive. In this paper, we explore whether the redistributive effect of democratic rule is conditional on state capacity. Previous literature has outlined that pre-existing state capacity may be necessary for inequality-reducing policies under democratic rule. In contrast to that intuitive view, this study argues that democratic rule combined with high state capacity produce higher levels of income inequality over time. This relationship operates through the positive effect of high-capacity democratic context on foreign direct investment and financial development. By making use of a novel measure of state capacity based on cumulative census administration, we find empirical support for these claims using fixed effects panel regressions with the data from 126 industrial and developing countries between 1970-2013.

1. Introduction

Median voter and selectorate theories posit electoral democracy as fundamentally equalizing (Meltzer and Richard, 1981; Boix, 2003; Acemoglu and Robinson 2006; Bueno de Mesquita, et al. 2003). However, these redistributive propositions have not received support in recent, more empirically-minded literature (Timmons, 2010; Remington, 2011; Acemoglu et al., 2015; Wong, 2016; Scheve and Stasavage, 2017). The critics of inequality-reducing effects of democratic institutions have noted that deficiencies in mechanisms of responsiveness and accountability, clientelism, interest group capture, and institutional legacies of authoritarianism may pose serious obstacles to redistributive policies under democratic rule (Albertus and Menaldo, 2018). It has also been suggested that such effects might be heavily context dependent (Soifer, 2013, Dorsch and Maarek 2019).

Looking at context-conditionality could be a new way forward to clarify both the theoretical and empirical relationship between democracy and inequality. In this paper, we explore whether democracy’s impact on inequality is conditioned by state capacity. It could be expected that pre-existing state capacity, in the form of functioning bureaucracies and territorial penetration, might be necessary for redistributive policies under democratic rule (Ziblatt, 2008).¹ For example, Soifer (2013) focused on the effect of inequality on democratization and argued that inequality-induced redistributive conflict only ensues in contexts of considerable levels of state capacity, which allows the implementation of redistributive taxation and transfer policies.

This study found no empirical support for these intuitive claims. Using fixed-effects panel regression models with data from 126 industrial and developing countries from 1970-2013, we show that democratic rule combined with high state capacity leads to increasing income inequality overtime. This study’s theoretical argument centers on the idea that democracy and high state capacity – combined – provide the context of optimal property rights protection and contract security. We argue that the high-quality investment environment backed by democratic and high-capacity state institutions increases income inequality through two transmission channels: the higher inflows of foreign direct investment (FDI) and the development of sophisticated financial sectors, which have been associated in recent literature with increasing income inequality. While the income concentration in high-capacity democratic environment occurs through market inequality, we contend that fiscal policy in these contexts is not able to offset these changes. Multinational corporations and transnational elites become more relevant actors in national politics with increasing FDI flows and financial development, which allows them to exert downward pressure to labor protecting regulations, redistributive taxation, and transfers.

¹ We define “state capacity” as state institutions’ ability to collect and manage information and to effectively execute policies in different areas, notably including market regulation and contract enforcement (“legal capacity”) and resource extraction (“fiscal capacity”) (Besley and Persson 2009: 1219).

Evaluating the effect of regime type on inequality in different levels of state capacity poses significant empirical challenges. Both regime type and state capacity tend to be endogenous to inequality levels and other socio-economic variables associated with economic development. Most importantly, democratic rule might create incentives to increase state capacity in order to levy more tax revenue and provide more public goods to citizens. We mitigate these concerns via a careful construction of a state capacity measure based on cumulative census administration, which is unlikely to reflect government policy priorities which are endogenous to democracy levels. We also use instrumental variables to relieve endogeneity concerns by instrumenting regime type with regional democratic diffusion. Our results based on annual panel data are robust to the system generalized method-of-moments estimator (GMM) analysis, alternative measurements of democracy, various sub-sample restrictions, such as excluding industrial and former Warsaw pact countries from the analysis, and different lag structure specifications.

This paper joins several recent contributions stressing the importance of conditional factors in regime-inequality relationship. Our contribution is parallel to Dorsch and Maarek (2019) who argue that the effect of democracy on inequality is conditioned by the initial levels of inequality. According to their argument, democratization tends to bring initial high or low levels of inequality to the “middle ground,” through either redistributive social policy or market reforms. We point to another factor that conditions the effect of democratic rule on inequality – state capacity – which principally affects inequality in the market income phase. This might well allow to understand the institutional underpinnings of increasing within-country inequality in the last four decades in many parts of the world.² The institutionalist literature has implicitly assumed that “inclusive institutions” do not only promote development but also more equal income distribution, at least in the long-term (Acemoglu et al. 2001). In this paper, we provide evidence that this conclusion may not be warranted, and “inclusive” institutions – captured in the combination of democratic regime type and high-capacity state institutions – might well lead to a trend of steady increases in income inequality through different policy mechanisms.

The paper is structured as follows. In Section 2, we give an overview of the recent literature on democracy and inequality. In Section 3, we present our theoretical argument on the interactive relationship between democratic rule, state capacity, and inequality. Then, in Section 4, we present our research design and address issues of the measurement of key variables. In Section 5, we present our results from fixed-effects panel models, and the corresponding robustness checks. In section 6, we test the transmission channels behind this relationship. In Section 7 we conclude.

² There have been major exceptions to that trend, especially in Latin America, where inequality has declined since the end of 1990s, albeit very slowly.

2. Democracy and Inequality

Democratic institutions have been conceptualized as a major source of responsiveness and accountability in the political economy literature, providing electoral incentives to redistribute income. Leaders in democratic nations need widespread support to achieve and sustain power, and are, therefore, more likely to move beyond their narrow set of personal interests by appealing to a wider public through public policies (Meltzer and Richard, 1981). Compared to authoritarian polities, widespread enfranchisement in democracies is likely to result in higher public goods provision, which may help the poor to benefit from economic growth via investments in human capital (Baum and Lake, 2003; Lindert, 2004; Morgan and Kelly, 2013). These policies are expected to produce more equal income distribution over time.

Despite these plausible theoretical mechanisms, empirical evidence has not offered solid support for inequality-reducing effects of democracy. Several empirical studies incorporating various regions of the developing world find that democracy does not induce lower income inequality (Gradstein and Milanovic, 2004; Timmons, 2010; Acemoglu et al., 2015; Wong, 2016; Dorsch and Maarek 2019), more progressive taxation (Scheve and Stasavage 2014), or pro-poor social policies (Mulligan, Gil, and Sala-i-Martin 2004; Ross, 2006; Pagalayan, 2020). The causes of this “democratic unresponsiveness” have constituted a major puzzle for the literature. At the same time, some democracies might affect inequality more than others, and the focus on the social and institutional contexts in which democracies operate could be a new way forward for fruitful theorizing.

In this paper we concentrate on the question of whether democracy’s effect on inequality is conditioned on state capacity. We define “state capacity” as state institutions’ ability to collect and manage information and to effectively execute policies in different areas, notably including market regulation and contract enforcement (“legal capacity”) and resource extraction (“fiscal capacity”) (Besley and Persson 2009: 1219). High state capacity implies monopoly of violence over territory, cohesive and competent civil service and courts operating on the basis of well-established rules and routines. State capacity has received important recent attention as an explanatory variable in determining development outcomes (Knutsen, 2013; Hanson, 2015).

The previous literature has hinted that inequality reduction is more likely when both the political-electoral incentives stemming from regime characteristics and the state capacity to redistribute exist. In low-capacity states, democratization should not matter for redistributive outcomes given their inability to collect taxes and implement social policy. Revenue extraction and policy implementation—both crucial for income redistribution—are dependent on the state’s ability to penetrate its territory and implement decisions (Ziblatt, 2008). In states with low state capacity, elites are able to escape taxation, lowering the state ability to provide public goods and transfers (Lieberman, 2003; Scott, 1988). For example, income taxation

requires identifying individual incomes within both the national territory and offshore, assessing value and collecting payments. Implementation of redistributive policies, such as basic education, healthcare, social assistance, and insurance policies are also likely to be dependent on the pre-existing capacity of the state institutions (Ziblatt, 2008).

3. Democracy, State Capacity and Investor Confidence

In contrast to that intuitive account, we present a more nuanced understanding of the relationship between democracy, state capacity, and income inequality. Counterintuitively, we argue that democratic rule in the context of high state capacity is associated with increases in income inequality. It is plausible to think that democracy and high state capacity provide the context for optimal property rights and contract security, which favors investor confidence through lower risk capital investments. The high-quality investment climate in a democratic high-capacity setting increases inequality through two policy channels: financial development and larger FDI flows, affecting market income inequality. For several reasons – which we further introduce below – we believe that fiscal redistribution is not able to offset these inequality-concentrating mechanisms.

Under low state capacity, we would expect neither democratic nor authoritarian regime type to make much difference in terms of distributive outcomes, given that the state lacks the ability to undertake both redistributive policies and the provision of contract and property rights security. We also anticipate that in autocratic regimes, the level of state capacity does not matter for inequality. This is because different sub-types of authoritarian regimes are inherently diverse and have very different policy priorities in terms of property rights and contract security and redistribution (Dorsch and Maarek 2019). For instance, communist regimes in Eastern-Europe and Asia led to extremely equalitarian outcomes over time, while many right-wing dictatorships in Latin America and Sub-Saharan Africa presided over the most unequal distributive outcomes seen in modern history. Our interactive theory therefore only makes a modest prediction that democratic rule is associated with increasing inequality in contexts with high preexisting state capacity.

Democratic regimes have been widely portrayed to be more likely to respect private property rights and provide greater rule of law, incentivizing capitalist investor confidence (North and Weingast, 1989; Olson, 2000). An influential argument has connected democracy with higher FDI inflows precisely because of greater investment security (Jensen 2003, Jensen 2008, and Busse and Hefeker 2007). At the same time, democracy alone is not enough to secure investor confidence. Contract enforcement—based on state capacity to enforce the rule of law among private agents—is likely to be crucial for business confidence and attracting foreign investors, along with the protection of private property from arbitrary government involvement. The pre-existing state capacity clearly underlies this positive contractual environment (Besley and Persson 2009). The “watchman” capacities of the state – Weberian-like central and local level bureaucracies, impartial courts, uniform weights and measures, and effective law

enforcement institutions – are crucial for reducing uncertainty and transaction costs (Coase, 1960; Williamson, 1985). Therefore, it could be hypothesized that nations combining high state capacity with democratic rule achieve the highest FDI inflows (Li and Resnick 2003).

In addition to fomenting FDI inflows, democratic high-capacity contexts offer an especially nurturing context for financial development. The checks and balances inherent to a democratic system reduce the government's leverage of both expropriating assets and threatening property rights in the financial sector (Haber et al. 2008; Menaldo and Yoo, 2015). Yet, these positive effects might not be achieved without pre-existing state capacity levels, reducing important market failures stemming from information asymmetries and obstructing contract enforcement. For example, the creation of accurate property registers by the state allows the banks to know who owns which assets, which facilitates the creation of contracts (Haber et al. 2008). The enforcement of modern bankruptcy law and the diffusion of modern accounting standards underlying credit expansion may depend on the quality of bureaucracy and its ability to penetrate the reaches of the state territory. At the same time, stock market expansion is likely to depend on stronger corporate governance and the capacity to enforce bankruptcy laws (Becerra et al. 2012; Menaldo, 2016).

Thus far, we have argued that democratic and high-capacity state institutions are more likely to attract more FDI and help to develop sophisticated financial sectors. The second step of our argument connects these two variables with increasing income inequality. First, considerable recent evidence has pointed out that FDI flows may increase income inequality in both developed and developing world (Basu and Guariglia 2007; Reuveny and Li, 2003; Jaumotte et al. 2013). FDI inflows lead to an increased demand for skilled workers, associated with growing wage differentials between skilled and unskilled jobs, which is likely to increase income inequality (Feenstra and Hanson, 1997; Kratou and Goaid, 2016; Decreuse and Maarek, 2015; Egan and Bogliaccini, 2017). For example, the investment by multinational corporations often creates a small sector of high wage earners and a large low-wage backward sector (Nafziger 1997).³

The development of a sophisticated financial system is another transmission channel for how investor confidence in high state capacity democracies produces higher income inequality. On the one hand, scholars have long recognized the growth-promoting and poverty-reducing effects of financial development through incentivizing and channeling savings (Beck et al. 2008). According to this view, financial development is likely to happen in the “extensive margin,” which is likely to be associated with more equal income distribution. On the other hand, financial development could be produced in the “intensive margin” – through improvements in the quality and range of financial services for those who already enjoy access to the

³ Decreuse and Maarek (2015) show that FDI stock is negatively associated with the labor share in the host countries, while this effect is non-linear.

financial system, which has an important potential to widen inequality and perpetuate inter-generational differences in economic opportunity (Greenwood and Jovanovic 1990). Financial instruments, such as bonds and stocks, are likely to provide higher rates of returns to pre-existing capital, providing a basis for the concentration of financial assets (Piketty 2014).

In addition, the unequalizing effects of the financial system could work through a labor income channel. Financial sector employees are strongly concentrated at the top of the income distribution, and their earnings exceed those of employees with similar profiles (such as age, gender, or education) in other sectors. Asymmetric compensation schemes for bank managers may especially contribute to this un-equalizing dynamic (Denk and Cournède 2015).⁴ Empirically, recent literature has provided evidence for both positive and negative association between financial development and inequality. At least six recent papers find a positive association between financial sector size—usually proxied by private credit as a percentage of GDP—and an increase in income inequality, both in cross-national and subnational contexts (Jaumotte et al. 2013; Li and Yu, 2014; Dabla-Norris, et al., 2015; Denk and Cournède, 2015; Jauch and Watzka, 2016; Haan and Sturm, 2017). Other studies find that countries with higher levels of financial development have less income inequality (Hamori and Hashiguchi, 2012, Agnello and Sousa, 2012, Kunieda et al., 2014, and Naceur and Zhang, 2016).

It could be expected that fiscal policy would offset the increase in market inequality in democratic high-capacity settings in the post-redistribution stage. However, while the context of high state capacity in democracies establishes preconditions for progressive taxation or social policy, the redistributive capacity does not automatically translate into policy outcomes. Inequality-increasing market processes are also putting pressure on fiscal policy, making it difficult to increase redistribution via taxes and transfers (Egan 2010). With increasing FDI flows and more developed financial sectors, domestic and international corporate and financial elites become more relevant actors in national politics and are likely to exert downward pressures to labor protecting regulations, and redistributive taxation and transfers (Wong 2016).

High concentration of income to the top increases potential resources for elite lobbying activities, augmenting their already disproportionate influence on policy making even in countries where considerable redistributive capacity exists (Acemoglu and Robinson 2006). Starting in the mid-1970s, most industrial nations have experienced considerable reductions in marginal tax rates on income, which has contributed to higher inequality in the disposable income phase (Bartels 2008; Gilens and Page 2014; Atkinson 2015). Egan (2010) shows in

⁴ In addition, large financial sectors contribute to moral hazard problems. Given bailout expectations by the government, sophisticated financial instruments encourage high returns through risk-taking behaviors, benefiting members of the financial elite compared to other sectors of the economy (Korinek and Kreamer 2014).

the Latin American context that accumulated FDI levels are associated with greater likelihood of market economic reforms, such as lower tax burden and domestic financial liberalization. Although further work needs to be done in this domain, it is likely that similar patterns of reinforcing elite dominance could be at play in other parts of developing world, where economic elites enjoy similar political opportunities for concentration of capital.

To summarize, our theoretical propositions have the following empirical implications. Our main hypothesis is that democratic rule under high state capacity context increases both market and post-redistribution inequality over time. We also posit that democratic high-capacity context is associated with larger annual FDI inflows and faster growth of the financial sector. Given these reasons above, we do not expect high-capacity democracies to have larger fiscal transfers or redistribution, holding all else equal. Lastly, we also expect a positive association between FDI stock and financial development and income inequality.

4. Research Design, Methods and Data

We use annual fixed-effects panel regression models to test our propositions. We use unit fixed effects because we are particularly interested in changes within individual countries over time. Country fixed effect allow to account for country-specific omitted factors that are stable over time. The inclusion of a lagged-dependent variable controls for autocorrelation. The model takes the following form:

$$Inequality_{i,t} = \alpha_0 + \beta_0 Inequality_{i,t-1} + \beta_1 Democracy_{i,t-1} + \beta_2 State\ Capacity_{i,t-1} + \beta_3 Democracy * State\ Capacity_{i,t-1} + Controls_{i,t-1} + \gamma_i + \lambda_t + \mu_{i,t}$$

Our main theoretical interest is the interaction term between the lagged values of democracy and the lagged values of cumulative state capacity (β_3). γ_i and λ_t are the country and year fixed effects, respectively, while $\mu_{i,t}$ are the estimated residuals.

5. Variables and Measurement

Inequality: Our outcome variable is income inequality measured by the Gini index. The Gini index ranges from 0 (perfect equality) to 100 (one person has all the income). We use the Standardized World Income Inequality Database (SWIID) (Solt, 2016) for our inequality measure. Using the Luxembourg Income Study (LIS) as the methodological standard for comparability, SWIID incorporates data from various sources. The SWIID uses “model-based multiple imputation estimates of the many missing observations in the LIS series” (Solt, 2016, p. 1271), maximizing both comparability and sample size. The incomparability is reflected in the standard errors of the SWIID estimates, where the Gini estimates and their associated uncertainty are represented by 100 draws from the posterior distribution. The data

set provides 100 imputations for each country/year observation (*ibidem*).⁵ The drawback of the SWIID data is therefore the reliance on estimation to fill in missing data points.

SWIID is composed by four indicators—disposable income inequality (post-tax and transfer), market income inequality (pre-tax and transfer), absolute redistribution (the difference between the market income and disposable income Gini indexes), and relative redistribution (the percentage by which market income inequality is reduced). We expect democratic high-capacity context to affect both market and disposable (net) income inequality. While we anticipate the inequality-increasing processes to work mostly through market income concentration, they also put a strain on fiscal redistribution, as we have argued above. Therefore, we present results with both net and market income inequality in our empirical analysis.

Democracy: We adopt Boix et al. (2013) and Polity indicators as our main democracy measures. Boix et al. (2013) measure is based upon two principal components: 1) the use of elections to choose the legislature and, directly or indirectly, the chief executive, and 2) a minimum threshold of participation rights. The Polity democracy index consists of six component measures that record key qualities of executive recruitment, constraints on executive authority and political competition (Marshall et al. 2017). It provides an ordinal ranking of political regimes on a scale of 10 to -10 (democracy to authoritarian regimes). Both of these measures offer almost universal country coverage over time. We further test the robustness of our results with democracy indicators of Cheibub et al. (2010) and Dorsch and Maarek (2019) (based on democracy measure initially developed by Papaioannou and Siournounis (2008) and Acemoglu et al. (2019)).

Given that inequality is likely to affect the prospects of democratic consolidation in different nations, issues of endogeneity must be discussed. Indeed, the level of inequality has figured as a crucial explanatory variable in previous studies of democratization (Boix 2003, Acemoglu and Robinson 2006, Ansell and Samuels 2014). To mitigate reverse causality concerns, we make use of an instrumental variable strategy. Relying on previous work (Acemoglu et al. 2019, Dorsch and Maarek 2019), we use regional waves of democratization as a source of exogenous variation in domestic democracy (Dorsch and Maarek 2019). It is very unlikely that within-country inequality or other domestic economic and political variables could have an influence on the timing of regional democratization processes, while democratization waves clearly affect domestic democratization (Huntington 1991, Acemoglu et al. 2019). It is implausible that democratic or autocratic waves have a direct effect on inequality

⁵ We make use of multiple imputation (MI) regression tools provided by Stata, as recommended by Solt (2016). We perform our main regressions over each of the 100 imputations in order to provide a reliable estimate of the coefficients, taking into account the standard errors across the 100 imputations. This allows the uncertainty of the SWIID to be reflected in MI regression estimates. Given that the MI estimation is computationally intensive some MI regression tools are not available (e.g., 2LS2), we chose to present the majority of our models with non-imputed estimates, calculating the mean of imputed series for each country-year and performed the regressions on that single point estimate.

in a particular country, except through their effect on domestic political institutions. This instrument allows us to plausibly isolate an exogenous variation in democratic institutions.

We construct our instrument through the following strategy. For our binary indicator of democracy (Boix et al. 2013), we calculate the fraction of countries with democratic institutions in the region that shared the same regime type in the beginning of the panel. For instance, for country i we sum up the number of countries sharing regime type in the same region that are democratic at the time, excluding country i . For our continuous Polity indicator, we calculate the average democracy score in a region to instrument Polity scores in a given year, excluding the country itself.⁶

A possible violation of the exclusion restriction is that democratic transitions in neighboring countries affect domestic economic growth rates, which could affect economic variables domestically – especially if regional economies are integrated – which in turn affects both inequality and the likelihood of domestic democratic transition (Acemoglu et al. 2019). To mitigate these concerns, we control for log of GDP per capita in all models.

State capacity: Operationalizing state capacity in the context of our analysis is a complicated task. Similar to regime type, state capacity tends to be endogenous to inequality levels and other socio-economic variables associated with economic development. In addition, democratization might affect state capacity through creating incentives to gather more tax revenue and provide more public goods and services to citizens (Acemoglu et al. 2011). Most existing measures used in the literature – based on fiscal capacity, or levels of public goods provision – reflect the policy preferences of governments and are likely to be directly endogenous to regime type and inequality levels (Bockstette 2002). In addition, expert survey-based indicators, such as Bureaucratic Quality Index of ICRG or World Bank Worldwide Governance Indicators, are likely to be affected by coding biases of different types (Kurtz and Schrank 2012).⁷

We make use of a novel measure of state capacity that is less vulnerable for these problems – the regular ability to conduct national population censuses (Soifer 2013, Hanson 2015). The capacity to undertake periodic censuses captures the ability of the central state to gather information about its subjects, proxying well for the functioning central and local bureaucracies and effective law enforcement institutions (Mann 1984). In addition, censuses also provide the state the necessary information for the construction of tax registers, cadastral maps,

⁶ Following the definition of Dorsch and Maarek (2019), we define the regions as follows: Africa, Central Asia, Eastern Europe, Europe/U.S., Middle East, South-East Asia, South/Central America.

⁷ For example, Kurtz and Schrank (2012: 542) explain that measurements that rely on surveys, particularly, of foreign investors or domestic firms, wrongly assume that “the interests of investors [...] and the interest of the state institutions are essentially coterminous.” In instances where the state is strong and able to levy taxes and impose regulations, for example, the state will most likely “be judged ‘burdensome’ and ‘growth-inhibiting’ by many businesspersons” (Kurtz and Schrank, 2012: 542).

and other forms of systematization (Soifer 2013). The census administration therefore captures the capacity to collect and manage information and effectively execute policies in different areas, including market regulation, property rights protection and contract enforcement (“legal capacity”) and the ability to extract resources (“fiscal capacity”) across national territory (Besley and Persson 2009, Knutsen 2013).

Even if nations have incentives to manipulate the timing, reach and coverage of the censuses – concerns which we discuss below – there are no major political incentives to avoid them altogether. They are infrequent in time – celebrated usually in every 5 or 10 years – and take up relatively little resources compared to implementing policies in welfare of infrastructure programs. However, they serve multiple tasks for both democratic and autocratic nations in different development levels (Christopher 2008). Censuses do not only provide information to identify subjects for taxation, military conscription, and government programs, but have also figured as crucial nation-building devices for developing world nations, while contribute to the social control and surveillance for authoritarian regimes (Anderson 1991, Lieberman and Singh 2017, Taylor 2019).⁸ It is therefore plausible to believe that the absence of census operates a direct signal of extreme state weakness, while the presence gives indication of minimal threshold of existence of state organization. Where states cannot conduct censuses regularly, they are surely unable to undertake property rights and contract enforcement, even if they have political incentives to do so (Centeno 2002).

We use data from the United Nations Social and Housing Statistics Section database on national population censuses,⁹ which documents the information on the presence or absence of a standard national census for every country-year during 1945-2015, which covers 13,466 country-years, compiled by Hanson (2015).¹⁰ A great advantage – besides its wide availability - relies in the fact that census occurrence is based on “hard” institutional data, which is not vulnerable to coding bias stemming from expert evaluations (Kurtz and Schrank 2012, Knutsen 2013).¹¹ An intuitive approach would be to create a lagged indicator measuring

⁸ For instance, that colonial independence movements, initially concerned with the censuses’ surveillance role, coopted them as a means of promoting national identity, through the definition of a national population, akin to the definition of a national territory (Anderson 1991).

⁹ The United Nations Social and Housing Statistics Section database excludes all censuses defined as “urban, administrative,” or “sample,” as well as all those described only as “scheduled” since these censuses do not provide the government with systematic information about its entire population. This leaves two types of censuses in the sample: the standard census, as carried out in most countries, and the rolling census, carried out on an annual basis for a portion of the population in a small set of countries, including Iceland, Sweden, and Denmark (Soifer 2013, Hanson 2015).

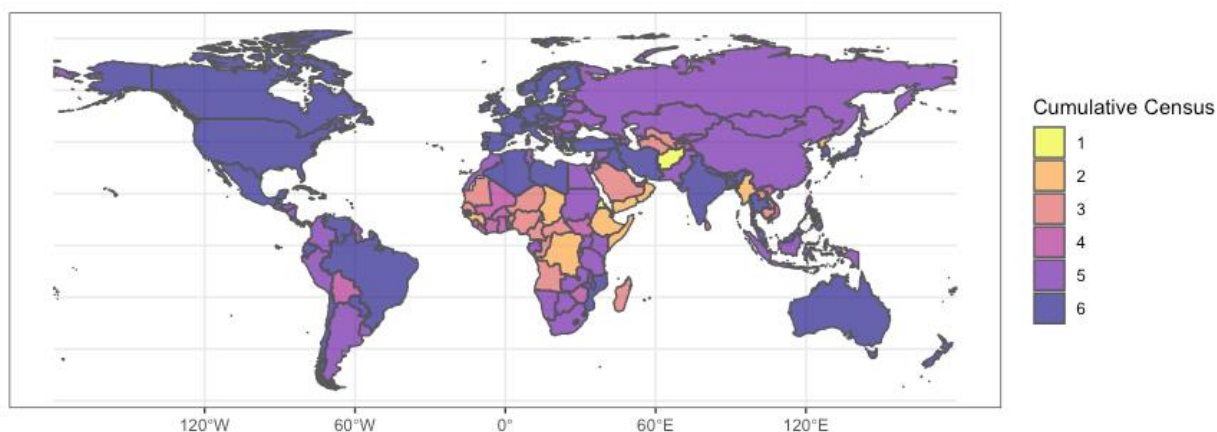
¹⁰ The data for 1990-2020 is available in United Nations Social and Housing Statistics Section <https://unstats.un.org/unsd/demographic-social/census/censusdates/>. The data for period 1950-1990 is available at United Nations Social and Housing Statistics Section. 2003. Ethnicity: A Review of Data Collection and Dissemination. Demographic and Social Statistics Branch, United Nations Statistics Division. At <http://unstats.un.org/unsd/demographic/sconcerns/popchar/Ethnicitypaper.pdf>.

¹¹ The measure captures all censuses conducted in the national territory since 1950 by any state, including the censuses that were conducted by other states that nations formed part of before their statehood. Therefore, our measure accounts for pre-statehood state capacity.

whether nations celebrated census in the past 5 or 10 years (Soifer 2013, Hanson 2015). Yet, this measure is more likely to be endogenous to current socio-economic situation and regime type, and the occurrence and timing of censuses could be manipulated by governments according to different policy priorities. For instance, it is possible that governments determine the timing of censuses according to electoral calendar to influence the boundaries of electoral districts (e.g., to exclude or include some particular ethnic and regional groups), or to show favorable population sizes in order to achieve more development aid from donors (Lieberman and Singh 2017).

To mitigate these concerns, we construct a simple continuous indicator that counts the cumulative number of decades that countries have conducted periodic censuses since 1950 for every country-year. The national censuses are conducted in either 10- or 5-year intervals, and absence of a census in a decade is likely to signal considerable weakness of central government due to lacking control over sub-national areas, absent bureaucracies and inability to control national territory to the full extent. For instance, if a government were unable to conduct censuses in 1950s and 1960s but is able to do so in 1970s and 1980s, the country receives a score of 2 for the whole decade of 1980-1990. The indicator has a global mean of 3.40 and standard deviation of 1.36. Figure 1. displays the cumulative census score in 2010. In 2010, industrial countries have unanimously maximum values (6) on this indicator, while Somalia, Eritrea, Chad, Yemen and Afghanistan possess the lowest values with only 1-2 census iterations.

Figure 1. Cumulative Census Variable in 2010



This procedure – while rather blunt – creates an indicator that is largely unaffected by both expert coding bias and policy priorities of governments, relieving inherent endogeneity bias (Soifer 2013). This long-term measure – which captures the effect of censuses conducted in previous decades – is likely to “wash out” all temporary shocks resulting from timing of elections, foreign aid priorities or other time-variant policy agendas. These political incentives might explain why censuses are celebrated in one particular years versus another but

are unlikely to affect whether the census was celebrated over a long-time frame such as a several decades.

An additional threat to the validity of our census indicator must be discussed. It might be that civil wars might confound the relationship between cumulative census administration, democracy and inequality. Civil wars are indeed the principal reason why nations are not able to take on censuses. Yet, while having a short-term dreadful effect of state capacity, not all civil wars lead to deterioration of state capacity in the long-term, which our measure intends to capture. As suggested by Pagalayan (2020), civil wars might incentivize central states to cater more public goods sub-national regions neglected by central governments before the conflict. In some cases, states have indeed started to conduct censuses rather quickly after civil wars with the desire to gather information on citizens to provide better public services to citizens (Verpoorten 2012). This discussion prescribes that we should not expect a clear relationship between civil wars and census administration proxying for state capacity. We account for these concerns for introducing control variables for civil conflict, and ethnic fractionalization, variable commonly connected with domestic conflicts.

Our cumulative census measure is correlated to a reasonable degree with other proxies of state capacity. It has a .55 correlation with GDP per capita, a .33 with the tax revenue (as a percentage of GDP) and a .45 with school enrollment. This suggests that the Cumulative Census variable is a reasonable proxy for state capacity. It is not correlated with Gini index (.03), which relieves that concern that censuses might be especially likely to be absent in low or high inequality nations.

Control Variables: Besides country and year fixed effects, we add a series of control variables to account for alternative factors that might be associated with inequality changes (in our baseline models). We add the log of GDP per capita to control for level of economic development. We include trade openness as an indicator of economic openness, measured as imports and exports as a percent of GDP (Reuveny and Li, 2003). Inflation captures the macroeconomic situation of the country. Finally, we include the share of urban population to account for the structure of economy. Our control variables come from the World Development Indicators (WDI) (The World Bank). We discuss the measurement of FDI, financial development and other control variables in Sections 5 and 6.

5. Results

We start the presentation of our results with models without the interaction term (Table 1). Our results directly replicate previous studies of inequality (Gradstein and Milanovic, 2004; Timmons, 2010; Wong, 2016, Dorsch and Maarek 2019). Model 1 and 2 - using the MI approach as suggested by Solt (2016) – shows lack of association between (Boix) (Model 1)

and Polity (Model 2) democracy indicators and net inequality, respectively, while controlling for covariates typically used in the literature, and considering country and year fixed effects.

In order to capture the conditional effect – and following Dorsch and Maarek (2019) – we first add an interaction between our binary Boix democracy indicator and the cumulative census prior to democratization, using therefore a fixed state capacity variable for these interaction terms (Models 3 and 5).¹² Model 3 presents results with MI estimation, while Model 5 with imputed series. The results from columns 3 and 5 directly support our counterintuitive theoretical contentions: democratization and state capacity interact positively in producing higher inequality levels. Very similar coefficients are produced using the means of the imputed series.¹³

These effects are substantively meaningful. The dichotomous democracy indicator allows us to calculate the long-run effect of democratic transitions under different levels of state capacity. The shift from democratic to authoritarian under the highest value of state capacity (6 censuses) results in 3.7 Gini point increase inequality in the future (Model 3), holding all other variables constant at their means. We follow the advice of Berry, Golder, and Milton (2012) and present the conditional effect of democracy at different levels of state capacity graphically, using the results from Model 5 (Table 1). Figure 2 shows that democracy has a positive effect on income inequality when state capacity is high at the moment of democratization (approximately 2 census iterations). To get a better sense of these results, Table 1 also provides the marginal impacts of the interaction term.

We obtain a similar result using Polity continuous indicator as our democracy indicator (Models 4 and 6). While the continuous indicator does not allow to calculate long-run effects, it allows to evaluate the marginal impact of more gradual shifts in regime type, conditional on lagged levels of cumulative census (lagged in one period). Under the maximum level of state capacity (6 censuses), the shift from full authoritarianism to full democracy (from -9 (10th percentile) to 10 (90th percentile) in Polity scores) would result in 4.5 Gini point increase in inequality in 10 years, holding all other variables constant at their means. The marginal effects of Polity are presented in Figure 3.

¹² The advantage of this approach is that it allows to calculate the long run effects of shifts from autocracies to democracy. Following Dorsch and Maarek (2019, eq. 4) and Brambor, Clark and Golder (2006, FN9 and p. 75) we define the marginal effect of democracy when we include the interaction term as $\frac{\partial Gini}{\partial Democracy} = \beta_1 + \beta_3 * State\ Capacity$ for which the long run effect is given by $\frac{\beta_1 + \beta_3 * State\ Capacity^{(Max, Med)}}{1 - \beta_0}$.

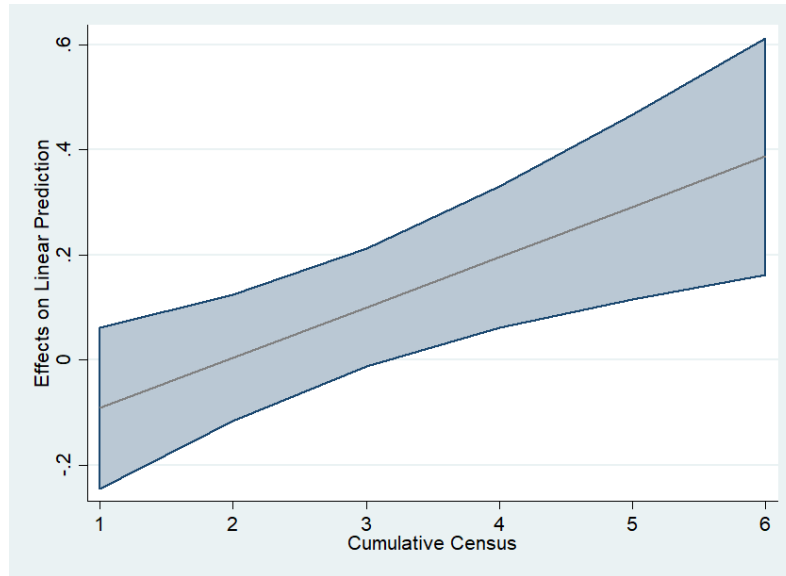
¹³ We prefer the m specification, as it is not as computationally intensive as MI models, while results are identical.

Table 1. Effect of Democracy and State Capacity on the Net Gini Index

	Multiple Imputation				Mean Imputed series	
	(1) Boix	(2) Polity	(3) Boix	(4) Polity	(5) Boix	(6) Polity
Gini Lagged	0.919*** (0.008)	0.920*** (0.008)	0.917*** (0.008)	0.921*** (0.008)	0.937*** (0.006)	0.941*** (0.006)
Boix Democracy	-0.065 (0.065)		-0.337*** (0.124)		-0.187* (0.102)	
Polity Democracy		-0.004 (0.006)		-0.021** (0.009)	-0.187* (0.102)	-0.022*** (0.007)
Cumulative Census			-0.036 (0.048)	0.004 (0.086)	0.088** (0.040)	-0.043 (0.064)
Boix Democracy*Cumulative Census			0.107*** (0.037)		0.096*** (0.031)	
Polity*Cumulative Census				0.007** (0.003)		0.008*** (0.002)
GDP (log)	0.279** (0.134)	0.278** (0.137)	0.246* (0.129)	0.259* (0.133)	0.382*** (0.085)	0.426*** (0.083)
Inflation	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000* (0.000)	0.000* (0.000)
Urban Population	-0.013 (0.008)	-0.013 (0.008)	-0.008 (0.007)	-0.010 (0.008)	0.002 (0.005)	-0.001 (0.005)
Trade	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	0.001 (0.001)	0.000 (0.001)
LR effect at Census=6			3.67		6.17	
LR effect at Census=3			-0.19		1.6	
Marg. impact at Census=6			0.305	0.021	0.389	0.026
Marg. impact at Census=3			-0.016	0.000	0.101	0.002
Country and Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,190	4,006	4,019	3,962	3,778	3,962
R-squared	0.99	0.99	0.99	0.99	0.99	0.99

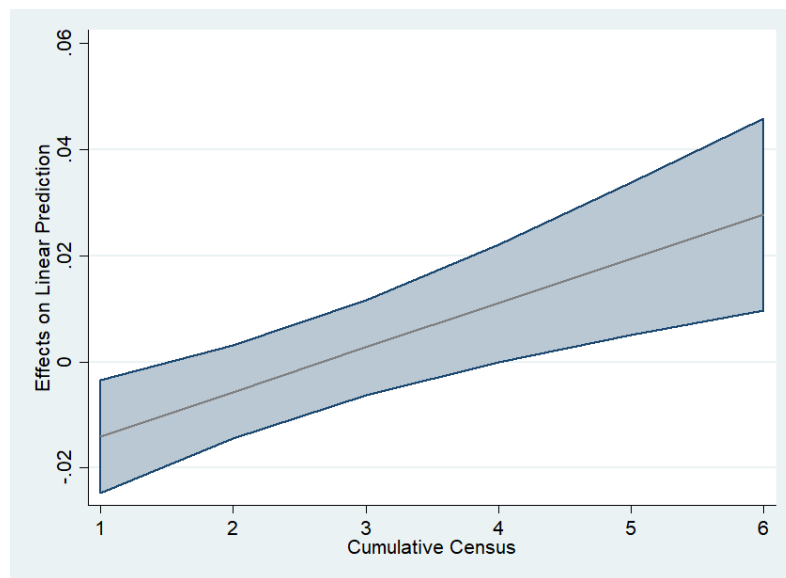
Notes: The dependent variable is net Gini coefficient and main explanatory variables are one period lagged democratic scores from Boix et al. (2013) and Polity IV by Marshall et al. (2016) interacted with Cumulative census variable. The unit of analysis is country–year. All specifications include a full set of country- and year-fixed effects. All independent variables are lagged one year. Standard errors are clustered in country level. *** p<0.01, ** p<0.05, * p<0.1.

Figure 2: Marginal effect of Boix Democracy indicator on Gini Index in different values of pre-democracy Cumulative Census



Note: Conditional Effect of Democracy and State Capacity on Inequality. The panel shows the predicted change in Gini index from democratic transitions using Boix et al. (2013) democracy index at different levels of pre-democracy Cumulative Census according to the estimates in Table 1, Model 5. The blue lines represent the 95% confidence intervals.

Figure 3: Marginal effect of Polity Democracy indicator on Gini Index in different values of lagged Cumulative Census



Note: Conditional Effect of Democracy and State Capacity on Inequality. The panel shows the predicted change in Gini index from a one-unit change in Democracy (Polity) at different levels of lagged Cumulative Census according to the estimates in Table 1, Model 6. The blue lines represent the 95% confidence intervals.

2SLS and GMM estimations

Table 2 (Models 1-4) presents results from 2SLS instrumental variable regressions for both of our democracy indicators (Boix and Polity) with the means of imputed series. We consider both democracy and its interaction term with cumulative census as endogenous and instrument for them with regional democracy share/scores, and an interaction with the latter with cumulative census indicator. We perform these analyses for our two democracy variables. We present the first stage results in the Appendix (Table A3) – where we demonstrate a positive association between our regional instruments and our democracy indicators – and second stage results with required statistics in Table 2. In order to have an over-identified specification, as a third excluded instrument we also use the regional wave measure from five years before our one-year lagged democratization/ democracy score regressor (the sixth lag of the share of a country's region that is democratically governed in the case of Boix indicator).

In addition, we present F-statistics of excluded instruments for the first stage regressions in Table 1. Cragg–Donald F-statistics give evidence that the set of instruments is strong (above the rule of thumb of 10). The large p-values in Hansen J-Statistic also confirm that the excluded instruments are exogenous. The results from 2SLS procedure are similar to Table 1, with coefficient larger in size. The shift from democratic to authoritarian under the highest value of state capacity results in a 8 Gini point increase inequality in the long run, holding all other control variables constant at their means (Model 1).

Table 2. Effect of Democracy and State Capacity on the Net Gini Index- 2SLS and GMM

	2SLS				GMM	
	(1) Boix	(2) Polity	(3) Boix	(4) Polity	(5) Boix	(6) Polity
Lagged Gini	0.937*** (0.006)	0.944*** (0.006)	0.944*** (0.006)	0.941*** (0.009)	0.995*** (0.001)	0.997*** (0.001)
Boix Democracy	-0.117 (0.245)		-0.096 (0.243)		-0.216** (0.087)	
Boix*Cumulative Census	0.108** (0.053)		0.085* (0.055)		0.039* (0.024)	
Polity Democracy		-0.055*** (0.015)		-0.062** (0.031)		-0.020*** (0.007)
Polity*Cumulative Census		0.007* (0.004)		0.011** (0.003)		0.005** (0.002)
Cumulative census	0.097* (0.056)	-0.082 (0.064)	0.133** (0.057)	0.012 (0.018)	0.001 (0.017)	0.012 (0.018)
GDP (log)	0.392*** (0.088)	0.034 (0.045)	0.298** (0.093)	0.017 (0.021)	0.201** (0.179)	0.032* (0.017)
Inflation	0.000* (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000*** (0.000)	0.001*** (0.000)
Urban Population	0.001 (0.006)	0.006 (0.006)	0.002 (0.006)	0.006 (0.009)	-0.001* (0.001)	-0.002** (0.001)
Trade	0.001 (0.001)	0.002 (0.001)	0.002* (0.001)	0.001 (0.001)	0.000	0.000
Ethnic Diversity			8.099 (6.531)	1.613 (2.836)		
Civil Conflict			-0.091 (0.060)	-0.117* (0.068)		
ODA (log)			-0.006 (0.004)	-0.007* (0.004)		
Left			0.008 (0.041)	0.099* (0.057)		
Growth			-0.604* (0.350)	-0.069 (0.438)		
Fraser Index			0.013 (0.013)	0.015 (0.014)		
LR effect at Census=6	8.43		7.39		3.6	
LR effect at Census=3	3.29		2.84		-19.8	
Marg. impact at Census=6	0.531		0.414		0.018	
Mar. impact at Census=3	0.207		0.159		-0.099	
C-D F stat on excl. IVs	84.26	58.56	73.14	56.78		
Hansen J-stat p-value	0.11	0.14	0.12	0.26		
Excluded Instruments	3	3	3	3		
AR(1)					0.000	0.000
AR(2)					0.888	0.640
Observations	4,034	4,020	3,999	3,894	3,160	3,042
R-squared	0.741	0.742	0.837	0.769	0.769	0.818

Notes: The dependent variable is net Gini coefficient and main explanatory variables are one period lagged democratic scores from Boix et al. (2013) and Polity IV by Marshall et al. (2016) interacted with Cumulative census variable. The unit of analysis is country–year. All specifications include a full set of country- and year-fixed effects. All independent variables are lagged one year. Standard errors are clustered in country level. *** p<0.01, ** p<0.05, * p<0.1.

In Models 3 and 4 we further probe the validity of our instrumental variable strategy by including various control variables that might confound the conditional effect of democracy and state capacity on inequality. First, given that civil conflicts are likely to affect both census administration and inequality we control for lagged events of civil conflicts by including an indicator from the UCDP/PRIO Armed Conflict Dataset (Gleditsch et al. 2002). Second, left governments are more likely to engage in redistributive policies and investments in state capacity. We grasp this effect through left partisanship indicator from the Database of Political Institutions (Beck et al. 2001). Third, we also control for Official Development Aid (ODA) as a percentage of GDP to account for its possible effects on census administration. Fourth, ethnic diversity could hinder redistributive policies (Pfefinger and Sturm 2020), and we account for that through controlling for a Herfindahl index from Ethnic Power Relations (EPR) Core Dataset (Cederman, Wimmer, & Min, 2010). Lastly, we control for Fraser Institute Index of Economic Freedom, a summary index constructed from five components (size of government, legal system and property rights, sound money, freedom to trade internationally, and regulation) (Gwartney et al., 2014: 5). In both models, our results remain unaltered, for both the Boix et al. (2013) and Polity measures.

To further bolster the robustness of our conclusions, we also provide results using the method-of-moments estimator (GMM) introduced by Arellano and Bond (1991) and Arellano and Bover (1995) (Models 5 and 6). The GMM system uses lagged explanatory variables in levels and differences as instruments. AR(1) and AR(2) in Table 2 report the p-values for first and second order autocorrelated disturbances in the first differences equations, where the null denotes no correlation. The first order serial correlation AR(1) is expected since we are including lags as instruments. However, a correlation at higher orders than 1 would lead to an inconsistent estimator. Hence, the null should not be rejected for AR(2).

Robustness Tests

In Table 3, we present further robustness tests considering some intuitive sample restrictions. In Models 1 and 2, we replicate our results with 5-year panels. The effect of political variables on distributive outcomes is usually slow-moving, and democracy might take time to produce results, and longer panel lengths may also capture more substantive variation in the variables between each observation (Dorsch and Maarek 2019). We take the variables' values in the first year of each five-year time period, starting from 1970 (independent variables are lagged by one panel period). We demonstrate that identical results to annual panels are obtained using 5-year panels, interacting Boix (Model 1) and Polity IV (Model 2) variables with our

Cumulative Census indicator.¹⁴ Shift from autocracy to democracy under the highest value of Cumulative Census (6) results in 7 Gini points increase in inequality in the long-term.

In Model 3 and 4 we replicate our main results excluding industrial countries from the sample. We replicate our results with both democracy measures. Therefore, we have certainty that our results are not driven by an increasing inequality trend in the industrial world since the 1970s, but can be generalized more widely to other regions (Piketty, 2014; Atkinson, 2015). In Model 3 and 4 we find an identical effect when excluding former Warsaw pact nations, where inequality increased after democratization in a relatively high-capacity context. Both long run and marginal effects look similar to previous models. To give further robustness to our results, we show identical results with the democracy variables developed by Cheibub et al. (2010) and Dorsch and Maarek (2019) (based on Papaioannou and Siournounis (2008) and Acemoglu et al. (2015, 2019) in Appendix (Table A4).

Lastly, we explore if inequality-increasing effect of democracy under high-capacity is primarily working through market (gross) inequality, as we have hypothesized in Section 3, rather than redistribution. In Models 1 and 2 (Table 4) we document a positive interactive effect of Boix et al. (2013) and Polity and variables and cumulative census variable on market inequality. In Models 3 and 4, we find no interactive effect of democracy variables and state capacity on fiscal redistribution (measured as an absolute difference between market and net inequality). This provides evidence that that the impact of high-capacity democracy on the net Gini mostly occurs through changes in the market income distribution rather than redistribution. Fiscal redistribution is not greater in high-capacity democracies, showing that it is not likely to offset inequality-increasing changes in occurring in the market phase. Next, we turn to a test of concrete policy channels through which high-capacity democracies promote higher inequality.

¹⁴ Lagged variables are thus lagged by one panel period.

Table 3. Effect of Democracy and State Capacity on the Net Gini Index: Robustness

	Mean Imputed series					
	5-year Panels		OECD Excluded		Warsaw Pact Excluded	
	(1) Boix	(2) Polity	(3) Boix	(4) Polity	(5) Boix	(6) Polity
Gini Lagged	0.714*** (0.032)	0.689*** (0.034)	0.942*** (0.007)	0.935*** (0.008)	0.937*** (0.006)	0.936*** (0.007)
Boix Democracy	-1.177** (0.555)		-0.112 (0.135)		-0.175* (0.105)	
Polity Democracy		-0.082** (0.041)		-0.024*** (0.008)		-0.003 (0.010)
Cumulative Census	0.024 (0.237)	0.448 (0.352)	0.153*** (0.049)	-0.068 (0.077)	0.092** (0.042)	-0.081 (0.075)
Boix *Cumulative Census	0.515*** (0.170)		0.080** (0.040)		0.093*** (0.032)	
Polity*Cumulative Census		0.041*** (0.013)		0.003* (0.002)		0.009*** (0.003)
Inflation	0.000 (0.000)	0.001 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000** (0.000)
Urban Population	-0.006 (0.028)	0.001 (0.029)	0.011* (0.007)	0.007 (0.007)	0.001 (0.005)	-0.003 (0.006)
Trade	0.013** (0.005)	0.002 (0.005)	0.002** (0.001)	0.000 (0.001)	0.001 (0.001)	0.000 (0.001)
GDP (log)	0.501*** (0.101)	1.692*** (0.481)	0.486*** (0.103)	0.540*** (0.101)	0.383*** (0.089)	0.460*** (0.103)
LR effect at Census=6	6.69		6.34		6.08	
LR effect at Census=3	1.29		2.21		1.65	
Marg. impact at Census=6	1.913	0.450	0.368	0.01	0.383	0.05
Marg. impact at Census=3	0.368	0.198	0.128	-0.02	0.104	0.02
Observations	692	665	3,170	2,987	3,782	3,469
R-squared	0.967	0.969	0.984	0.985	0.990	0.990

Notes: The dependent variable is net Gini coefficient and main explanatory variables are lagged democratic scores from Boix et al. (2013) and Polity IV by Marshall et al. (2016) interacted with Cumulative census variable. Models 1 and 2 consider 5-year panels, while for Model 3-6 the unit of analysis is country–year. All specifications include a full set of country- and year-fixed effects. Standard errors are clustered in country level. *** p<0.01, ** p<0.05, * p<0.1.

Table 4. Effect of Democracy and State Capacity on the Market Gini Index and Redistribution

	Mean Imputed series			
	(1) Boix DV: Market Gini	(2) Polity DV: Market Gini	(3) Boix DV: Redistribu- tion	(4) Polity DV: Redistribu- tion
Gini Lagged	0.985*** (0.003)	0.986*** (0.003)		
Redistribution Lagged			0.867*** (0.009)	0.871*** (0.008)
Boix Democracy	-0.224*** (0.035)		-0.242** (0.099)	
Polity Democracy		-0.023*** (0.002)		-0.013* (0.007)
Cumulative Census	-0.004 (0.014)	0.021 (0.022)	-0.099** (0.039)	0.091 (0.062)
Boix*Cumulative Census	0.066*** (0.010)		0.028 (0.030)	
Polity*Cumulative Census		0.007*** (0.001)		0.001 (0.002)
GDP (log)	0.025 (0.028)	0.021 (0.028)	-0.385*** (0.081)	-0.433*** (0.079)
Inflation	0.000*** (0.000)	0.000*** (0.000)	-0.000 (0.000)	-0.000 (0.000)
Urban Population	-0.005*** (0.002)	-0.004** (0.002)	-0.016*** (0.005)	-0.013*** (0.005)
Trade	-0.000 (0.000)	-0.001** (0.000)	-0.002** (0.001)	-0.002* (0.001)
Long-run effect at Census=6	11.47		-0.07	
Long-run effect at Census=3	-1.73		-0.16	
Marginal impact at Census=6	0.17	0.019	-0.07	-0.007
Marginal impact at Census=3	-0.026	-0.002	-0.16	-0.01
Observations	4,019	3,962	4,019	3,962
R-squared	0.998	0.998	0.988	0.988

Notes: The dependent variable for Models 1 and 2 is market Gini coefficient, and for Models 3 and 4 Redistribution. The main explanatory variables are one period lagged democratic scores from Boix et al. (2013) and Polity IV by Marshall et al. (2016) interacted with Cumulative census variable. The unit of analysis is country-year. All specifications include a full set of country- and year-fixed effects. All independent variables are lagged one year. Standard errors are clustered in country level. *** p<0.01, ** p<0.05, * p<0.1.

6. Mechanisms

In this section we empirically test the causal mechanisms underlying our theory. We expect democratic rule to be positively associated with FDI inflows and the size of the financial sector only when a minimal level of state capacity exists. We do not expect democratic rule to have an effect on these variables under low capacity, given the state's inability to provide

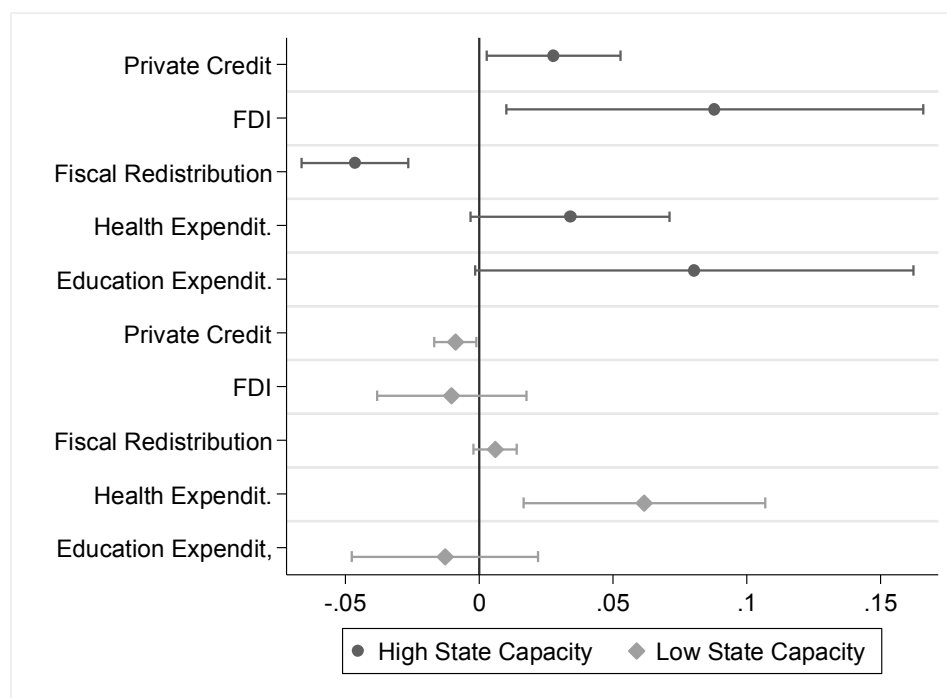
contract and property rights security. For reasons outlined in Section 3, we do not anticipate a positive effect of democracy on fiscal redistribution and government spending in high-capacity contexts. Lastly, we also expect to see a positive association between FDI stock and financial development and inequality.

We measure financial development with an indicator commonly used in studies of financial development—Private Credit by Deposit Money Banks and Other Financial Institutions to GDP. This measurement captures the ratio of claims on the private sector by deposit money banks and other financial institutions to GDP (Beck et al. 2010). FDI is measured by annual FDI inflows to a country, as a percentage of GDP, retrieved from WDI. We proxy fiscal policy through fiscal redistribution measure introduced above and public goods provision through healthcare and education spending (as a percentage of GDP) and education levels through secondary school enrollment.

To investigate these policy mechanisms driving our theory, we present a series of split-sample regressions. For each policy area, we split the sample with respect to the level of state capacity at which the estimated impact of Polity index on the Gini coefficient switches from positive to negative (at 3 from Model 6 of Table 1). We test these relationships using similar fixed effects regressions as in the main analysis, while controlling for GDP per capita, GDP annual change, and country and year fixed effects. To facilitate exposition, we have plotted the Polity coefficients for each of these 10 regressions in Figure 4. Lines around the point estimates represent 95% confidence intervals. Tables A. 5 and A.6 in the Appendix present the fixed-effects panel regressions that underlie the coefficient plots presented in Figure 4.

Figure 4 provides evidence that democratic rule favors FDI inflows and financial sophistication only in contexts where minimal state capacity is established. Under low values of state infrastructural power, democracy lacks relationship with these variables. This suggest that a minimal level of state capacity is necessary for democratic rule to improve investment climate. By contrast we find little evidence that democratic rule promotes fiscal redistribution and public goods provision in the high infrastructural power context. Democratic rule has a positive effect on health expenditure only in low-capacity contexts. As Knutsen (2013) and Hanson (2015) have argued, democratic rule may operate as a substitute for capable state in providing better public goods in low-capacity contexts. This is explained by the special propensity of dictatorial rulers to choose non-welfare promoting policies under low state capacity (Wintrobe 1998). According to this rationale, a shift from dictatorship to democracy produces greater investments in redistributive social policy under low state capacity compared to democratization under high state capacity.

Figure 4. Policy Channels of Democratic Effect on Inequality at Different Levels of State Capacity



Note: The estimated marginal effect of Polity on a series of policy areas for the subsamples with high state capacity (black dots) and low state capacity (gray diamonds), where the subsample cutoff is a Cumulative Census score of 3. The lines around the point estimates represent 95% confidence intervals.

Lastly, we expect to see a positive association between FDI inflows and financial development and inequality. To test this relationship, we use our baseline model (Model 3), and add lagged Private Credit and FDI stock (as percentage of GDP) as independent variables, while excluding democracy and state capacity variables (Table 5). Using net inequality as the outcome variable, Model 1 demonstrates a statistically significant relationship between Private Credit, while Model 2 displays a significant association between FDI stock and Gini index. Models 3 and 4 give evidence of a similar relationships when using market inequality as outcome variable.

Table 5. Effect of Private Credit and FDI Stock on Net and Market Gini Index

	Mean Imputed series			
	Net Gini		Market Gini	
	(1)	(2)	(3)	(4)
Lagged Gini	0.937*** (0.006)	0.934*** (0.007)	0.997*** (0.001)	0.983*** (0.003)
GDP per capita (log)	0.371*** (0.092)	0.377*** (0.097)	0.039*** (0.007)	0.038*** (0.007)
Urban Population	-0.005 (0.005)	-0.004 (0.005)	-0.002*** (0.000)	-0.005** (0.002)
Inflation	0.000*** (0.000)	0.000*** (0.000)	0.000** (0.000)	0.000*** (0.000)
Trade	0.001 (0.001)	0.001 (0.001)	-0.000** (0.000)	-0.001** (0.000)
Private credit	0.003*** (0.001)		0.001*** (0.000)	
FDI stock		0.044** (0.022)		0.021*** (0.007)
Constant	-1.417 (0.978)	-0.782 (1.071)	-0.063 (0.123)	1.134*** (0.223)
Observations	3,840	3,898	3,825	3,883
R-squared	0.991	0.991	0.998	0.998

Notes: The dependent variables are Net (Models 1 and 2) and Market Gini coefficient (Models 3 and 4). The main explanatory variables are one period lagged Private credit and FDI stock. The unit of analysis is country-year. All specifications include a full set of country- and year-fixed effects. All independent variables are lagged one year. Standard errors are clustered in country level. *** p<0.01, ** p<0.05, * p<0.1.

7. Conclusion

In this paper we have explored whether the effect of democratic rule on income inequality is conditional on state capacity. Counterintuitively, we argue that democratization and democratic rule in the context of high state infrastructural power is associated with increases in income inequality. Larger financial sectors and FDI inflows favor income concentration through market incomes. To test our hypothesis, we introduced a novel measure of state capacity based on cumulative census administration. Our empirical results are robust to instrumental variable and GMM estimation, various alternative measures of democracy, and apply beyond the context of industrial world, a high-capacity democratic context where inequality has increased sharply in recent decades. In addition, we also test the mechanisms of our theory, finding consistent support of our claim that the interactive effect of democratic rule and infrastructural power posited in our main analysis might operate through financial development and FDI.

We join the recent literature in exploring the conditional relationship between democracy and inequality. Our contribution is parallel and complementary to Dorsch and Maarek (2019), who argue that the effect of democracy on inequality is conditioned by the level of inequality at the moment of democratization. Consistently with our findings, they show that inequality tends to increase after democratic transitions in autocratic nations that had developed a strong state to deliver public goods to the poor, given that their policies tend to move towards the “middle-ground” after democratization. By contrast, regimes which democratize under low capacity, inequality is usually high, which leads to greater catering of demands by median voter for larger redistribution, resulting in a decrease in income inequality after democratization.

Albertus and Menaldo (2018) stress another set of factors – authoritarian constitutions and other institutional legacies – that pose obstacles to fiscal redistribution after democratization and affect inequality through that. In this paper we stress the inequality-increasing mechanisms associated with democratic rule in high state capacity context. We believe our conclusion speaks directly to recent scholarship on increasing inequality in the developed and many regions of the developing world, reflecting the natural tendency of well-functioning capitalism to produce higher income concentration (Piketty 2014). Institutionalist literature has implicitly assumed that “inclusive institutions” do not only promote development, but also more equal income distribution, at least in the long-term (Acemoglu, Johnson, and Robinson 2001). In this paper, we have provided evidence that this conclusion may not be warranted, and “inclusive” institutions – captured in the combination of democratic regime type and high-capacity state institutions might well lead to a trend of steady increases in income inequality, which we argue happens through financial development and FDI inflows. Further research should clarify the additional pathways through which the high-capacity state institutions and democratic regime type affect inequality.

Appendix

Table A1. Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Net Gini	4,636	38.59	8.70	20.43	60.88
Market Gini	4,622	45.56	6.41	22.23	70.54
Redistribution	4,622	6.99	7.39	-13.86	25.43
Cumulative Census	4,449	3.42	1.36	0	6
Polity	4,445	3.80	6.59	-10	10
Boix Democracy	3,843	0.58	0.49	0	1
GDP per capita	4,225	12167.37	16971.26	182.71	111968.30
Urban Population share	4,464	53.72	23.51	4.99	100.00
Trade	7,144	70.59	47.25	0.02	441.60
Inflation	4,344	41.62	410.73	-98.70	15444.38
Private Credit	4,127	40.42	36.20	0.85	262.46
FDI Inflows	4,089	3.64	13.48	-58.32	451.72
Health Expenditure	2,616	3.53	2.05	0.27	10.05
Education Expenditure	2,528	4.39	1.66	0	13.21957
Ethnic Diversity	4,479	0.42	0.25	0.01	0.93
Civil Conflict	4,636	0.22	0.42	0	1
ODA	2,969	5.20	8.50	-0.68	181.10
Left	4,636	0.56	0.50	0	1
Fraser Index	2,105	6.59	1.07	2.47	8.88
Democracy Cheibub (2010)	3,928	0.59	0.49	0	1
Democracy Dorsch and Maarek (2019)	4,374	0.66	0.47	0	1

A2. List of Countries

Afghanistan, Albania, Argentina, Armenia, Australia, Austria, Bahamas, Bangladesh, Barbados, Belarus, Belgium, Benin, Bhutan, Bolivia, Bosnia, Botswana, Brazil, Bulgaria, Burkina Faso, Cambodia, Cameroon, Canada, Chad, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Czech Rep., Denmark, Djibouti, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Finland, France, Gambia, Georgia, Germany, Ghana, Greece, Guatemala, Guinea, Haiti, Honduras, Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Korea, Rep., Latvia, Lebanon, Lesotho, Liberia, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, Maldives, Malta, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Morocco, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Pakistan, Panama, Paraguay,

Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia, Rwanda, Senegal, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Togo, Tunisia, Turkey, Uganda, Ukraine, United Kingdom, United States, Uruguay, Vanuatu, Venezuela, Zambia, Zimbabwe.

Table A3. First Stage results

	(1)	(2)	(3)	(4)	(5)	(6)
	DV: Democracy (Boix)	DV: Democracy (Boix)	DV: Boix*Cumulative Census	DV: Democracy (Polity)	DV: Democracy (Polity)	DV: Polity*Cumulative Census
L. Boix Regional share	0.934*** (0.045)	1.130*** (0.048)	0.067 (0.142)			
L6. Boix Regional share	0.030 (0.036)	0.085** (0.037)	-0.007 (0.109)			
Boix Regional share *Cumulative Census		-0.101*** (0.007)	0.754*** (0.022)			
L. Polity Region Average				1.223*** (0.120)	1.375*** (0.126)	1.349*** (0.358)
L6. Polity Region Average				1.451*** (0.312)	0.128 (0.317)	0.124 (0.380)
Polity Region Average *Cumulative Census					-0.029*** (0.009)	0.765*** (0.027)
GDP (log)	-0.124*** (0.013)	-0.078*** (0.014)	0.002 (0.042)	-2.738*** (0.200)	-2.578*** (0.205)	-2.002*** (0.601)
Inflation	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.001 (0.000)
Urban Population	0.001 (0.001)	-0.003*** (0.001)	-0.019*** (0.003)	0.100*** (0.012)	0.088*** (0.013)	-0.013 (0.037)
Trade	0.001*** (0.000)	0.001*** (0.000)	0.001* (0.001)	0.014*** (0.003)	0.019*** (0.003)	0.062*** (0.009)
Observations	6,543	6,139	6,039	5,676	5,589	5,589
R-squared	0.70	0.56	0.67	0.53	0.71	0.49

Notes: The dependent variables Boix et al. (2013 (Models 1 and 2) and Polity IV by Marshall et al. (2016) (Models 4 and 5) and their interaction with Cumulative census (Models 3 and 6). The key independent variables include lags of regional democracy share/average indicators and their interaction with Cumulative census. The unit of analysis is country–year. All specifications include a full set of country- and year-fixed effects. Standard errors are clustered in country level. *** p<0.01, ** p<0.05, * p<0.1.

Table A4. Effect of Democracy and State Capacity on the Net Gini Index: Alternative Measures of Democracy

	Mean Imputed Series	
	(1) Cheibub	(2) Dorsch and Maarek
Lagged Gini	0.943*** (0.020)	0.935*** (0.018)
Democracy Cheibub	-0.251 (0.154)	
Democracy Dorsch and Maarek		-0.183 (0.169)
Cumulative Census	0.050 (0.067)	0.035 (0.079)
Democracy Cheibub*Cumulative Census	0.127*** (0.047)	
Democracy Dorsch & Maarek (2019)*Cumulative Census		0.096* (0.055)
GDP (log)	0.427** (0.189)	0.409** (0.190)
Inflation	0.000 (0.000)	0.000 (0.000)
Urban Population	0.004 (0.008)	-0.002 (0.008)
Trade	0.000 (0.002)	-0.000 (0.002)
LR effect at Census=6	8.96	6.05
LR effect at Census=3	2.28	1.62
Marginal impact at Census=6	0.51	0.39
Marginal impact at Census=3	0.13	0.105
Observations	3,445	3,905
R-squared	0.993	0.991

Notes: The dependent variable is net Gini coefficient and main explanatory variables are one period lagged democratic scores from Cheibub et al. (2010) and Dorsch and Maarek (2019) interacted with Cumulative census variable. The unit of analysis is country–year. All specifications include a full set of country- and year-fixed effects. All independent variables are lagged one year. Standard errors are clustered in country level. *** p<0.01, ** p<0.05, * p<0.1.

Table A5. The Effect of Democracy on FDI and Financial Development

	(1)	(2)	(3)	(4)
	DV: Private Credit	DV: Private Credit	DV: FDI in-flows	DV: FDI inflows
	High Capacity	Low Capacity	High Capacity	Low Capacity
Lagged DV	0.883*** (0.008)	0.957*** (0.008)	-0.117*** (0.023)	0.319*** (0.019)
Polity	0.028* (0.015)	-0.009* (0.005)	0.088* (0.047)	-0.010 (0.017)
GDP per capita	0.123*** (0.024)	0.080*** (0.014)	0.086 (0.078)	0.171*** (0.058)
% Change GDP	-0.603*** (0.089)	-0.227*** (0.076)	0.762** (0.310)	0.113 (0.271)
Constant	-0.199 (0.167)	-0.048 (0.033)	0.140 (0.566)	-0.383*** (0.134)
Wald p-value	0.06	0.06	0.05	0.54
Observations	1,950	3,096	2,105	2,802
R-squared	0.987	0.971	0.378	0.367

Notes: The unit of analysis is country–year. All specifications include a full set of country- and year-fixed effects. All independent variables are lagged one year. Standard errors are clustered in country level. *** p<0.01, ** p<0.05, * p<0.1.

Table A6. The Effect of Democracy on Democracy on Fiscal Redistribution

	(1)	(2)	(3)	(4)	(5)	(6)
	DV: Redistribution	DV: Redistribution	DV: Health Expenditure	DV: Health Expenditure	DV: Education Expenditure	DV: Education Expenditure
	High Capacity	Low Capacity	High Capacity	Low Capacity	High Capacity	Low Capacity
Lagged DV	0.871*** (0.015)	0.830*** (0.012)	0.762*** (0.016)	0.709*** (0.026)	0.612*** (0.035)	0.805*** (0.020)
Polity	-0.046*** (0.012)	0.006 (0.005)	0.034 (0.023)	0.062** (0.027)	0.080 (0.050)	-0.013 (0.021)
GDP per capita	-0.012 (0.019)	0.005 (0.017)	0.089** (0.044)	0.235 (0.146)	-0.008 (0.107)	0.118** (0.058)
% Change GDP	-0.172** (0.082)	0.049 (0.099)	-0.624*** (0.115)	-0.514 (0.335)	-0.344 (0.239)	-0.556** (0.245)
Constant	0.159*** (0.053)	0.084 (0.076)	0.170 (0.117)	0.750*** (0.103)	0.124 (0.268)	0.030 (0.118)
Wald p-value	0.00	0.23	0.13	0.02	0.11	0.54
Observations	2,020	2,056	1,770	874	612	1,099
R-squared	0.989	0.989	0.972	0.904	0.935	0.935

Notes: The unit of analysis is country–year. All specifications include a full set of country- and year-fixed effects. All independent variables are lagged one year. Standard errors are clustered in country level. *** p<0.01, ** p<0.05, * p<0.1.

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