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IFN Working Paper No. 1311, 2019

# **Corruption, Judicial Accountability and Inequality: Unfair Procedures May Benefit the Worst-Off**

Niclas Berggren and Christian Bjørnskov

# Corruption, judicial accountability and inequality: unfair procedures may benefit the worst-off

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**Abstract** We ask whether, as many seem to think, corruption worsens, and judicial accountability improves, inequality, and investigate this empirically using data from 145 countries 1960–2014. We relate perceived corruption and *de facto* judicial accountability to gross-income inequality and consumption inequality. The study shows that corruption is *negatively*, and that judicial accountability is *positively*, related to both types of inequality. The estimates are particularly pronounced in democracies and arguably causal, as we find that the full effect only occurs after institutional stability has been established; The findings suggest that “unfair procedures” – corruption and deviations from judicial accountability – may benefit the economically worst off and worsen the situation of the economic elite.

**Keywords** Corruption, inequality, institutions, accountability, rent-seeking

**JEL Classification** C31, D02, D31, D72, D73, E26

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## 1 Introduction

Corruption is largely regarded as a pernicious activity that involves breaching procedural justice, that distorts political decisions and that generates various undesirable outcomes, such as lower economic growth.<sup>1</sup> One common concern is that corruption favors the rich and powerful. Conversely, judicial accountability (a prime aspect of institutional quality) is often seen not only as an antidote to corruption but also as something valuable *per se*, although the focus is rarely on the distributional consequences.<sup>2</sup> When corruption is present, and judicial accountability is compromised, “unfair procedures” in public governance tend to become endemic. In this study, we aim to analyze how these unfair procedures, whereby people gain influence over policy, legislation and their implementation in violation of the general system of rules, also relate to income and consumption inequality. Who benefits and who is made worse thereby?

We follow Bergh et al. (2016, p. 39) by regarding corruption as “the abuse of authority in which politicians and officials exploit their official position to engage in favoritism, thereby contravening the norm of impartiality in the exercise of authority to obtain direct or indirect personal gain for themselves or persons close to them.” Such favoritism typically presupposes the existence of another party who enters into some sort of exchange with the public official. This might, for example, be a contractor who offers a

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<sup>1</sup> On the generally negative relation between corruption and economic growth, see, e.g., Aidt (2009) and Pellegrini (2011). However, Méon and Weill (2010) find that in settings with very poor institutions, corruption can be efficiency-enhancing.

<sup>2</sup> For examples of a small literature relating, among other things, the quality of the legal system to inequality, see, Berggren (1999) and Bergh and Nilsson (2010). For one of many studies showing a positive relationship between judicial accountability and GDP per capita, see Voigt (2008).

politician a house or a payment, now or later, if the politician ensures that the contractor obtains a lucrative contract with the government in violation of procedural rules. Corruption and other undue influences can also occur in the legal sphere, which we study by focusing on judicial accountability. When this feature of legal institutions is in place, judges who engage in serious misconduct are either fired or disciplined. We interpret its absence as implying corrupt practices that allow judges to circumvent the rules, such as the ones requiring them to conscientiously implement and enforce government legislation.<sup>3</sup>

As Klitgaard (1988) originally emphasized, corruption is the outcome of monopoly plus discretion minus accountability. Indeed, this is why political institutions – not least democracy as such as well as various features of democracy, such as press freedom, free and recurring elections and a division of power – may help stifle corrupt behavior (Aidt, 2003).<sup>4</sup> They may also affect what the consequences of corruption look like, given that corruption occurs, by contributing to shaping which policies are instituted. One such consequence concerns the distribution and use of resources.

This insight is captured in our theoretical framework, which links political institutions (which give *de jure* power) and resources (which give *de facto* power and can be used for corruption) to the design of economic institutions and policies, as well as legal institutions and practices, that in turn shape economic outcomes and the distribution of resources (which is shaped both by the workings of the economic process and by redistribution). The political institutions and their stability determine not only who has formal political power but also influence how those with resources and actual political power are able to use those resources

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<sup>3</sup> For a conceptualization of judicial accountability as more or less the inverse of corruption, see Gutmann and Voigt (in press).

<sup>4</sup> Previous studies have shown that there are links between political institutions and corruption – see, e.g., Gerring and Thacker (2004), Lederman et al. (2005), Dreher et al. (2009) and Bjørnskov (2011).

to try to influence the decisions taken (Olson, 1982). One might assume that people with resources and an openness to corruption will try to have the economic institutions and policies formed such that they get more resources, and if the richest people are most active here, this suggests that corruption is linked to more inequality.

Yet, we emphasize that this need not be the case: It remains possible that those people realize that they cannot push through economic institutions and policies that primarily benefit them, due to the risk of social turmoil; or they can have an altruistic streak, so as to act to benefit others out of concern for their welfare; or it could be that people other than the richest are more successful, at times, in getting favors (e.g., on the local level, with much personal interaction between people in general and public officials). In these latter cases, more corruption could entail less inequality.

We uniquely explore this association to identify partial causality. By interacting the stability of political institutions with corruption, one can also investigate how this effect varies, as the Olsonian idea of institutional sclerosis implies that stability can give greater options for corrupt people to influence decisions in line with their preferences. Hence, one would expect the relationship between corruption and inequality to become stronger, in whatever direction, with more political stability. Any additional effect of corruption that arises once institutions stabilize after major changes and Olsonian sclerosis sets in must thus be causal.

In our empirical analysis, we use the measures of political corruption and judicial accountability of the *Varieties of Democracy* (V-Dem) project to study consequences for inequality, as it offers the longest time series available for a large number of countries (Coppedge et al., 2017). Our dependent variables are income and consumption inequality, which are measured both as income/consumption shares per quintile of the population and as Gini and Theil coefficients from the Göttingen-based Global Consumption and Income

Project (GCIP, 2018). The two inequality measures are related in the sense that net income puts a limit on absolute consumption: those with small incomes cannot spend all that much. But consumption patterns are also a matter of preference (of how much to save and how much to consume out of the net income one gets), which indicates that some people with high incomes may spend quite little, especially in relation to their income, if they for example have a thrifty side to them or have sufficient incentives to maintain a buffer or level of insurance as a response to substantial uncertainty. Meyer and Sullivan (2017) argue that consumption inequality is a useful complement measure because it often provides a more accurate picture of economic well-being than income.<sup>5</sup>

The results indicate that corruption is *negatively* related to both gross-income and consumption inequality, while judicial accountability is *positively* related to such distributional outcomes. More specifically, the more corruption there is, the higher is the income and consumption shares of the bottom quintile of the income/consumption distribution, and the more accountable the *de facto* procedures of the judicial institutions are, the higher are the income and consumption shares of the top quintile. These results are confirmed, in the case of consumption inequality, when using Gini and Theil coefficients instead of quintile shares.

Our findings suggest that in spite of what popular perceptions might be, corruption does not necessarily benefit the economic elites, and investing in judicial accountability may in fact skew the income distribution. Rather, the findings are compatible with the replacement-theory prediction that elites will allow others to benefit when they fear that their power will otherwise risk being eroded (which is plausibly the case in highly corrupt

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<sup>5</sup> Comparisons of trends in income and consumption inequality tend to find that the latter has not increased as much and is lower: see, e.g., Meyer and Sullivan (2017) for the United States, Brzozowski et al. (2010) for Canada and Jappelli and Pistaferri (2010) for Italy.

societies). They are also compatible with the elites having an altruistic streak; with non-elites being more successful at using corruption to their advantage than elites; and with the notion that market outcomes may simply turn out to benefit the non-elites, irrespective of what the corrupt instigators had aimed at accomplishing.

We control for political institutions, since they have been shown to affect corruption and can be expected to affect the distributions of income and consumption as well. Importantly, we perform an analysis where corruption and judicial accountability are interacted with the stability of political institutions, thereby testing a version of Mancur Olson's institutional sclerosis thesis. We find that the associations between corruption and income inequality, and between judicial accountability and income inequality, are similar over the stability of political institutions, while consumption inequality is reduced the longer such institutions have been firmly in place, suggesting that those that benefit from corruption (the four lower consumption quintiles of the distribution of income or consumption) and judicial accountability (the top quintile) are even better able to extract favors the more stable the institutional landscape. We can, nevertheless, only claim that the *increase* in the associations over time is causal.

As indicated by our theoretical approach, the relationship between corruption and inequality could be either of a positive or a negative kind. Hence, it is not surprising that the existing literature contains findings of both kinds. Some previous studies have, like us, found a negative relationship, but primarily for Latin America (Dobson and Ramlogan-Dobson, 2010; Andres and Ramlogan-Dobson, 2011). We are the first to identify a negative relationship for a broad cross-country sample. However, there are also studies indicating a positive relationship. Gupta et al. (2002) identify such a relationship, for some 38 countries over the period 1980–1997. Gyimah-Brempong (2002) likewise finds a positive relationship for Africa. Relatedly, Bjørnskov and Justesen (2014) uncover, also for an African sample,



that the poor are obliged to pay bribes to officials to a larger extent than others, which in principle is compatible with corruption benefitting the poor more than others.

What we add to the existing literature is a new, open-ended theoretical framework; a much more comprehensive dataset –we look at 145 countries over the period 1960–2014 and thus capture both a much more diverse group of countries and a much longer time period than any previous study; and we control for political institutions and interact their stability with corruption, which allows us to make direct causal claims.

This study matters in at least two ways. First, it brings new knowledge to bear on the important issue of what the consequences of corruption and judicial accountability are. If one dislikes inequality, our study suggests that corruption may not only have negative effects, and that judicial accountability may entail negative effects, which suggests that combatting corruption and strengthening judicial accountability may have unintended consequences. Second, it furthermore sheds new light on what determines income and consumption inequality, not only showing that corruption and judicial quality are important explanatory factors but also that political institutions – and not least their stability – matter. This should provide useful insights for those working in policy areas where corruption is present.

## **2 Theoretical framework**

### **2.1 The overall framework**

Our theoretical framework is inspired by the model relating political institutions, resources and power to economic institutions and outcomes in Acemoglu et al. (2005) and is illustrated in Fig. 1. Our ultimate variables of interest concern the distribution of resources (in our case income) and the distribution of their usage (in our case consumption). What determines such distributions? In our framework, this outcome, as well as other economic outcomes (such as GDP growth rates), are shaped by the economic institutions and policies in place.

*Insert Fig. 1 about here*

In our case, we are primarily concerned with the distribution of economic resources and their usage. Both institutions and policies influence the overall distribution of, e.g., income, wealth and consumption. Institutions do so by upholding the formal structure of the rule of law, which allows the market-economic process to operate, with “spontaneous” distributional outcomes (for gross values). Policies do so more directly by affecting what economic activities are undertaken, how they are undertaken and to what extent they are undertaken (all of which affects the distribution of gross values) and through redistribution (which in addition affects net values).<sup>6</sup> How the net incomes are used is then a matter of personal preference: Some part will be used for consumption, another for saving, etc., with resulting inequalities in these variables.

We are getting closer to the role of corruption and judicial accountability by asking: What, in turn, determines economic institutions and policies? The answer is *power* – of two kinds. On the one hand, there are actors who make political decisions, including legislative ones, in accordance with the political institutions. People who hold office in accordance with these formal rules execute *de jure* power. Thus, they are typically able to change economic institutions and policies if they follow the procedural criteria laid out by the rules.

On the other hand, there are those who have *de facto* power. Such power comes with resources, and it may be executed in various ways. For example, people may use the media to sway public opinion; they may instigate demonstrations and even revolts; and they may – which is what primarily interests us here – engage in rent-seeking and use corruption to achieve their goals (Congleton and Hillman, 2015). Clearly, then, resources can bring *de facto* political power through actions that influence those with *de jure* political power, such

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<sup>6</sup> For an analysis of how institutions and policies affect income inequality through the market process and through redistribution, see Berggren (1999).

that they devise economic institutions and policies in a manner that is in line with the preferences of those with resources, one instance of which is corruption in the form of “grand corruption” or “state capture” (Aidt, 2003; Knack, 2007). Resources are offered to a politician, bureaucrat or jurist, in exchange for some reform of institutions or policies or some promise not to enforce existing rules as they pertain to some activity.<sup>7</sup>

Yet, for any given set of legislation and regulation, corruption can also affect the actual implementation of *de jure* decisions when such decisions create a sufficient incentive to avoid regulations (Aidt, 2003). Contrary to state capture – i.e., when corruption and lobbying affects policy decisions – “petty” corruption can undermine the effectiveness of such policies when firms and individuals can bribe their way around them. As stressed by Bjørnskov (2011), this can under some conditions imply that economic activity, which would otherwise be subject to regulations, goes entirely unregistered and thus does not appear in official income statistics.

Lastly, there is a third set of institutions, the quality of which is of importance: judicial institutions. We take these to be approximately exogenous to the daily political process, and as such, they are able to influence decision-making through two avenues. First, the quality of the judicial institutions affects the scope of corruption (denoted by the arrow in Fig. 1 showing an effect on the execution of *de facto* power). Second, this quality also constrains the design of economic institutions and policies towards generality (Buchanan and Congleton, 1998). However, the legal system itself is not immune to corruption, which is where judicial accountability comes in. Corruption may be used to influence legal practitioners in various ways, such that the enforcement of rules is becoming laxer; and legal

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<sup>7</sup> The degree to which corruption is used depends on many things – see, e.g., Aidt (2003) and Pellegrini (2011) – not least on the political institutions themselves (as mentioned in the Introduction), with transparency, accountability and division of power as antidotes.

practitioners, such as judges, can themselves engage in corrupt practices so as to circumvent the rules and behave in ways that benefit them without being disciplined for it. Hence the arrow from *de facto* power to judicial institutions. The arrow from judicial institutions to economic institutions and policies denotes the importance of legal institutions for what economic decisions that are taken – but the generality that they should ideally uphold in economic decision-making may be undermined if corruption has reduced judicial accountability (taking away the constraining function of the legal system).

Against this schematic background, the main question of interest to us is what the effect of corruption in politics and the judiciary in the end is on income and consumption inequality, i.e., how the influence that comes with transfers of benefits to those with *de jure* power translates into income and consumption effects over the whole distributions.

## **2.2 Corruption, judicial accountability and income inequality**

Corruption, as an execution of *de facto* power, will increase income inequality if economic institutions and policies, or the degree to which they are enforced, are transformed such that the market process benefits those with higher incomes to a larger degree. Conversely, corruption will decrease income inequality if those with lower income gain more. Such differential outcomes may be explained either by those with lower incomes being more effective at using corruption, not least of a petty kind, or by others (consciously or unconsciously) helping them benefit more than themselves.<sup>8</sup>

With regard to judicial accountability and income inequality, first, low judicial accountability implies corruption in the judicial sphere as well as the absence of protection

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<sup>8</sup> The spirit of such behavior is captured in the model of Alesina and Angeletos (2005), where elites want to contain public discontent by helping the less well off, and in the model of Acemoglu and Robinson (2006), where politicians can assist the less well off in order to make sure they are not replaced as leaders.

against corruption in the political sphere, and hence that corruption is more prevalent. The reasoning above for how corruption relates to income inequality thus applies. Second, high judicial accountability indicates the absence of corruption among judges and a potentially effective constraint on corruption elsewhere in the public sector. In this case, there is a link to income inequality in the sense that whatever the *de jure* economic institutions and policies are, they are upheld by the legal system (cf. de Soto, 1989).

### **2.3 Corruption and consumption inequality**

Consumption inequality is a function of differences in available resources (net incomes) and differing personal preferences with regard to how much to spend and how much to save (Dyner et al., 2004).<sup>9</sup> Corruption can influence consumption inequality if it affects net incomes (through the market process or redistribution) and if it affects savings decisions – but also if it influences consumption opportunities in certain ways.

More precisely, we propose four mechanisms linking corruption to savings decisions and consumption opportunities. First, corruption can affect the trade-off between consuming and saving due to effects on (especially capital and consumption) taxes, and both corruption and judicial accountability shape the ability to circumvent taxes and financial regulations. While people strong in resources can probably exercise more power vis-à-vis the political decision-makers and bureaucrats, it remains possible that people with fewer resources can be more skillful, e.g., through small businesses, to evade the taxes in place. Corruption may therefore lead to tax evasion from both the relatively rich and the relatively poor, although evasion through operating in the underground economy is a more likely strategy for the poor (Bjørnskov, 2011). Another factor regarding the choice of whether to save and consume in

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<sup>9</sup> If those with higher incomes save a larger share, this points at consumption inequality being lower than net-income inequality, which is also confirmed in empirical studies for several countries (see note 5 above).

relation to corruption is safety in saving, which has to do with legal institutions and their enforcement. If people suspect that savings may be confiscated or not protected well, they will tend to consume relatively more. This perception of safety can differ between consumption groups – not least in highly corrupt societies (Sonin, 2003).

Second, corruption may affect the price structure in a pro-poor direction by enabling increased international trade (Fajgelbaum and Khandelwal, 2016). When, for example, prices on certain goods are higher than in neighboring countries, petty corruption at the border will enable smuggling. As price differences on bulk goods can be sizeable due to trade barriers (Golub and Mbaye, 2009), corruption therefore effectively reduces the prices that people pay on ordinary goods (Schwarz, 2012). As such goods constitute a substantial share of the total consumption basket of poor people, these price changes allow a larger consumption increase among poorer segments of society and will thereby be associated with a decrease in consumption inequality.

The third mechanism is related to these types of effects, as in particular richer consumers may be able to divert part of their consumption to other countries as a way to avoid potentially corrupt transactions. Consumption diversion may also occur as a reaction to the price changes that corrupt non-tariff barriers induce in the domestic economy. Diversion implies that the official consumption statistics for a country may not capture the effects of corruption very precisely for consumer groups that engage in it.

As for the final mechanism, policies that entail price controls will have similar effects as trade barriers and can affect the consumption opportunities of different groups differently. While Brazil and Chile implemented very similar price controls in the early 1970s, they had different economic consequences. As bureaucrats supposed to enforce the price controls could be easily bribed in Brazil but not in Chile, the controls had strongly adverse consequences for the Chilean poor but not those in Brazil (Leff and Heidenheimer, 2017).

Actual consumption inequality therefore increased in Chile while the intended effects were offset by corruption in Brazil.<sup>10</sup> Similar effects may also pertain when corruption, at times due to low judicial accountability, allows individuals and other firms to circumvent domestic regulation that create or enforce monopolies (Stigler, 1970).

#### **2.4 Corruption, judicial accountability and inequality: expected signs**

Will different types of inequality rise or fall as a result of corruption? Many might think it unambiguously clear that each measure discussed here will rise. But our theoretical framework paints a more nuanced and complex picture – certainly allowing for such an outcome but not necessarily implying it. It all depends on how people with *de facto* power use their power and how they can use it, which is in turn largely determined by political institutions and their stability. This will shape economic institutions and policies in certain ways, which contribute to determining both income inequality and consumption inequality. Those with many resources can try to influence the process in their favor through corrupt means; but they could also benefit others by instigating market processes that (intentionally or unintentionally) shape the gross-income distribution in ways that favor people with small resources, by influencing the redistributive system (intentionally or unintentionally) such that the net-income distribution becomes more equal and also by influencing the factors that determine whether to save or consume (intentionally or unintentionally) in such a manner that those with small budgets fare better.

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<sup>10</sup> Also see Bergh and Nilsson (2014) for a related finding. They show that the poor can benefit from price changes induced by higher income inequality. The idea is that more poor consumers lead to cheap products becoming more profitable and hence more supplied. They confirm a negative relation between income inequality and the price of inferior goods.

These outcomes in favor of other groups could be accidental or motivated by altruistic concerns or by insights that “too much inequality” is bad, in the long-term, for overall social cohesion and the society in which they live and, according to the replacement-effect logic, for their own power base. In addition, it should not be ruled out that groups with few resources can sometimes be successful in influencing political decision-makers as well – maybe by contributing their votes and time to the politicians, but also, especially in local settings, by bribing officials to the benefit of, typically, small businesses.

Next, what might the sign of the effect of judicial accountability on our inequality measures be? As we clarified in the preceding section, the links are of at least two kinds. First, if judicial accountability is low, we basically have a setting with corruption, and the reasoning concerning how corruption affects the inequalities under consideration applies. Second, if judicial accountability is high, we have a situation which arguably is characterized by low corruption, but the judicial institutions solidify whatever economic institutions and policies that are decided upon, with their respective distributional consequences. Hence, while we can delineate these “structural” links, on the basis of theory, the sign could be either positive or negative.

## **2.5 The role of the stability of political institutions**

Lastly, whatever the effect of corruption and judicial accountability on inequality, we propose that the stability of political institutions can influence the effects in such a way as to strengthen them. This proposition stems from Olson (1982) and his idea of institutional sclerosis, suggesting that sets of rules that are in place over long periods of time allow for interest groups or corrupting agents to better develop and sustain their activities vis-à-vis the political decision-makers. Institutional stability lowers the costs associated with rent-seeking, as agents form stable relationships and modes of operation, and the same logic applies to



corruption. The result is that special interests are able to capture regulatory agencies (Stigler, 1970) or influence decision-makers to favor them (including at the local level, where petty corruption is often present). Hence, when considering a potential moderating effect, we expect a reinforcement: Those that are favored by corruption (in the distribution of income or consumption) are even more favored the more stable the political institutions are. Olson's theory of institutional sclerosis therefore also implies that the consequences of corruption will be increasing in regime stability and most severe in societies with strongly entrenched institutions. Importantly, we also employ Olson's insight in our causal identification strategy.

### **3. The data and empirical approach**

The data we use cover 145 countries from all over the world for the period 1960–2014 for which we have data on corruption, judicial accountability and the income distribution. Our dependent variables are income and consumption inequality, primarily measured as the shares of total (wage as well as non-wage) incomes obtained per population quintile and as the share of all consumption spent per quintile, but also measured, in a follow-up analysis, in the form of Gini coefficients and the Theil index (for a presentation of the latter, see Conceição and Ferreira ,2010). The income inequality measures capture gross incomes (i.e., incomes before taxes and transfers), which implies that redistribution is ruled out as a direct mechanism through which corruption can affect the studied income distribution. The source is the Göttingen Consumption and Income Project (GCIP, 2018), which provides both comprehensive coverage of multiple inequality measures as well as data on decile and quintile income shares.

Our main explanatory variables are corruption, judicial accountability, as well as political institutions and their stability. We derive our measure of corruption from the V-Dem dataset, where we also get a measure of *de facto* judicial accountability (Coppedge et al.,

2017a). The V-Dem corruption index is an aggregate of measures of six types of corruption in political and judicial institutions, distinguishing between bribery and embezzlement in executive, legislative and judicial processes. Its intention is to capture both “corruption aimed and influencing law making and that affecting implementation” (Coppedge et al., 2017a, p. 72).<sup>11</sup> The V-Dem corruption measure therefore conceptually captures the type of problems outlined in our theoretical considerations.

The judicial accountability index from V-Dem is constructed in the same way and intended to specifically capture the likelihood that “judges [who] are found responsible for serious misconduct [...] are [...] removed from their posts or otherwise disciplined” (Coppedge et al., 2017a, p. 211). One reason for adding this index is to alleviate a well-known problem in corruption research: that the attempt to measure behavior, which the involved parties try to keep a secret, is subject to considerable measurement error. Another reason for exploring both measures is that institutional quality could affect inequality in several other ways than corruption, not least through affecting the degree of protection of

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<sup>11</sup> For a full description of the V-Dem measurement methodology, see Coppedge et al. (2017b). The V-Dem measure appears very similar to standard alternatives, and for example correlates at about 0.9 with the Transparency International (2018) Corruption Perceptions Index. Admittedly, this type of perceptions-based measure has faced critique, e.g., by Donchev and Ujhelyi (2014), who claim that it is biased downwards and that large countries are penalized since it measures absolute corruption perceptions, and by Ko and Samajdar (2010), who point out the risk of selection bias, longitudinal sensitivity and measurement errors. However, there are also defenders of the measure, most notably Kaufmann et al. (2007), Uslaner (2017) and Versteeg and Ginsburg (2017), who find that different measures capture the same underlying phenomenon. We tend to agree with the defenders. The measure is not without its imperfections, but it seems valid overall and better than available alternatives for a large cross-country sample such as ours. This conclusion obtains support from Gutmann et al. (2018), who document a rather clear positive correlation between perceptions of corruption and experience of corruption, using microdata.

private property rights (e.g., Dong and Torgler, 2010). Yet, as judicial accountability is nevertheless associated with better control of corruption at all levels of society, it is therefore strongly (and negatively) correlated with corruption. Not controlling for a factor such as judicial accountability would therefore cause such effects to be captured by our measure of corruption, and vice versa, which would therefore lead to potentially biased estimates. While its inclusion therefore allows us to estimate effects of, e.g., protection of property rights, it also ensures us that we are capturing approximately the full effects of corruption, and no consequences of spuriously correlated factors.<sup>12</sup>

We match these data to information on political institutions from Bjørnskov and Rode (in press). These characteristics first include whether the country has a single-party system, is an electoral autocracy – i.e. that it has a multi-party system but where elections are not free and fair and thus cannot lead to a change of government – or if it is a full democracy; the baseline category is countries without elections. From the same source, we obtain information on whether or not the parliament is bicameral and whether elections are based on proportional voting or some form of first-past-the-post system. Finally, we capture the stability of political institutions through a measure counting how long ago a major change in political institutions occurred. We define such a change as either a successful coup, the implementation of a new or strongly amended constitution, or non-coup regime transition including peaceful regime transitions. In our data, this latter category mainly consists of democratizations.

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<sup>12</sup> Since corruption is causally affected by judicial accountability (Bjørnskov, 2011), it is possible to imagine a mechanism in which judicial accountability affects corruption that in turn affects the distribution of income or consumption. By directly controlling for judicial accountability, we may underestimate the full effects of such mechanisms, and the estimated effects of corruption in the following can therefore best be thought of as lower-bound estimates of the full effect but correct unbiased estimates of the *direct* effects.

We follow the general literature on income inequality back to Kuznets (1955) by first adding the logarithm to real GDP per capita and its square. We also include the trade share of GDP, the share of government consumption and the price level of capital relative to the US; the data are all from the Penn World Tables, mark 9 (Feenstra et al., 2015). Finally, we add dummies for whether successful and failed coups occurred in a country; these data are from Bjørnskov and Rode (in press). We summarize all data in Table 1.

*Insert Table 1 about here*

In the following, we estimate a panel with yearly observations and control variables lagged one year, using OLS with two-way fixed effects. As such, the inclusion of year and country fixed effects takes care of all changes due either to common international trends and potential changes in measurement methodology as well as time-invariant country-specific factors. We note that we cannot fully establish causality in the relation between corruption, judicial accountability and inequality, as several mechanisms exist that could create reverse causality (e.g. Jong-sung and Khagram, 2005). We therefore follow Nizalova and Murtazashvili (2016) in adding an interaction term between corruption and the (logarithm to) time since the last major institutional change (cf. Dreher et al., 2018). As long as the time since the last change is approximately exogenous to corruption, causality can be directly inferable from the effect heterogeneity (the interaction term).<sup>13</sup> In other words, even though we cannot claim that the association that we observe between corruption and inequality *around* regime transitions is causal in a particular direction, any additional effect that arises

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<sup>13</sup> This assumption implies that our causal strategy is only valid under the assumption that subsequent institutional stability after an institutional change is not affected by the initial distribution of consumption or income. While one might be able to set up a theoretical model in which distributional aspects affect institutional stability, the association depicted by Fig. A1 in the Appendix indicates that this is not likely to be an actual problem.

over time after a major institutional change must be so. Apart from being able to establish causality under such conditions, we also emphasize that an increasing effect of corruption after regime change is not only fully consistent with Olson's (1982) theory of institutional sclerosis, but also a logical consequence of the mechanisms behind sclerosis. Our causal identification strategy is thus based on a particular theoretical expectation.

#### **4. Results**

We begin by presenting the baseline findings in Tables 2 and 3, in the form of effects of corruption and judicial accountability, and other explanatory variables, on quintile shares of the distribution of income and consumption, respectively. In both tables, columns 1–5 report the results for the first to fifth quintile for the full sample, while columns 6–10 report results for a subsample where we exclude all observations from non-democracies.

*Insert Table 2 about here*

We first observe significant evidence of a Kuznets Curve, as GDP per capita exhibits a clear hump-shaped relation with inequality. In the full sample, the top point of the Kuznets Curve for the income distribution is approximately 4,000 USD for the first quintile and 6,000 USD for the fifth quintile, while the equivalent top points for the democratic subsample are 5,000 and 8,000 USD. The corresponding top points for the consumption distribution (in Table 3) are around 6,000 and 9,000 USD in the full sample and the democratic subsample, respectively. We also observe a more equal distribution of income associated with faster population growth. In addition, international trade is associated with more inequality as more trade can be linked to a concentration of income and consumption in the top quintile. Moreover, while a larger size of government appears to be associated with a more equal distribution of income in Table 2, it is associated with a *less* equal distribution of consumption in Table 3. With respect to the last economic factor, investment prices, we find

mixed evidence that it mainly affects the fourth quintile, i.e., what may be thought of as the income share of the upper middle class.

*Insert Table 3 about here*

Turning to the association of the inequality measures with political institutions, single-party regimes appear to be associated with a concentration of incomes in the top quintile. Yet, focusing on consumption, we find that all party-based regimes have more equal consumption distributions than countries without elections, and that full democracies on average exhibit the most equal consumption distribution (cf. Dorsch and Maarek, 2019). We also observe that bicameral regimes tend to have income distributions skewed, to the benefit of the top quintile, but consumption distributions that, if anything, are slightly skewed towards the fourth quintile. Proportional voting systems are also in general associated with more skewed distributions of income and consumption, although the effects on consumption inequality are curiously driven entirely by the non-democratic observations. Yet, temporarily ridding a country of such institutions through a successful coup appears to equalize consumption opportunities in most countries.<sup>14</sup>

Finally, turning to the main aim of this paper, we find throughout Tables 2 and 3 that stronger judicial accountability is associated with substantially larger top quintile shares, while political corruption is associated with smaller top quintile shares, and particularly so in democracies. Comparing the results for the distribution of income (in Table 2) and consumption (Table 3), we also observe that these associations are significantly stronger for consumption than for income. Hence, what might be called unfair procedures – corruption

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<sup>14</sup> Although previous research has not explored the apparently equalizing effects of successful coups, the effect may not be entirely unexpected. The purpose of many coups is to remove an entrenched political elite that in most cases enjoy substantial rents. If that happens, we would expect to observe a decline, although perhaps only temporarily, in the income or consumption share of the elite.

and deviations from judicial accountability – are related to distributional outcomes that are adverse to the economic elites and beneficial for the relatively worse-off!

Yet, as noted in Section 3, we cannot claim that these associations are causal in a particular direction. In Table 4, we therefore introduce an interaction with the logarithm to the time since a large institutional change occurred; we illustrate the estimate heterogeneity in Figs 2 and 3. The basis for this exercise, as outlined in Section 2, is Olson’s (1982) theory of institutional sclerosis: when institutional structures become very stable, rent-seeking in the form of both lobbying and corruption becomes cheaper and special interest groups become an integral part of political and judicial life. Any causal effect of political corruption and judicial accountability will therefore be likely to increase over time as the institutional structure becomes entrenched.

*Insert Table 4 about here*

*Insert Fig. 2 about here*

*Insert Fig. 3 about here*

This is exactly what we observe in Table 4 (which includes an identical baseline specification as previous tables and which is based on our democratic subsample). We illustrate the findings in Fig. 2, which depicts the marginal effect of corruption on the share pertaining to the bottom quintile of income and consumption and Fig. 3, showing the marginal effect of judicial accountability on the top quintiles of the income and consumption distributions. We refrain from plotting the rest of the associations as they either are insignificant in Table 4 or subsequently prove to be fragile (see Tables A2 and A3 in the Appendix).

While the estimates in Table 4 and the illustration in Fig. 2 seem to show heterogeneity over time in the case of income, those results prove to be fragile in our ensuing regional jackknife analysis (see below), and for income we consequently cannot claim any

causal evidence. However, the effects of corruption on the distribution of consumption are clearly increasing in the time since the last major institutional change. After about ten years, the estimate on the bottom quintile of the distribution of consumption is approximately .012 – calculated as the “pure” estimate plus the interaction term times the log to 10 – and significantly different from the estimate at time zero. We observe quite similar effects of judicial accountability that do not appear heterogeneous for the distribution of income, but clearly are so for the distribution of consumption. The heterogeneity is evident in Fig. 3 where the association between judicial accountability is clearly zero for the top income quintile, but strongly increasing over time for the top consumption quintile.

Hence, while we cannot claim that the *full* estimates of corruption – the pure estimate of corruption plus the interaction effect – or that the full estimates of judicial accountability can be thought of as causal, we can still make causal claims. Because the time since the last major institutional change is exogenous to the quintile consumption shares, we can with statistical confidence say that the *increases* in the estimates that occur over the time since the last major institutional change *causally* affect the distribution of consumption. For example, the estimate of corruption of .008 on the bottom consumption quintile may or may not be causal, but the significant increase of an additional .004 after ten years can be interpreted as evidence of a causal effect of corruption.

Moreover, we are confident that the mechanisms through which this effect runs must be distinct from any mechanisms affecting the distribution of income. Because we include judicial accountability and find a similar pattern of heterogeneity in the estimates of judicial accountability, which appears somewhat stronger for the consumption distribution, we can be quite certain that the identified corruption effects do not merely reflect consequences of other parts of the institutional framework such as the quality of judicial institutions or the shape of political institutions, which would be captured by the inclusion of judicial accountability and



democracy. Consistent with our theoretical considerations, we therefore find that institutional features not related to the control of corruption also affect the distribution of income and consumption in the longer run – judicial accountability also appears important (Dreher and Schneider, 2010; Bjørnskov, 2011).

So far, the results show substantial support for equalizing effects of political corruption on consumption, and most likely that judicial accountability has the opposite effect. Yet, the option remains that these findings are specific to exploring quintile shares of the distribution of income and consumption, and that the overall findings are driven by specific countries or small groups of countries.

We therefore perform three sets of sensitivity analyses. We first re-estimate our main findings using two measures of the overall shape of the consumption distribution: Gini coefficients and the Theil index. We report the findings in Table A1 in the Appendix, using the full sample in columns 1 and 2 and the democratic subsample in columns 3 and 4.

The overall findings are similar to those in Tables 2–4 with evidence for a Kuznets Curve, population effects and a positive association with the size of government. We also observe more evidence for the equalizing effects of coups and consequences of democratic political institutions. Most importantly, we can confirm a negative association between corruption and consumption inequality, with substantial evidence for heterogeneous effects of corruption and judicial accountability across the distribution of consumption. The strongly significant interaction terms in the lower panel of Table A1 show that the effects of corruption and judicial accountability are increasing in institutional stability, and a comparison between estimates using the full sample and the democratic subsample provide clear indications that these effects are stronger in democratic societies. Our main findings therefore do not appear to be specific to a particular way of measuring consumption inequality.

Second, we have performed two jackknife exercises to investigate whether there are particular regions in the world that drive the results and whether they can be associated with particular decades. The regions that we included are the West, South East Asia, the rest of Asia, North Africa and the Middle East, Sub-Saharan Africa, Latin America and the Caribbean, and the Pacific. The results, reported in Table A2 in the Appendix, show the particular results for effects of corruption on the bottom quintile of the consumption distribution, and effects of judicial accountability for the top quintile of the consumption distribution, that are statistically robust and not driven by single regions or decades. A further country jackknife (not shown) furthermore support these two particular results. There is, however, one exception: The heterogeneity over time we identified in Fig. 2 for the marginal effects of corruption on the income share of the bottom quintile is not robust to our region jackknife test: the distribution changes shape when excluding Asia, and the differences over time become insignificant when excluding the Western countries.

A further worry could be that some of our findings are driven by observations that are interpolated in the GCIP dataset. We deal with this problem in Table A3 in the Appendix, where we delete all obviously interpolated data, which we identify when income or consumption shares do not change at all from year to year, or if the changes perfectly follow a linear change (i.e., a linear interpolation) between years. As is evident in the table, this final test reaffirms our main findings for corruption (the bottom quintile) and judicial accountability (the top quintile). On this basis, we conclude that the main results are statistically robust, and also that the size of the estimates appear relatively stable across tests.

Finally, the results may reflect purely distributional changes or differential *growth* performance across quintiles. We address this concern in Table A4 in the Appendix, where we instead of consumption shares use the log of absolute consumption levels. However, here

we must emphasize that our causal strategy is less likely to be valid.<sup>15</sup> We nevertheless find a fairly similar pattern for the top quintile but generally statistically insignificant results for the rest. As such, although causality is a main concern with absolute levels, the slight indications of heterogeneity across quintiles may be taken to suggest that our results are not likely to be driven by pure growth differences.

## 5. Conclusions

In our desire to pinpoint how corruption and judicial accountability affect inequality, we have explored a large cross-country sample covering more than half a century, which we uniquely collect by combining data on the income distribution from the Global Consumption and Income Project with institutional data from the Varieties of Democracy project. Contrary to common intuition, our results reveal that corruption is related to both income and consumption inequality in a negative way and that judicial accountability is related to these inequality indicators in a positive way. This suggests that the relative position of economic elites worsens with corruption, which in turn indicates either that other parts of the income and consumption distributions are better able to take advantage of corruption, e.g., by evading taxes and regulations, or that the elites, either consciously or unconsciously, use their *de facto* power to favor others more than themselves (perhaps in a preemptive way to retain power). Conversely, judicial quality appears to protect the consumption shares of the economic elite, indicating that having accountable judiciaries may serve to fossilize an unequal distribution of consumption in society.

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<sup>15</sup> While we argue that the identifying assumption that the stability of institutional changes is approximately orthogonal to the distribution of income or consumption, we cannot make the same claim when it comes to absolute income or consumption levels. The reason is that institutional stability is known to be more likely in relatively rich countries.

For average effects of corruption or judicial accountability we cannot claim any causal inference. However, we follow recent studies in establishing causality by exploring effect heterogeneity. Interacting corruption and judicial accountability with the time since the last major change in political institutions allows us to test a version of Olson’s institutional sclerosis thesis, which uniquely also allows us to draw partial causal inference. Assuming that the time since the last major change is exogenous to inequality – an assumption that we cannot test but which the available data, as shown in Fig. A1 in the Appendix, strongly indicate – we find that the effects of corruption and judicial accountability are increasing in this factor for consumption inequality. In other words, we observe that corruption contributes to a more equal distribution of consumption and that judicial accountability contributes to a less equal distribution the longer the political institutions have been stable. These implications are independent of the specific way we measure inequality, are valid across time and regions, and are not specific to autocracies.

We see this study as a contribution to the literature on the consequences of institutional quality that also sheds new light on the determinants of inequality. Our findings suggest that although corruption and poor judicial institutions may violate norms of just conduct and give rise to other detrimental outcomes, it need not necessarily worsen inequalities in society. Moreover, judicial quality, despite its positive connotations, may indeed do the opposite. Yet, we must emphasize that both corruption and judicial accountability also affect long-run growth such that investing in accountability and combatting corruption would lead to *absolute* advances for the entire society.

Both factors could also, in principle, affect the precision of national accounts data if, for example, the relatively rich either avoid corruption by diverting consumption to other countries, or use corrupt practices to hide both income and consumption from regular measurement. In addition, while we observe distributional changes, we have no way of

knowing whether corruption and institutional accountability affect the degree of social mobility. In other words, we observe changes in the distributions of consumption, but do not know how likely individuals and individual households are to stay in specific parts of the distribution. Our findings nevertheless seem to us important to take into careful account when considering policy measures that try to combat corruption and strengthen judicial accountability: possible side effects along distributional margins may need to be deliberately counteracted.

## **Appendix**

*Insert Table A1 here*

*Insert Table A2 here*

*Insert Table A3 here*

*Insert Fig. A1 here*

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## Tables and figures

**Table 1** Descriptive statistics

	Mean	Standard deviation	Observations
Income quintile 1	0.049	0.027	8,839
Income quintile 2	0.089	0.033	8,839
Income quintile 3	0.133	0.034	8,839
Income quintile 4	0.199	0.027	8,839
Income quintile 5	0.529	0.117	8,839
Consumption quintile 1	0.065	0.019	8,839
Consumption quintile 2	0.106	0.022	8,839
Consumption quintile 3	0.149	0.021	8,839
Consumption quintile 4	0.212	0.017	8,839
Consumption quintile 5	0.466	0.075	8,839
Gini coefficient	0.391	0.085	8,839
Theil index	0.272	0.145	8,839
Log GDP	8.635	1.173	7,579
Log population	1.956	1.782	7,579
Trade share	0.478	0.520	7,579
Government size	0.196	0.106	7,579
Investment price	1.356	0.995	7,579
Coup, success	0.022	0.152	8,739
Coup, failed	0.026	0.163	8,739
Single party regime	0.201	0.401	8,672
Electoral autocracy	0.239	0.427	8,672
Democracy	0.454	0.498	8,672
Bicameral system	0.419	0.497	7,386
Proportional voting	0.439	0.496	7,087
Large institutional change	0.115	0.319	8,784
Log time since change	2.141	1.184	8,704
Judicial accountability	2.019	0.955	7,597
Political corruption	0.479	0.276	7587

**Table 2** Main results, income distribution

	All countries					Democratic subsample				
	1 Q 1	2 Q 2	3 Q 3	4 Q 4	5 Q 5	6 Q 1	7 Q 2	8 Q 3	9 Q 4	10 Q 5
Log GDP	-2.980*** (.361)	-2.476*** (.375)	-1.594*** (.381)	.198 (.404)	6.868*** (1.326)	-3.232*** (.435)	-3.294*** (.444)	-3.224*** (.449)	-2.359*** (.484)	12.085*** (1.553)
Log GDP squared	.179*** (.022)	.146*** (.022)	.089*** (.023)	-.019 (.024)	-.396*** (.079)	.190*** (.025)	.187*** (.026)	.176*** (.026)	.119*** (.028)	-.671*** (.090)
Log population	.139 (.108)	.323*** (.112)	.450*** (.114)	.373*** (.121)	-1.275*** (.397)	-.132 (.125)	.197 (.128)	.621*** (.129)	.931*** (.139)	-1.589*** (.447)
Trade share	-.375*** (.076)	-.294*** (.079)	-.283*** (.079)	-.222*** (.085)	1.156*** (.277)	-.348*** (.083)	-.279*** (.085)	-.255*** (.086)	-.169* (.092)	1.026*** (.296)
Government size	.871*** (.174)	.944*** (.181)	.969*** (.184)	.906*** (.195)	-3.572*** (.639)	.886*** (.214)	.862*** (.219)	.832*** (.221)	.674*** (.238)	-3.076*** (.765)
Investment price	-.041*** (.016)	-.031* (.017)	-.008 (.017)	.049*** (.018)	.031 (.061)	-.054*** (.020)	-.059*** (.021)	-.035* (.021)	.036 (.023)	.114 (.073)
Coup, success	.112 (.109)	.102 (.114)	-.004 (.116)	-.216* (.123)	.009 (.402)	.223* (.132)	.179 (.135)	.001 (.137)	-.305** (.147)	-.092 (.473)
Coup, failed	-.081 (.078)	-.066 (.081)	-.034 (.082)	.060 (.087)	.118 (.287)	-.152* (.091)	-.163* (.093)	-.130 (.094)	.003 (.101)	.443 (.326)
Single party regime	-.267*** (.101)	-.304*** (.105)	-.268** (.106)	-.099 (.113)	.929*** (.370)	-	-	-	-	-

Electoral	-.157	-.086	.027	.227**	-.007	-	-	-	-	-
autocracy	(.096)	(.099)	(.101)	(.107)	(.352)	-	-	-	-	-
Democracy	-.318***	-.169*	-.003	.219**	.273	.026	.075	.078	.009	-.192
	(.099)	(.103)	(.104)	(.110)	(.362)	(.054)	(.055)	(.056)	(.060)	(.193)
Bicameral system	-.357***	-.299***	-.190***	-.039	.886***	-.302***	-.281***	-.191***	-.050	.825***
	(.047)	(.049)	(.049)	(.053)	(.174)	(.054)	(.055)	(.055)	(.059)	(.191)
Proportional	-.467***	-.572***	-.628***	-.545***	2.194***	-.219***	-.467***	-.635***	-.653***	1.949***
voting	(.056)	(.059)	(.059)	(.063)	(.207)	(.069)	(.071)	(.072)	(.078)	(.249)
Judicial	-.151***	-.144***	-.101***	-.011	.395***	-.139***	-.073*	.023	.151***	.019
accountability	(.036)	(.037)	(.038)	(.040)	(.132)	(.039)	(.041)	(.041)	(.044)	(.142)
Political	.196	.022	.172	.579***	-1.048**	.624***	.414***	.488***	.655***	-2.299***
corruption	(.136)	(.142)	(.144)	(.153)	(.501)	(.166)	(.169)	(.171)	(.185)	(.592)
Observations	6172	6172	6172	6172	6172	5043	5043	5043	5043	5043
Countries	145	145	145	145	145	142	142	142	142	142
Within R squared	.099	.071	.058	.049	.066	.079	.065	.066	.066	.067
F statistic	9.38	6.47	5.26	4.45	6.04	6.06	4.94	4.99	5.04	5.12

\*\*\* (\*\*) [\*] denote significance at  $p < .01$  ( $p < .05$ ) [ $p < .10$ ].

**Table 3** Main results, consumption distribution

	All countries					Democratic subsample				
	1 Q 1	2 Q 2	3 Q 3	4 Q 4	5 Q 5	6 Q 1	7 Q 2	8 Q 3	9 Q 4	10 Q 5
Log GDP	-3.303*** (.312)	-3.363*** (.341)	-2.765*** (.347)	-1.366*** (.346)	10.797*** (1.191)	-2.961*** (.354)	-3.412*** (.389)	-3.098*** (.413)	-1.883*** (.427)	11.355*** (1.419)
Log GDP squared	.189*** (.019)	.189*** (.020)	.150*** (.021)	.064*** (.021)	-.593*** (.071)	.171*** (.021)	.193*** (.023)	.169*** (.024)	.092*** (.025)	-.626*** (.083)
Log population	.797*** (.093)	1.052*** (.102)	1.129*** (.104)	.861*** (.104)	-3.838*** (.357)	.544*** (.102)	.864*** (.112)	1.033*** (.119)	.894*** (.123)	-3.334*** (.408)
Trade share	-.259*** (.065)	-.205*** (.071)	-.058 (.072)	.198*** (.072)	.324 (.249)	-.229*** (.068)	-.189** (.074)	-.012 (.078)	.308*** (.081)	.124 (.271)
Government size	-1.385*** (.150)	-.205*** (.071)	-.612*** (.167)	.420** (.167)	2.702*** (.574)	-1.528*** (.174)	-1.277*** (.192)	-.733*** (.204)	.451** (.210)	3.088*** (.699)
Investment price	-.005 (.014)	-.011 (.016)	.002 (.016)	.032** (.016)	-.018 (.054)	-.017 (.017)	-.031* (.018)	-.012 (.019)	.048** (.02)	.012 (.067)
Coup, success	.319*** (.095)	.416*** (.104)	.364*** (.105)	.133 (.105)	-1.231*** (.361)	.283*** (.108)	.274** (.119)	.183 (.126)	-.003 (.129)	-.736* (.432)
Coup, failed	-.064 (.067)	-.065 (.074)	-.087 (.075)	-.088 (.075)	.304 (.258)	-.152** (.074)	-.137* (.082)	-.121 (.087)	-.048 (.089)	.457 (.298)
Single party regime	.330*** (.087)	.479*** (.095)	.433*** (.097)	.095 (.097)	-1.334*** (.333)	-	-	-	-	-
Electoral autocracy	.372*** (.083)	.575*** (.091)	.599*** (.092)	.298*** (.092)	-1.842*** (.316)	-	-	-	-	-
Democracy	.686***	.979***	.989***	.527***	-3.177***	.377***	.437***	.389***	.192***	-1.393***

	(.085)	(.093)	(.095)	(.095)	(.325)	(.044)	(.048)	(.051)	(.053)	(.176)
Bicameral system	-.004	-.003	.009	.024	-.024	-.122***	-.096**	-.028	.124**	.122
	(.041)	(.045)	(.045)	(.045)	(.156)	(.044)	(.048)	(.051)	(.053)	(.175)
Proportional	-.119**	-.179***	-.202***	-.167***	.666***	-.003	-.102	-.124*	-.070	.299
voting	(.049)	(.053)	(.054)	(.054)	(.186)	(.057)	(.062)	(.066)	(.068)	(.228)
Judicial	-.339***	-.341***	-.276***	-.070**	1.026***	-.239***	-.215***	-.141***	.039	.556***
accountability	(.031)	(.034)	(.034)	(.034)	(.118)	(.032)	(.036)	(.038)	(.039)	(.129)
Political	.272**	.186	.286**	.638***	-1.379***	1.074***	1.008***	.984***	.923***	-3.986***
corruption	(.118)	(.129)	(.131)	(.131)	(.450)	(.135)	(.149)	(.158)	(.163)	(.541)
Observations	6172	6172	6172	6172	6172	5043	5043	5043	5043	5043
Countries	145	145	145	145	145	142	142	142	142	142
Within R squared	.117	.113	.108	.109	.109	.117	.099	.097	.125	.096
F statistic	11.31	10.85	10.29	10.37	10.42	9.39	7.86	7.60	10.15	7.55

\*\*\* (\*\*) [\*] denote significance at  $p < .01$  ( $p < .05$ ) [ $p < .10$ ].



**Table 4** Conditional results, both distributions, democratic subsample

	Income distribution					Consumption distribution				
	Q 1	Q 2	Q 3	Q 4	Q 5	Q 1	Q 2	Q 3	Q 4	Q 5
Large institutional change	-.003 (.003)	.002 (.003)	.004 (.003)	.002 (.003)	-.006 (.009)	.004* (.002)	.006** (.002)	.005* (.003)	.001 (.003)	-.015* (.009)
Judicial accountability	-.004*** (.001)	-.001 (.001)	.001* (.001)	.003*** (.001)	.000 (.002)	-.001*** (.001)	.000 (.000)	.001* (.001)	.002*** (.001)	-.002 (.002)
Political corruption	.003 (.002)	.006** (.002)	.007*** (.003)	.008*** (.003)	-.026*** (.009)	.008*** (.002)	.009*** (.002)	.009*** (.002)	.006** (.002)	-.032** (.008)
Log time since change	-.003*** (.001)	.001 (.001)	.002** (.001)	.002* (.001)	-.002 (.003)	.001 (.001)	.002*** (.001)	.002** (.001)	.000 (.001)	-.005* (.003)
Accountability * large change	.001 (.001)	-.000 (.001)	-.001 (.001)	-.001 (.001)	.001 (.003)	-.001*** (.000)	-.002*** (.001)	-.002*** (.001)	-.001 (.001)	.007** (.003)
Corruption * large change	.002 (.003)	-.001 (.003)	-.002 (.003)	.000 (.003)	.001 (.010)	.002*** (.001)	-.003 (.003)	-.002 (.003)	.001 (.003)	.005 (.009)
Accountability * time	.001*** (.000)	.000 (.000)	-.000* (.000)	-.001*** (.000)	-.000 (.001)	-.000** (.000)	-.001*** (.000)	-.001*** (.000)	-.001*** (.000)	.004*** (.001)
Corruption * time	.001 (.001)	-.001 (.001)	-.001 (.001)	-.001 (.001)	.001 (.003)	.002** (.001)	.000 (.001)	.001 (.001)	.002*** (.001)	-.005 (.003)
Observations	5043	5043	5043	5043	5043	5043	5043	5043	5043	5043
Countries	142	142	142	142	142	142	142	142	142	142
Within R squared	.085	.069	.069	.069	.070	.129	.115	.111	.132	.110
F statistic	5.91	4.70	4.71	4.69	4.80	9.42	8.22	7.91	9.66	7.84

\*\*\* (\*\*) [\*] denote significance at  $p < .01$  ( $p < .05$ ) [ $p < .10$ ].

**Table A1** Main results, consumption distribution

	All countries		Democratic subsample	
	1	2	3	4
	Gini	Theil	Gini	Theil
Log GDP	.118*** (.013)	.194*** (.025)	.109*** (.016)	.227*** (.029)
Log GDP squared	-.007*** (.001)	-.010*** (.001)	-.006*** (.001)	-.012*** (.002)
Log population	-.035*** (.004)	-.052*** (.008)	-.031*** (.005)	-.055*** (.008)
Trade share	.005* (.003)	.004 (.005)	.003 (.003)	.001 (.006)
Government size	.031*** (.006)	.049*** (.012)	.037*** (.008)	.048*** (.015)
Investment price	-.001 (.001)	.001 (.001)	.000 (.001)	.002 (.001)
Coup, success	-.011*** (.004)	-.027*** (.007)	-.008* (.005)	-.014 (.009)
Coup, failed	.003 (.003)	.004 (.006)	.005 (.003)	.006 (.006)
Single party regime	-.012*** (.004)	-.034*** (.007)	-	-
Electoral autocracy	-.015*** (.003)	-.042*** (.006)	-	-
Democracy	-.033*** (.004)	-.076*** (.007)	-.017*** (.002)	-.027*** (.004)
Bicameral system	-.000 (.002)	-.006** (.003)	.004** (.002)	-.003 (.004)
Proportional voting	.005** (.002)	.005 (.004)	.003 (.003)	-.005 (.006)
Judicial accountability	.014*** (.001)	.020*** (.002)	.009*** (.001)	.009*** (.003)
Political corruption	-.009* (.005)	-.049*** (.009)	-.034*** (.006)	-.091*** (.011)
Observations	6172	6172	5043	5043
Countries	145	145	142	142
Within R squared	.106	.105	.084	.049
F statistic	9.78	9.71	6.31	4.45
<i>With interactions</i>				

Judicial accountability	.005** (.002)	.006* (.003)	.005*** (.002)	.003 (.004)
Political corruption	-.000 (.006)	-.028** (.012)	-.021*** (.007)	-.068*** (.013)
Log time since change	-.005** (.002)	-.005 (.004)	-.001 (.002)	.001 (.005)
Accountability * time	.005*** (.001)	.007*** (.001)	.003*** (.001)	.003** (.001)
Corruption * time	-.006*** (.002)	-.014*** (.004)	-.008*** (.002)	-.014*** (.005)

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\*\*\* (\*\*) [\*] denote significance at  $p < .01$  ( $p < .05$ ) [ $p < .10$ ].

**Table A2** Regional jackknife tests

Variable	Judicial accountability	Political corruption	Judicial accountability	Political corruption
Time since change	Year 0	Year 0	Year 10	Year 10
Income shares				
Q1	.43 / .14	.86 / .86	.29 / .14	.86 / .86
Q2	.71 / .43	.57 / .29	0 / 0	.14 / .14
Q3	.86 / .86	0 / 0	0 / 0	0 / .14
Q4	.86 / .71	1 / .86	0 / 0	.29 / .71
Q5	.86 / .86	.14 / 0	0 / 0	0 / .14
Consumption shares				
Q1	.86 / .86	1 / .86	1 / 1	1 / 1
Q2	.86 / .86	.14 / .14	1 / 1	1 / .86
Q3	.71 / .71	0 / 0	1 / 1	1 / .71
Q4	.71 / .57	.71 / .71	.14 / .14	.71 / .71
Q5	.86 / .71	0 / 0	1 / 1	.86 / .86

Numbers are the share of tests in which the variable is significant at  $p < .05$  /  $p < .01$ .

**Table A3** Conditional results, democratic subsample, no interpolated data

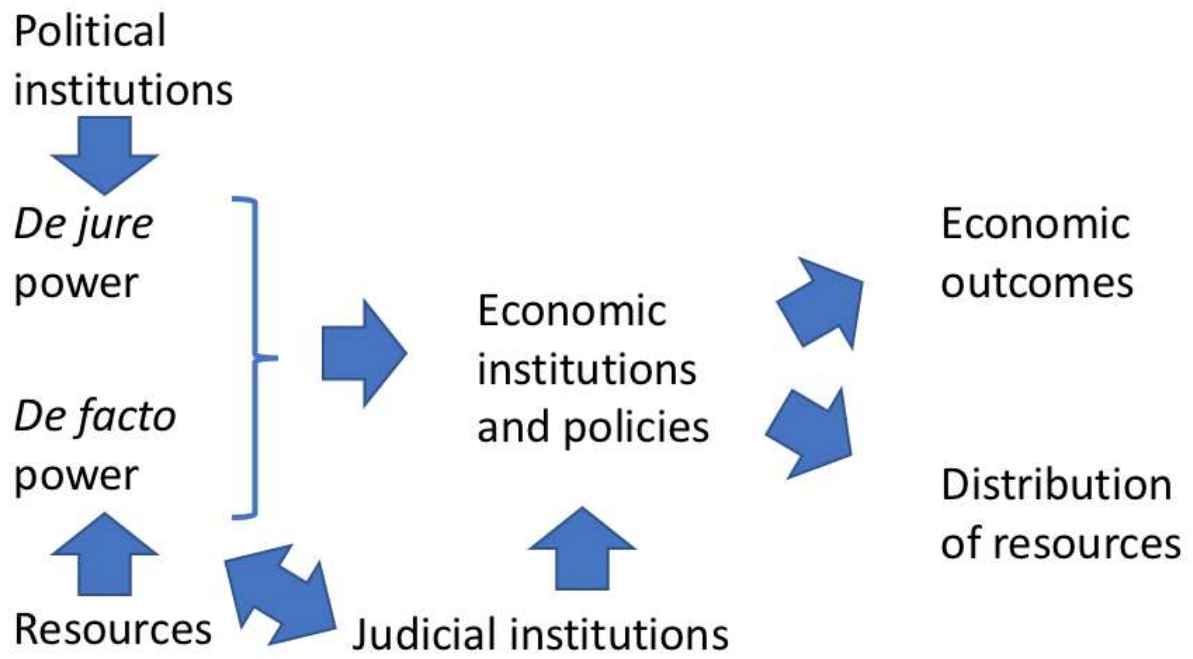
	Income distribution					Consumption distribution				
	Q 1	Q 2	Q 3	Q 4	Q 5	Q 1	Q 2	Q 3	Q 4	Q 5
Large institutional change	-.001 (.004)	.002 (.004)	-.001 (.004)	-.000 (.004)	.004 (.013)	.001 (.003)	.004 (.003)	.000 (.003)	.005 (.003)	-.013 (.011)
Judicial accountability	-.006*** (.001)	-.004*** (.001)	-.001 (.001)	.000 (.001)	.009** (.003)	-.001** (.001)	.000 (.001)	.001 (.001)	.002* (.001)	-.002 (.003)
Political corruption	-.005 (.004)	.006 (.004)	-.003 (.003)	.002 (.004)	.007 (.012)	.008*** (.003)	.011*** (.003)	.009*** (.003)	.011** (.003)	-.048*** (.009)
Log time since change	-.004*** (.001)	.002 (.001)	-.000 (.001)	.000 (.001)	.006 (.004)	.001 (.001)	.003*** (.001)	.002 (.001)	.001 (.001)	-.007** (.003)
Accountability * large change	.001 (.001)	-.001 (.001)	-.001 (.001)	-.001 (.001)	.00 (.004)	-.000 (.001)	-.002* (.001)	-.000 (.001)	-.001 (.001)	.004 (.003)
Corruption * large change	.001 (.004)	.000 (.004)	.005 (.004)	.004 (.004)	-.013 (.013)	.001 (.003)	-.003 (.003)	.000 (.003)	-.003 (.003)	.005 (.011)
Accountability * time	.001*** (.000)	.000 (.000)	-.000 (.000)	-.000 (.000)	-.001 (.001)	-.001** (.000)	-.001*** (.000)	-.001*** (.000)	-.001** (.000)	.004*** (.001)
Corruption * time	.001 (.001)	.002* (.001)	-.002 (.001)	.002 (.001)	-.009** (.004)	.002** (.001)	.000 (.001)	.001 (.001)	.001 (.001)	-.003 (.003)
Observations	3337	3347	3386	3393	3562	3768	3817	3748	3802	3781
Countries	134	134	137	135	139	141	140	140	140	140
Within R squared	.119	.116	.127	.131	.109	.128	.128	.138	.182	.132
F statistic	5.65	5.48	6.15	6.37	5.49	6.95	7.06	7.56	10.61	7.25

\*\*\* (\*\*) [\*] denote significance at  $p < .01$  ( $p < .05$ ) [ $p < .10$ ].

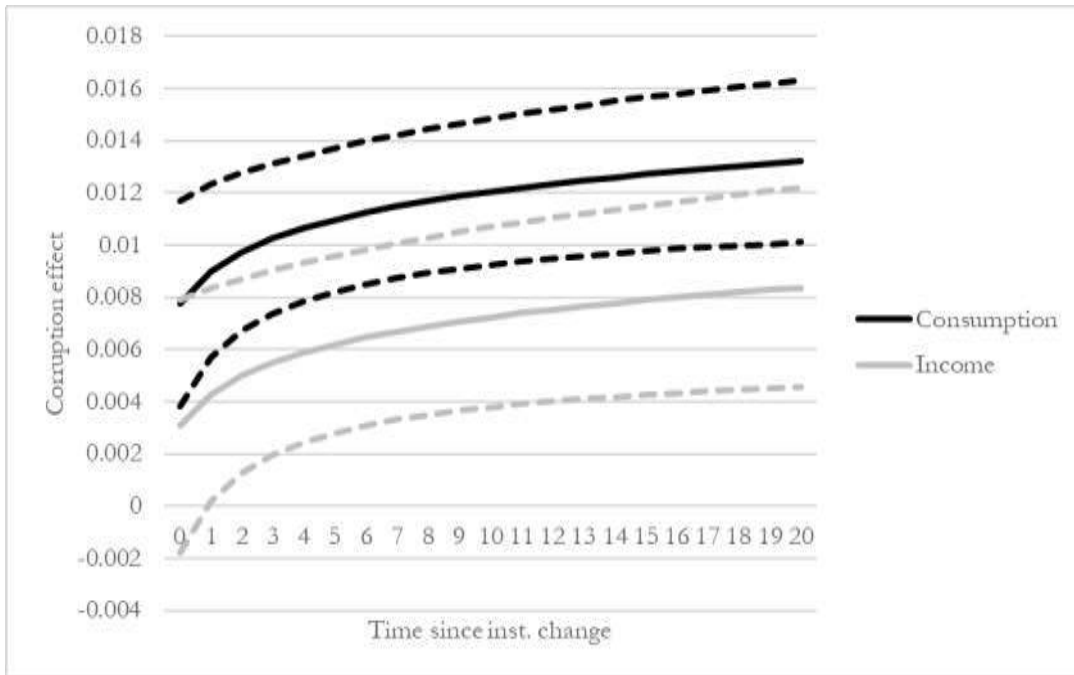
**Table A4** Results, consumption distribution, log absolute consumption levels

	Q 1	Q 2	Q 3	Q 4	Q 5
	Full baseline included				
Judicial	.000	.002	.002	.003	-.013
accountability	(.008)	(.007)	(.007)	(.007)	(.009)
Political corruption	.003	-.010	-.016	-.019	-.158***
	(.029)	(.026)	(.025)	(.025)	(.036)
Log time since	-.002	-.003	-.004	-.004	-.025**
change	(.011)	(.009)	(.009)	(.009)	(.013)
Accountability * time	-.002	-.002	-.001	-.001	.012***
	(.003)	(.003)	(.003)	(.003)	(.004)
Corruption * time	.014	.014	.015*	.016*	.014
	(.011)	(.009)	(.009)	(.009)	(.013)
Observations	4952	4952	4952	4952	4952
Countries	142	142	142	142	142
Within R squared	.937	.945	.945	.945	.894
F statistic	947.82	1098.77	1099.31	1088.26	537.52
<i>Effect after five years</i>					
Judicial	-.004	-.002	-.000	.000	.008
accountability	(.005)	(.004)	(.004)	(.004)	(.006)
Political corruption	.028	.002	.011	.009	-.132***
	(.021)	(.002)	(.018)	(.017)	(.025)

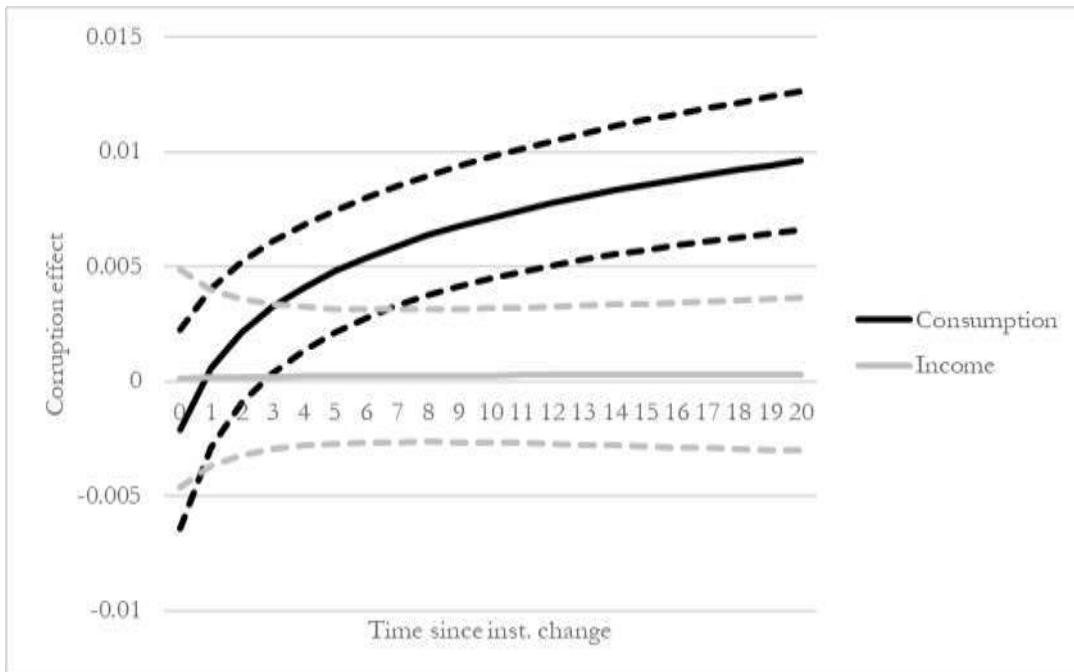
The baseline specification is similar to that used throughout the paper with the exception that we do not estimate Kuznets Curves. The log GDP and log GDP squared terms are replaced by the lagged dependence variable (log absolute quintile consumption). \*\*\* (\*\*) [\*] denote significance at  $p < .01$  ( $p < .05$ ) [ $p < .10$ ].



**Fig. 1** A model of the political process and its economic effects

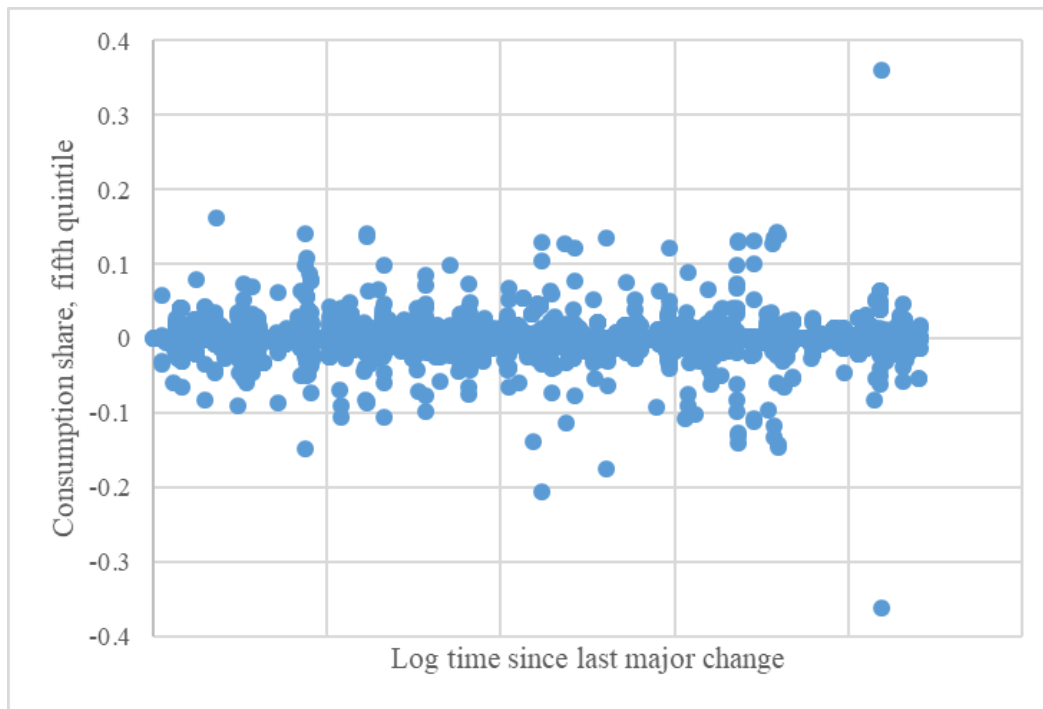


**Fig. 2** Marginal effects of corruption on inequality, bottom quintile of income versus consumption distribution



**Fig. 3** Marginal effects of judicial accountability on inequality, top quintile of income versus consumption distribution





**Fig. A1** Changes in top quintile consumption share versus changes in time since last institutional change