Constitutional Rules as Determinants of Social Infrastructure[*]

Theo S. Eicher
University of Washington

Cecilia García-Peñalosa
Aix-Marseille University, CNRS, EHESS, Centrale Marseille, AMSE

David J. Kuenzel[**]
Wesleyan University

May 17th, 2018

Abstract:

A sizable literature has established the positive impact of social infrastructure on economic development, but the determinants of social infrastructure itself have yet to be fully explored. Competing theories suggest a variety of political institutions as driving forces of social infrastructure, but the empirical literature has been hampered by the small set of available proxies, many of which are broadly defined. We leverage a new, comprehensive dataset that codes political institutions directly from countries' constitutions. By employing a statistical methodology that is designed to juxtapose candidate regressors associated with many competing theories, we test each individual political institution's effect on social infrastructure. Our results show that constitutional rules pertaining to executive constraints as well as to the structure of electoral systems are crucial for the development of high-quality social infrastructure. We also find that the determinants of social infrastructure are much more fundamental than previously thought: not only the general structure of electoral systems matter, but also highly detailed aspects such as limits on campaign contributions and the freedom to form parties. Moreover, the granularity of our data allows us to highlight the profound effect of basic human rights on social infrastructure, a dimension which has not been explored in the literature to date.

JEL Codes: O47, D72, E60, H00
Keywords: Constitutions, Institutions, Social Infrastructure, Bayesian Model Averaging

---

[**]Corresponding author: David J. Kuenzel, Department of Economics, Wesleyan University, 238 Church St, PAC 123, Middletown, CT 06459, E-mail: dkuenzel@wesleyan.edu, Tel: +1(860)685-3052.

1. Introduction

Following Knack and Keefer (1995) and Hall and Jones (1999), a vast literature has argued that factors of production in advanced countries are more productive due to better *social infrastructure*.[1] A social infrastructure index proposed by Hall and Jones (1999), which is based on Knack and Keefer's original work, has since become an iconic variable in the development accounting literature with well over 8000 citations. Given the strong explanatory power of the Hall and Jones social infrastructure index (accounting for 70% of cross-country GDP differences), an entire literature has sprung to untangle the precise determinants of social infrastructure itself. Political institutions, or "differences in institutions originating from different types of states" are thought to be fundamental drivers of social infrastructure (Acemoglu et al., 2001, p. 1378). In this paper, we examine the determinants of social infrastructure at an unprecedented level of detail by employing a new database that codes all dimensions of political institutions directly from constitutions.

Acemoglu et al. (2001) first suggested that constitutionally specified political constraints determine social infrastructure. Persson and Tabellini (2003) subsequently proposed that specific constitutional features, such as electoral rules or forms of government, affect social infrastructure. The emerging empirical literature encountered two obstacles as it sought to identify social infrastructure determinants. First, empirical results were often sensitive to the types of constitutional proxies employed. Second, many of these measures were indirectly and subjectively constructed to proxy for a range of political institutions. Hence, even if proxies were found to be significant, it was often difficult to disentangle the exact political institution that exerted an effect. To circumvent this issue, we rely on detailed codings of political institutions obtained directly from countries' constitutions.

Our data is based on 156 constitutional dimensions derived from the Comparative Constitutions Project (2014).[2] The dataset covers detailed provisions relating to elections, checks

---

[1] Hall and Jones (1999, p. 84) define *social infrastructure* as "institutions and government policies that determine the economic environment within which individuals accumulate skills, and firms accumulate capital and produce output." The concept of social infrastructure has also been introduced to political science, notably by Putnam et al. (1994) who noted that asymmetries in social infrastructures determine divergent development patterns. Note that in the economics literature, the terms 'social infrastructure' and 'economic institutions' are often used interchangeably.
[2] While this data source has not been widely used in the economics literature, political scientists have employed it to address questions such as whether *de jure* political institutions reflect *de facto* outcomes, or whether the traditional

and balances, the rule of law, and federalism. While different political theories suggest a multitude of political rules to affect social infrastructure,[3] empirical analyses to date have focused largely on broad electoral rules (proportional vs. majoritarian representation) and forms of government (parliamentary vs. presidential regimes). Our data allows us to examine whether social infrastructure is indeed determined by broad regime definitions or instead by detailed constitutional rules that relate to specific political institutions.[4] Our dataset also provides exhaustive information on individual and economic rights, which have received little attention as social infrastructure determinants to date, although Hayek (1976) and Sen (1999) highlighted the importance of human rights as determinants of political institutions and economic outcomes. Human rights may influence not only political participation and political preferences to shape social infrastructure, but they also could provide another layer of checks and balances.

Two key results emerge from our analysis. First, the explanatory power of broad proxies associated with electoral systems and forms of government is dominated by specific constitutional rules as determinants of social infrastructure. Many of these detailed constitutional rules are closely related to electoral systems and forms of government. In particular, the freedom to form parties is an essential driver of social infrastructure, while legislative representation quotas reduce social infrastructure. With regard to forms of government, we find checks and balances and executive selection to be crucial determinants of social infrastructure. Having one rather than two executives reduces social infrastructure, which is consistent with theories that argue constraints on the head of government are an important disciplining device. In the past, this effect has been captured by a broad "presidential regime" dummy variable, while our data allows us to identify more precisely which aspects of presidential regimes are relevant. Hence, while our results support the importance of electoral rules and checks and balances emphasized by the previous literature, we identify a set of more specific constitutional indicators through which these two mechanisms operate.

---

dichotomy between presidentialism and parliamentarism captures key features of constitutions. See, amongst others, Melton et al. (2013), Ginsburg and Simpser (2013), Cheibub et al. (2014), and Melton and Ginsburg (2014).

[3] See Section 2 below for a detailed discussion.

[4] Consider, for example, the two dichotomous forms of government that are the hallmark of the literature: presidential and parliamentary regimes. Parliamentary regimes are thought to be more accountable, resulting in less rent extraction (Persson et al., 1997, 2000). The new dataset allows us to go one step further and ask whether precise rules concerning various rent extraction mechanisms matter.

Second, our approach reveals an entirely novel set of social infrastructure determinants: constitutionally guaranteed human rights. In particular, equality before the law, the separation of church and state, and intellectual freedoms are all systematically linked with better social infrastructure. On the other hand, human rights that foster economic entitlements (e.g., a guaranteed living standard) are associated with weaker social infrastructure. These results point towards individual freedoms and responsibilities as two core elements of high-quality social infrastructure.

To juxtapose the sizable range of constitutional candidate regressors motivated by different competing theories, we employ a statistical methodology that is specifically designed to address model uncertainty: Bayesian Model Averaging (BMA). Model uncertainty emerges in our context as different theories suggest a multitude of distinct social infrastructure determinants, implying that traditional regression approaches inflate significance levels as the uncertainty surrounding the validity of any particular theory is ignored. BMA has been employed extensively in economics as well as in political science to address similar issues.[5] Raftery and Zheng (2003) outline that BMA maximizes predictive performance while minimizing the total error rate compared to any individual model.

We are not the first to examine the determinants of social infrastructure. The literature commenced with Mauro (1995) who identified the effects of corruption on economic growth. Knack and Keefer (1995) constructed the first "property rights index" that combined assessments of corruption, rule of law, bureaucratic quality, and expropriation risk. Combining this measure with information on countries' openness, Hall and Jones (1999) then created a comprehensive index of social infrastructure and examined its impact on development. Both the property rights and trade openness components of the social infrastructure index capture the security of contracts as well as the absence of corruption and diversionary policies. In the empirical analysis, we examine two proxies of social infrastructure: i) the original index as proposed by Hall and Jones (1999), SI-HJ, and ii) an index that excludes trade openness measures and purely focuses on government anti-diversion policies, SI-GADP. The second measure has become equally popular

---

[5] See, e.g., Montgomery and Nyhan (2010) and Montgomery et al. (2012) for applications in political science. For examples in the growth and development context, consider Fernandez et al. (2001), Eicher et al. (2007), Durlauf et al. (2008), Masanjala and Papageorgiou (2008), Tan (2010), Henderson et al. (2012), Durlauf et al. (2012), and Lenkoski et al. (2014). Other BMA studies in economics cover credit spreads (Faust et al., 2013), trade flows (Eicher et al., 2012), price indices (Moulton, 1991), education (Tobias and Li, 2004), inflation forecasts (Wright, 2008a,b), and environmental quality and pollution (Begun and Eicher, 2008). See Moral-Benito (2015) for a survey.

in the literature as trade policy could potentially distort the SI-HJ index. It turns out the two indices produce similar results.

The idea of political rules, anchored in constitutions, as determinants of social infrastructure was first empirically explored by Persson and Tabellini (2003) and Persson (2004). Acemoglu et al. (2005, p. 386) propose a formal hierarchy of institutions approach where *"economic institutions encouraging economic growth emerge when political institutions allocate power to groups with interests in broad-based property rights enforcement, when they create effective constraints on power-holders, and when there are relatively few rents to be captured by power-holders."* Following this notion, Persson and Tabellini regressed social infrastructure on constitutional proxies of democratic regimes (presidential vs. parliamentary), electoral rules, and an age of democracy variable. Other constitutional features, however, have received remarkably little attention to date, notably individual rights. Barro (1997) estimated a positive effect of a degree of democracy index on growth and found that the democracy proxy is also highly correlated with measures of civil liberties. While the civil liberties proxy is now popular in the literature, it is unclear through which exact channel it influences the quality of social infrastructure.[6] Our analysis provides one step forward in understanding the mechanism behind this correlation. We do not only examine the determinants of social infrastructure at a much more fundamental level but also consider whether previous aggregate proxies of political institutions remain relevant factors after controlling for detailed theory-based constitutional rules.

The remainder of the paper is organized as follows. Section 2 discusses existing explanations of the impact of constitutional rules on social infrastructure and provides a conceptual framework. Section 3 presents our empirical approach, and Section 4 discusses the data. Results are presented in Section 5, while Section 6 concludes.

2. Theories of Constitutional Rules and Social infrastructure

The economics and political science literatures provide a rich universe of theories that link constitutional rules to the quality of political institutions and social infrastructure. Persson and Tabellini (2003) identified electoral rules and forms of government as central determinants of

---

[6] Barro's civil liberties indicator is an aggregated index that combines proxies for free speech, the right to organize or demonstrate, freedom of religion, education, travel, and other personal rights, as specified by Gastil (1986–87).

social infrastructure. These two features of political institutions have received the most attention in the empirical literature to date, although we argue below that additional theories should be considered when we examine the determinants of social infrastructure.

2.1. Electoral Rules

Fundamental influences of electoral rules on social infrastructure are addressed by Besley et al. (2010) who stress the importance of voting rights on electoral competition and policy outcomes. Voting rights influence the openness of the electoral process, limits to political donations, and the freedom to form parties. The unfettered emergence of political *Parties*, which facilitate solutions to collective action problems, has been particularly associated with better development outcomes (Keefer, 2011, 2012, 2013, and Bernhard et al., 2015).

Aside from voting rights, there are two broad *Electoral Rules* linked to the quality of social infrastructure: *Accountability* and *Representativeness*.[7] Accountability allows voters to identify decision makers that are responsible for policy choices. The threat of being voted out of office is thought to discipline executives and legislators, resulting in decreased corruption and improved public policy. Provisions that increase the competitiveness of elections are associated with better accountability and policy outcomes (Ferejohn, 1986, Persson et al., 1997, Persson and Tabellini, 2000, and Besley et al., 2010). Accountability is also influenced by media rights, which enforce transparency (Besley and Prat, 2006, and Snyder Jr and Strömberg, 2010). Some accountability rules, however, may have ambiguous implications. Term limits, for example, can limit state capture implying a positive aspect of accountability, but the absence of re-election incentives under term limits may also induce officials to ignore minorities and increase corruption (Besley and Case, 1995, Maskin and Tirole, 2004, and Ferraz and Finan, 2011). Finally, elections following the plurality principle imply greater accountability as they facilitate the identification of those responsible for policy choices (Persson and Tabellini, 2003).

Representativeness, on the other hand, indicates whether policy choices focus on minorities or particular constituents instead of reflecting the preferences of large shares of voters. Greater representativeness is thought to generate policies that benefit the broad population, internalize externalities, and increase public goods provision. The previous literature suggests

---

[7] See, for example, Persson and Tabellini (2003, 2004), Cervellati et al. (2006), and Acemoglu and Robinson (2008).

representativeness is affected by majoritarian election formulas and proportional representation.[8] While proportional representation better reflects voters' preferences (Funk and Gathmann, 2013), it can also lead to higher taxation and public spending due to the necessity of legislative coalition formation (Iversen and Soskice, 2006). The size of a voting district's population is also thought to influence representativeness, as greater numbers of constituents per legislator increase the voters' abilities to monitor politicians (Atlas et al., 1997, and Thornton and Ulrich, 1999). Mandated legislative quotas are thought instead to reduce representativeness, since they tend to increase spending targeted at special interest groups and reduce expenditures in areas that internalize externalities, such as education (Pande, 2003).

2.2. Forms of Government

The second major aspect of constitutions that is thought to influence social infrastructure pertains to the form of government, specifically the distinction between parliamentary and presidential regimes. Presidential regimes are thought to exhibit more accountability as they concentrate executive powers in a single office that is directly responsible to voters. Presidential regimes also feature better separation of powers through checks and balances, which reduces politicians' incentives to collude at the expense of voters and should produce better public policy (Persson et al., 1997, 2000). Parliamentary democracies, on the other hand, are characterized by weaker accountability as policies cannot be directly linked to specific decision makers due to the parliamentary nature of negotiations and coalition formation (which imply greater rent extraction and higher taxes). However, the legislative cohesion fostered by majorities under the parliamentary system also provides advantages, since it produces general interest policies and less targeted spending on public goods. Hence, ex ante the effects of presidential vs. parliamentary systems on social infrastructure are ambiguous.

An alternative approach to linking forms of government to social infrastructure is to examine how governments' actions are shaped by constraints on decision making. Several theories suggest *Checks and Balances* affect the quality of social infrastructure through the interactions of different branches of government as well as through the interplay between citizens and government. The most prominent strand of this literature focuses on *Executive Constraints*. Constraining predatory actions of executives has been shown to create social capital

---

[8] Persson and Tabellini (2003) provide an overview. Persson et al. (2007) consider the effects of electoral formulas.

and improve social infrastructure (e.g., Knack and Keefer, 1997, and Acemoglu et al. 2001, 2002). Similarly, limits to the executive's decree powers and clear impeachment criteria/processes are also associated with better social infrastructure.

Executive constraints are also imposed by checks and balances on the legislative and judiciary branches (e.g. constraints on legislators' actions and oversight of judges). La Porta et al. (2004) highlight the importance of judicial checks and balances through *Judicial Independence*. *Parliamentary Powers* also represent executive constraints as more independent legislatures provide better monitoring, yielding in turn more democratization and political stability (Barro, 1999, and Fish, 2006). In the same vein, *Bicameralism* can provide crucial checks on the legislature itself by separating the legislative process, limiting the powers of individual legislators and increasing the majority threshold (Buchanan and Tullock, 1962, and Levmore, 1992).

However, *Executive Constraints* can also have negative effects on social infrastructure. Highly constrained executives may be more susceptible to bribes and special interests as they seek compensation in the absence of political rents (Acemogul et al., 2013). This point highlights that successful political institutions must be inclusive and shield politicians from special interests. *Direct Democracy* through referenda is therefore generally seen as a virtue in the literature as such voting rights render politicians more accountable and lead to policies that match more closely citizens' preferences (Matsusaka, 1995, and Feld and Savioz, 1997). A final dimension of *Checks and Balances* is the *Delegation* of competencies to international organizations and laws. The delegation of responsibilities to supranational bodies is thought to increase the separation of powers and to remove incentives of policy makers to act irresponsibly (Henisz, 2000, and Voigt and Salzberger, 2002).

Finally, forms of government also include the balance of national and regional decision-making. The literature emphasizes that the more equal distribution of powers within countries through federal structures provides better protections of rights and representation (Persson and Tabellini, 1996). *Federalism* is expected to lead to economic benefits due to competition between constituent governments, in particular when federal systems are self-enforcing (Weingast, 1995, and Qian and Weingast, 1997). But sharing power can also be costly as it requires cooperation, leading Persson and Tabellini (2003) to suggest that federalism may result

in less accountability and more corruption. These points imply an ambiguous relationship between the quality of social infrastructure and constitutional rules that strengthen federalism.

2.3. Rules and Rights

Aside from electoral rules and forms of government, there is a long-standing tradition in the literature to link basic legal rules and human rights to social infrastructure. Weingast (1997) emphasizes the importance of the *Rule of Law* in solving coordination problems between citizens. Moreover, successful sovereigns might need to establish fundamental political and economic rights to preserve citizen support and in turn the constitution. Barro (2000) confirms a direct empirical relationship between the rule of law and economic performance. In a similar vein, economists have emphasized *Property Rights* as a fundamental requirement of high-quality social infrastructure and a well-functioning economy (Posner 1995, 1998). Such rights provide for the efficient allocation of resources and assist in solving collective action problems (see, for example, Olson, 1965, Ostrom, 2003, and Campbell and Lindberg, 1990).

At the same time, economists have not associated *Human Rights* with social infrastructure to date. Civil liberties are assumed to be the outcome of political institutions and not the result of constitutional rules. But individual rights, such as freedom of speech, access to education, and equality before the law, can indeed shape political institutions to determine social infrastructure through political competition and participation. While individual rights are directly anchored in many constitutions, they have been largely ignored by the empirical literature even in light of the fact that Hayek (1976) and Sen (1999) associated them with economic outcomes. We follow Hayek (1976) and distinguish in the analysis below between *Positive* and *Negative Human Rights*. Negative human rights prohibit interference of the state or third parties with individual freedoms (e.g., academic freedom) while positive human rights guarantee individual entitlements (e.g., a minimum living standard).[9] Rights that insure individual freedoms are thought to improve social infrastructure while entitlements have detrimental effects since they reduce incentives.

2.4. Taking Theories to the Data

---

[9] See Blume and Voigt (2007) for a summary of different views on human rights and their effect on development.

Our discussion of existing theories identified five broad categories of constitutional variables that should affect social infrastructure: *Electoral Rules*, *Checks and Balances*, *Federalism*, the *Rule of Law* and *Human Rights.* Electoral rules form the core mechanism through which actions of policy-makers are shaped. Forms of government constitute a second layer that includes constraints on the executive, legislature and judiciary through checks and balances as well as federal structures. Citizens' rights provide the ultimate layer of control. The capacity of individuals to act collectively is determined by the rule of law and constitutionally guaranteed human rights. Below we consider the actual written constitutional rules that relate to these five broad categories to examine their empirical link to social infrastructure.

3. Empirical Methodology: Juxtaposing Theories and Their Candidate Regressors

Our dataset on constitutional dimensions contains dozens of variables motivated by diverse theories. We employ iterative Bayesian Model Averaging (BMA) to disentangle the impact of this vast collection of constitutional candidate regressors and to account for the associated model uncertainty. This section lays out the BMA methodology and discusses its particular usefulness in the context of our research question.

The juxtaposition of diverse constitutional theories and variables to elicit their predicted impact on social infrastructure poses an empirical challenge. When competing theories motivate a multitude of alternative regressors, researchers encounter model uncertainty which inflates confidence intervals (Raftery, 1995). BMA is designed to address the model uncertainty surrounding theories and candidate regressors. The methodology reports the probability that a particular regressor associated with a particular theory exerts an effect on the variable of interest. In the presence of model uncertainty, the use of BMA is preferable to single-equation estimations since BMA minimizes the total error rate (sum of Type I and Type II error probabilities) and generates point estimates which have a lower mean-squared error than any single regression model (Raftery and Zheng, 2003). Thus, BMA results have a better predictive performance relative to single-equation approaches.

In the case of linear regression models, the BMA approach can be summarized as follows. Let Y be the dependent variable, the quality of social infrastructure in our case, and let $X_1, X_2, X_3,..., X_k$ be a set of candidate regressors that determine social infrastructure. In our

empirical approach, these regressors are constitutional rules and the potential determinants of social infrastructure that have been previously suggested by Hall and Jones (1999), Acemoglu et al. (2001) and Persson and Tabellini (2003). Consider a subset $X_1, ..., X_p$ of the regressor space $X_1, X_2, X_3, ..., X_k$, and let a candidate model be

$$Y = \alpha + \sum_{j=1}^{p} \beta_j X_j + \varepsilon ,\qquad (1)$$

where $\beta_1, \beta_2, ..., \beta_p$ are the coefficients to be estimated, α is a constant and ε is the error term. BMA proceeds in two steps. Given a dataset D, BMA first estimates a posterior distribution $P(\beta_r | D, M_m)$ for every candidate regressor r in every model M_m that includes the coefficient β_r as well as each model's posterior probability, $P(M_m | D)$. The second step consists of combining all posterior distributions from the $\overline{m}$ models which include regressor r into the averaged posterior distribution, $P(\beta_r | D)$, using as weights each model's posterior probability:

$$P(\beta_r | D) = \sum_{m=1}^{\overline{m}} P(\beta_r | D, M_m) P(M_m | D) .\qquad (2)$$

The posterior probability of model M_m describes its likelihood to be the true empirical model, which is formally defined as the ratio of the marginal likelihood (denoted l) of model M_m to the sum of the marginal likelihoods over all possible models:

$$P(M_m | D) \equiv l(D | M_m) \Big/ \sum_{n=1}^{2^k} l(D | M_n) .\qquad (3)$$

Note that the marginal likelihood, $l(D | M_m)$, is a function of priors. We follow Raftery (1995) and impose the diffuse Unit Information Prior (UIP) that can be derived from frequentist principles (Kass and Wasserman, 1995). The UIP is seen as a conservative prior that is sufficiently spread out over the relevant parameter values and reasonably flat over the area where the likelihood is substantial. The posterior model probabilities are then used in turn as weights to compute the posterior mean and variance for each parameter:

$$\hat{\beta}_r^{BMA} \equiv E[\beta_r | D] = \sum_{m=1}^{\overline{m}} \hat{\beta}_{r,m} P(M_m | D)\qquad (4)$$

$$\hat{\sigma}_r^{BMA} \equiv Var\left[\beta_r \middle| D\right] = \sum_{m=1}^{\bar{m}} \left(Var\left[\hat{\beta}_{r,m} \middle| D, M_m\right] + \hat{\beta}_{r,m}^2\right) P(M_m \middle| D) - \left(\hat{\beta}_r^{BMA}\right)^2. \tag{5}$$

The posterior inclusion probability for each regressor, which measures the importance of a variable, can then be obtained by summing the posterior model probabilities over all models that include regressor r:

$$P(\beta_r \neq 0 \middle| D) = \sum_{m=1}^{\bar{m}} P(M_m \middle| D). \tag{6}$$

The posterior inclusion probability indicates the likelihood that a regressor has an effect on the dependent variable. Effect thresholds for the inclusion of a particular regressor have been established by Jeffreys (1961) and Kass and Raftery (1995). A posterior probability of less than 50% is seen as *evidence against* an effect; > 50% indicates that there is an effect, which in turn can be either *weak*, *positive*, *strong*, or *decisive* when lying within the following thresholds: 50–75%, 75–95%, 95–99%, and >99%, respectively. In what follows, we will refer to a regressor as being 'effective' if the posterior probability exceeds 50%. Given the size of the model space in our application, with over 150 candidate regressors, we apply the BMA algorithm iteratively (see Yeung et al., 2005, for details) on smaller sets of regressors. The procedure iterates until all variables with less than a 0.1 percent inclusion probability are eliminated from the model space and all regressors have been considered.

4. The Data

4.1 Social Infrastructure

Hall and Jones (1999) proposed a measure of social infrastructure that captures several appealing features for economists. Their index is an average of 'Government Anti-Diversion Policy' (GADP) measures and the Sachs and Warner (1995) index of trade openness. GADP combines International Country Risk Guide expert assessments regarding law and order, bureaucratic quality, corruption, risk of expropriation, and government repudiation of contracts; higher values of GADP imply more efficient markets. The Sachs-Warner index includes average tariff rates, non-tariff barriers, black market exchange rates, and the presence of export marketing boards. Hall and Jones include trade openness in their social infrastructure index since it is interpreted as

a constraint on the government's capacity to interfere with market outcomes. Restricted trade also provides more opportunities for rent seeking and corruption.

The ubiquitous Hall and Jones social infrastructure index (SI-HJ from now on) has proven to be profoundly successful at explaining cross-country differences in per capita output, hence we choose it as our variable of interest. Persson and Tabellini (2003) and others focus on a subset of SI-HJ, which includes only the GADP index (SI-GADP from now on) but does not consider trade restrictions and related rent aspects (see, e.g., Rodrik et al., 2004, and Acemoglu et al., 2001, 2002). It will be informative to compare results for SI-HJ and SI-GADP below.[10]

Previous analysis of the determinants of SI-HJ and SI-GADP suggest Western European influence as a crucial factor. Commonly, this factor is crudely proxied with two language variables: today's fractions of a country's population speaking either Western European languages or English as a mother tongue, EURFRAC and ENGFRAC, respectively. Hall and Jones (1999) also include the distance from the equator (LATITUDE) and Frankel and Romer's (1999) predicted trade shares (FRANKROM). LATITUDE pays homage to Montesquieu's (1748) and Diamond's (1997) environmental/geographic determinism where climatic resource conditions are thought to explain differences in policies and customs. FRANKROM proxies for diversionary policies, as the divergence between actual and predicted trade shares indicates the extent of distortive trade policies that generate political rents and breed corruption.

Persson and Tabellini (2003) consider five broad constitutional dimensions as determinants of social infrastructure. First, more mature democracies are thought to adopt systematically better policies as it takes time to build public goods such as pension systems. Older democracies may also exhibit more evolved checks and balances to fight corruption and abuse of power. Hence, they suggest that the age of a democracy (AGE) affects social infrastructure positively.[11] Second, they consider an indicator of federalism (FEDERAL), which is thought to induce a more equal treatment and improved economic outcomes across different regions (Persson and Tabellini, 1996). Third, they distinguish between majoritarian and proportional elections to highlight the trade-off between better accountability (less corruption)

---

[10] Alternative measures of social infrastructure have also been proposed, notably those based on the World Values Survey, which focuses on intangible social capital, such as trust (e.g., Knack and Keefer, 1997, Knack, 2002, and Balan and Knack, 2012).

[11] Rockey (2012) also uses the age of democracy variable, but focuses on its impact on the size of government.

and representativeness. When candidates with the highest vote shares win every seat at stake (rather than seats proportional to vote shares), politicians are thought to target small and geographically concentrated interest groups. Persson and Tabellini (1999) capture this effect with a majoritarian rule variable (MAJ), which takes the value one if the lower house is elected under plurality rule.[12]

The fourth indicator motivated by Persson and Tabellini (2003) proxies for presidential versus parliamentary regimes (PRES); it assumes the value one in the former case and zero otherwise. According to Persson and Tabellini's definition, a presidential regime has a directly elected head of government who is fully in charge of the executive, with the executive not being directly accountable to the legislature, and with a clear separation of powers between the president and the legislature. In a parliamentary regime, the executive is instead formed out of a legislative majority which also has the power to initiate legislation. Persson and Tabellini acknowledge that some constitutions cannot be easily assigned to one model or the other. For instance, they also define parliamentary regimes as those where the government is subject to a confidence requirement while in presidential systems this feature is absent.[13] In our constitution dataset, the variable NumberOfExec=1 ('One executive is specified in the constitution.'), which exhibits a correlation with PRES of 0.71, captures most closely the fact that the head of government is not selected by the legislature. Finally, Persson (2004) suggests as fifth determinant of social infrastructure a measure of the degree of democracy in non-presidential regimes (PARL_DEMOC), which is the interaction of (1-PRES) and a country's democracy score from the Polity IV project.[14]

At this stage, it is helpful to discuss causality in social infrastructure regressions. We share the focus and approach of Hall and Jones (1999) and Persson and Tabellini (2003) who emphasize that their quest for the identification of determinants of social infrastructure is concerned with long-term effects. Their argument assumes that variables in these regressions

---

[12] Hence, the variable is not necessarily capturing a constitutional rule, but rather a de facto implementation.

[13] As this dichotomy is still not clear-cut in many semi-presidential countries, Persson and Tabellini also classify a regime as presidential if the control over the appointment of the executive *primarily* rests with the president and not the legislative assembly. See Duverger (1980), Strom (1990) and Shugart and Carey (1992) for a further discussion of presidential versus parliamentary regimes. The former introduces the concept of semi-presidential regimes, while the latter two highlight important differences in the relative powers of the executive and the legislature.

[14] Following the literature, we also include regional dummies (AFRICA, LAAM, ASIAE) and colonial controls (COL_UKA, COL_ESPA, COL_OTHA) in all specifications. See Table 1 for definitions and summary statistics.

change very slowly. There is no notion that changes in one year immediately translate into variations of the dependent variable. Hence, the regressors in this literature do not necessarily predate the social infrastructure index, which contains information from 1950 to 1995. Variables such as 'type of democracy' or 'fraction of the population speaking English' are often included without temporal concerns, since they are seen as proxies of deep and long-lasting foundations of social infrastructure. A related issue that deserves consideration is endogeneity. For instance, better social infrastructure might have attracted migrants which in turn affects today's measure of ENGFRAC. Here we follow the unanimous approach in the literature and assume that the determinants suggested by Hall and Jones (1999), Acemoglu et al. (2001, 2002) and Persson and Tabellini (2003) as well as our constitutional variables are exogenous with respect to social infrastructure.[15]

Lastly, our dataset on actual dimensions of written constitutions shares with the previous literature that it is difficult to differentiate between *de jure* and *de facto* rules. Some constitutional features simply may not have an effect because they are not implemented. While this distinction is certainly important (see for example Lindberg et al., 2017), there is currently no dataset available that covers *de facto* constitutional rules at a similar breadth. Hence, we are limited to testing the impact of *de jure* constitutional features on social infrastructure. Nevertheless, we consider the age of a democracy as a proxy for the extent of constitutional enforcement. Mittal and Weingast (2011) discuss the fact that constitutional rules are not necessarily self-enforcing, and maintain that enforcement requires those rules to be a focal solution to citizen coordination problems. If societies take time to adopt rules and start conforming to them, constitutions in 'older' democracies are more likely to be focal, increasing in turn enforcement and thus delivering better social infrastructure outcomes.

4.2 Primary Constitutions Data

Our data on primary constitutional rules is based on the Comparative Constitutions Project (CCP, 2014), which provides extremely detailed information on all countries' most recent constitutions. The CCP data is unique in its breadth of constitutional features and in the detail with which each constitutional rule is coded. For example, an important element of executive constraints is the

---

[15] Other influential papers that follow a similar notion include Dollar and Kraay (2003), Easterly and Levine (2003), La Porta et al. (2004, 2008), and Rodrik et al. (2004).

ability to call states of emergency to suspend (parts of) the constitution. The CCP data not only reports which specific person/chamber has the power to call a state of emergency but also under which exact circumstances this power can be used. For our analysis, we convert all constitutional rules in the CCP data into dichotomous variables.[16] After excluding/recoding variables that are extraneous or ambiguous to the analysis, we are left with a dataset of 156 constitutional rules. Details on all variables and our coding procedures are provided in the Appendix.

However, the unrestricted dataset of 156 constitutional rules contains variables that may not be immediately linked to the theories we discussed above. Hence, we also construct a second, restricted dataset, which only includes variables that can be directly linked to the theories in Section 2.[17] After combining a number of variables in the unrestricted dataset to create unambiguous measures that can be associated with the outlined theories, the theory-based restricted dataset contains 109 constitutional rules.[18] Table 1 provides detailed definitions and summary statistics of all variables in the restricted dataset, organized by the five broad dimensions identified in Section 2: *Electoral Rules*, *Checks and Balances*, *Federalism*, the *Rule of Law*, and *Human Rights*. The *Electoral Rules* dimension includes 24 variables that characterize electoral processes based on the theoretical linkages pertaining to *Accountability* (11 variables), *Representativeness* (11 variables) and *Parties* (2 variables). The dataset allows us to determine the social infrastructure effects of key variables shaping electoral processes ranging from party formation restrictions over campaign financing rules to seat quotas for minorities. In

---

[16] For example, for the question "Does the constitution provide for an electoral commission or electoral court to oversee the election process?", CCP (2014) lists four possible replies: 1. electoral commission, 2. electoral court, 3. both, or 4. neither. Hence, we create one variable (OVERSGHT_123) that takes the value one if there is electoral oversight in the form of 1., 2. or 3., and zero otherwise.

[17] Consider some examples of our selection criteria. The dataset includes a large number of variables that can be interpreted as executive constraints. Executive actions can be limited by the legislature depending on two factors: (i) the legislature's actual ability to block executive actions, and (ii) the extent to which legislators are willing to take on executive policies. The variable OVERRIDE ('Can vetoes of legislation be overridden?'), for instance, indicates veto powers of the executive, and hence is a measure of the first effect. IndivLegislatorsCanBeRemoved ('Are there provisions for removing individual legislators?'), on the other hand, captures to what extent legislators are protected and hence willing to act against the executive. In contrast, other rules relating to the form of government, such as DEPEXEC ('Does the constitution specify a deputy executive of any kind?'), capture aspects that have no obvious significance for social infrastructure. We therefore remove this variable from our restricted dataset. Similarly, we retain provisions for membership in international organizations as they are likely to affect trade policy and result in a delegation of power that is likely to lead to more efficient choices, which positively affect the trade component of social infrastructure. Provisions outlining the mere existence of a central bank, on the other hand, have no clear counterpart in any of the theories outlined above, which is why we remove this variable from the restricted dataset.

[18] For example, the possibility to propose referenda is of little use if the referenda cannot result in legislation. We therefore combine the measure specifying the possibility to propose referenda (REFEREN) with the rule that indicates whether individuals can propose legislative measures (INITIAT) into the new variable 'Referenda'.

line with the theory, we expect that variables other than term limits which increase accountability (e.g., competitive elections, donation limits, and freedom of the media) result in better social infrastructure, while constitutional rules related to representativeness have an ambiguous effect.

There are 38 constitutional rules relating to the *Checks and Balances* dimension. We have two dominant groups of variables: 16 measures are concerned with *Executive Constraints,* which pertain to the executive selection process, executive powers (and limits thereof) and executive dismissal mechanisms, and 14 variables on *Parliamentary Powers*. To these we add measures of *Bicameralism* (1 variable), *Delegation* to national or supranational laws and institutions (3 variables), *Judicial Independence* (3 variables), and 1 measure of *Direct Democracy* ('Referenda'). Among other things, these variables account for the number of executives specified in the constitution, measure whether the legislature can investigate the executive, and cover procedures to remove individual legislators or to amend the constitution. The theory suggests that constitutional rules which strengthen the powers of the legislature and judicial branch toward the executive should be most effective in improving social infrastructure.

An entirely new set of possible determinants of social infrastructure is contained in our third constitutional dimension which covers *Human Rights*. The 40 different variables in this category include 9 measures on the existence and protection of *Property Rights*, 10 pertaining to *Positive Rights* or entitlements (for example, the right to state-provided healthcare), and 21 describing *Negative Rights*, such as free speech or equality before the law. In line with the theory, we expect *Property Rights* and *Negative Human Rights* to lead to better social infrastructure, while *Positive Human Rights* should imply worse social infrastructure.

The dataset also captures the concept of *Federalism* by including 5 different rules covering this dimension. These variables gauge the decentralization of power at a more disaggregate level than the aggregate Persson and Tabellini proxy as federalism in our dataset is defined both in terms of geographical units and with respect to autonomous and ethnic groups. As discussed in Section 2, federal structures can have positive effects by inducing competition between constituent governments but can also be costly in terms of coordination. Finally, the *Rule of Law* dimension is captured in the dataset by 2 variables that reflect the existence of a constitutional court and the formulation of a general statement regarding the rule of law. These variables capture the idea that all members of a society are subject to the same laws, including

those in charge of writing and applying them, which should have a positive effect on social infrastructure.

Our dataset includes information on 69 countries (see Table A.3 for a complete list), which constitutes the intersection of the Hall and Jones (1999), Persson and Tabellini (2003) and CCP datasets. While the number of observations differs slightly from Persson and Tabellini and substantially from Hall and Jones, our dataset replicates the signs and coefficient magnitudes of the baseline specifications in the original papers (see Table A.2).

5. Results

5.1 Determinants of Social Infrastructure

Table 2 presents our findings in two stages. In panel 1, we report results for the unrestricted panel with 156 candidate regressors and the SI-HJ measure as dependent variable while panel 2 focuses on the theory-based, restricted dataset of 109 regressors. Then, in panels 3 and 4, we report the corresponding estimates when considering instead the SI-GADP measure. Note that all specifications include (i) colonial and continental origin dummies, as well as the social infrastructure determinants suggested by (ii) Hall and Jones (1999): EURFRAC, ENGFRAC, LATITUDE, FRANKROM, and (iii) Persson and Tabellini (2003): PRES, MAJ, AGE, FEDERAL, PARL_DEMOC. To minimize clutter, we report only variables that surpass the 50% effect threshold (complete results including all ineffective variables are available on request).[19]

The unrestricted dataset for SI-HJ yields 25 effective determinants in panel 1 of Table 2, 19 of which appear also in the restricted results in panel 2. First we note that 8 out of 9 previously suggested determinants of social infrastructure (EURFRAC, ENGFRAC, LATITUDE, FRANKROM, PRES, MAJ, AGE, FEDERAL, PARL_DEMOC) do not survive the introduction of specific constitutional rules in either the restricted or unrestricted SI-HJ specifications. Only the AGE of a democracy remains effective once we control for detailed constitutional dimensions of political institutions. This result indicates that broad measures for European influence such as language, proxies for types of democracy in the form of MAJ, PRES and PARL_DEMOC, or hand-coded indices for federal structures are less precise in determining

---

[19] Our focus in this section is mostly on the statistical effectiveness of variables and the direction of their effects. We discuss the economic significance of the results in detail below in Section 5.2.

social infrastructure than more specific rules directly coded from constitutions. It also shows the power of clearly linked variables in determining social infrastructure instead of vaguely motivated proxies, such as LATITUDE reflecting Montesquieu's geographic determinism or assertions that European languages spoken today are good measures of European influence. The finding that fine-grained constitutional rules add more explanatory power to social infrastructure regressions is further supported by the fact that the (un)restricted models in panels 1 and 2 fit the social infrastructure data remarkably well. The adjusted R-squared exceeds 0.9 in both cases compared to a fit of 0.3 to 0.6 that is standard in the prior literature (see Table A.2).

As the results in panels 1 and 2 overlap closely, we focus our discussion below on the theory-based specification in panel 2. In fact, when comparing the unrestricted set of constitutional rules in panel 1 to the theory-based dataset in panel 2, only one variable that was eliminated on theoretical grounds has an effective impact in the unrestricted sample, LegChamber1IsElected.[20] The remaining differences between the results in panels 1 and 2 can be attributed to substitution effects within clusters of constitutional rules, notably *Checks and Balances* and *Human Rights*. For example, a variable that measures whether the head of state can dismiss the legislature (HOSCanDismissLegislature) is not effective in the unrestricted specification but the rule that captures whether the legislature can investigate the executive (LegCannotInvestigateExecutive) is. Both of them cover similar aspects of parliamentary powers. Overall, the similarity in results across panels 1 and 2 indicates that the key constitution provisions are those motivated by theory.

Five *Electoral Rules* are associated with social infrastructure in panel 2. The negative effect of constraints on party formation (PartiesCanBeProhibited) offers support for theories that emphasize the importance of parties to solve collective action problems. At the same time, in line with electoral accountability theories highlighted in Section 2, campaign contribution limits (LimitsOnCampaignDonations) raise social infrastructure. Three effective variables pertain to theories of representativeness. Social infrastructure is lower in the presence of legislative quotas that limit representativeness (MinorityQuotaInLegislature), while a positive effect is exerted by rules that require larger majority thresholds to pass laws (NewLawsRequireSuperMajority),

---

[20] The variable takes the value one if the constitution specifies the electoral system for the first legislative chamber. We had to rule out this variable on theoretical grounds, however, as the CCP data did not include information on what specific kind of electoral system is actually described.

implying greater representativeness. Social infrastructure is also reduced when the head of state succession is not clarified in the constitution, indicating less representativeness due to the potential emergence of a power vacuum leaving room for dictators to assume power. Notably absent are variables that indicate whether a country is a federation or a republic. The only effective regressor associated with *Federalism* is the presence of federal autonomous regions (FederalAutonomousIndigenous). With its negative effect, the variable speaks to the costs in terms of social infrastructure of embedding ethnic and regional fragmentation in the constitution.

Checks and Balances also feature prominently as social infrastructure determinants with seven theory-motivated regressors in this category proving to be effective. In line with the theory, greater parliamentary powers as indicated by the head of state's inability to dismiss the legislature (HOSCanDismissLegilature) improve social infrastructure. The same holds for the delegation of certain policies to supranational organizations (LegalProvisionsForIntOrgs) which, as predicted by theory, exerts a positive impact on social infrastructure. At the same time, we find no evidence that the absence of bicameralism (Housenum=1) leads to worse social infrastructure outcomes. Executive constraints represent the largest number of candidate regressors in the *Checks and Balances* category that exert an effect. In line with the theory, social infrastructure outcomes are worse in case of excessive executive power as indicated by the presence of a single executive (NumberOfExec=1) who can remove individual legislators (IndivLegislatorsCanBeRemoved) and single-handedly declare a state of emergency (ExecCanDeclareStateEmergency). However, the results also indicate that it is important to provide policy makers with some flexibility to call states of emergency, as fairly general conditions (ReasonStateEmergency=General) have a positive impact on social infrastructure. Overall, these results add rich insights as to exactly which executive constraints support high-quality social infrastructure beyond the broad proxies used in the previous literature.

Human Rights, a dimension that has been mostly absent in the literature on social infrastructure, contributes the largest number of determinants with eight effective constitutional rules. In terms of property rights, only the absence of stringent bankruptcy laws when debtors cannot be detained (DebtorsCannotBeDetained) has a negative impact on social infrastructure. In contrast, the negative human rights category features five effective determinants. Greater constitutional protections of individual freedoms improve social infrastructure: academic freedom (AcademicFreedom), trials in the accused's language (TrialsInAccusedLanguage),

guarantee of non-discrimination (EqualRights&NonDiscrimination), and separation of church and state (SeparationChurch&State). At the same time, public trials (TrialsArePublic) are not a positive influence on social infrastructure, which is in line with Ulmer's (2012) hypothesis that sentencing in such cases is dependent on the social context and public trials could result in poorer protections of the accused's rights. Notable is also that human rights can contribute negatively to social infrastructure. Entitlements in the form of a constitutionally guaranteed living standard (AdequateLivingStandardProvision) reduce incentives. Making rights provisions binding for both the state and private parties (AllRightsBinding) also has a negative impact, perhaps because it disincentivizes governments from protecting human rights in the first place due to the potential costs for businesses and individuals.

Panel 4 in Table 2 considers results for the SI-GADP determinants, focusing on the restricted, theory-based dataset. SI-GADP featured prominently in Persson and Tabellini (2003) and excludes Hall and Jones' (1999) trade openness indicator. Hence, SI-HJ and SI-GADP measure slightly different phenomena. By including trade policy as an additional rent-seeking indicator, SI-HJ seems to be capturing a broader notion of 'governance' than the pure government anti-diversion measure.

While the social infrastructure indices differ in their composition, we identify a similar structure among the SI-GADP determinants in panel 4: one effective variable each measuring parties and accountability, three pertaining to representativeness, one to federalism rules, eleven capturing checks and balances, and six human rights measures. Hence, the data indicates that the various categories we discussed earlier are important determinants for both social infrastructure measures. Six determinants appear in both panels 2 and 4 and therefore constitute core determinants of SI-HJ and SI-GADP. These constitutional rules include prohibiting parties (PartiesCanBeProhibited), a guaranteed living standard (AdequateLivingStandardProvision), provisions for international organizations (LegalProvisionsForIntOrgs), academic freedom (AcademicFreedom), and the separation of church and state (SeparationChruch&State).

Beyond these core variables, the SI-GADP determinants include again *Electoral Rules*, showing that limiting competition has detrimental effects on social infrastructure, specifically: CensorshipProbitited, Chamber2MembersAreNotElected, and VotingRestriction=Incapacitated. Efficient executive replacement procedures (HOGReplace=NoAutomaticSelection) are once

more identified as important for high-quality social infrastructure. As before, *Checks and Balances* that constrain executive powers and strengthen the role of the legislature improve social infrastructure in panel 4: CounterCorruptionComission, ReasonStateEmergeny=War, ReasonStateEmergeny=Security, IndependentExecutive, ExecutiveSignsLegislation, and LegOrCabCanDeclareStateEmergeny. At the same time, empowering the executive during disasters (ReasonStateEmergeny=Disaster) improves SI-GADP outcomes, while the adoption of less efficient budget procedures (SpecialLegProcessForTaxBills) and international laws (LegPorvisionsForIntLaws) have negative effects.

Similar to our prior conclusions, the GADP component of social infrastructure witnesses the same effects of *Human Rights*. In line with a vast literature, property rights are important but so are individual rights. The absence of secure property rights (ReasonExpropriation=Redistribution) and rules establishing entitlements (Healthcare, AdequateLivingStandardProvision,) negatively affect SI-GADP.[21] Negative human rights that indicate personal freedoms retain the same positive effects we detected before: AcademicFreedom, SeparationChurch&State, and RightToSelfDetermination. However, while electoral rules, checks and balances, and human rights broadly matter in both panels 2 and 4, the specific variables within each category exhibit little overlap, in particular compared to the close similarities between the unrestricted and restricted specifications of SI-HJ. This divergence is not due to the empirical methodology since both model and parameter priors as well as the underlying data are identical in the two panels. Indeed it is the very difference in the social infrastructure indices themselves that drives the results. While both infrastructure measures are closely related with a correlation coefficient of 0.85, some countries score poorly on the SI-HJ index mostly because of low trade openness scores, and vice versa. In particular, the trade component could add noise by inflating the SI-HJ values for commodity exporters (e.g., Ecuador or Bolivia) and deflating the values for countries like New Zealand where the distance penalty artificially depresses trade.

Lastly, we observe that 15 of the 27 effective variables in the restricted SI-GADP specification in panel 4 also emerge when employing the unrestricted constitutional rules data in

---

[21] Economic theories of entitlements have been developed by Sen (1983), who focused on abject poverty and famine. We are unaware of entitlement theories being linked to social infrastructure which is what our data indicate.

panel 3. The remaining differences can be mostly attributed to seven variables that have a significant effect in panel 3 but are excluded on theoretical grounds in panel 4: AdminCourts, CentralBank, Chamber2MinAge=Below22, HOSElection=Majority, LegDeclaresWar, Opportunity, and ScientificProgress. Overall, there is again a substantial overlap across categories between both panels: one variable covering each *Parties* and *Accountability*, three rules pertaining to *Representativeness*, one to *Federalism*, five to *Executive Constraints*, and three to *Parliamentary Powers*. Panel 3 only shows more frequent support for variables in the *Human Rights* category and some of the *Checks and Balances* subcomponents, which can be again attributed, to some extent, to the theory-based exclusion of the above listed variables.

5.2 The Influence of Constitutional Rules

While the previous section focused on *which* constitutional rules affect social infrastructure, we now turn our attention to the magnitude of the influence for each effective regressor. The posterior means in Table 2 allow for a direct comparison of each regressor's impact, given that all variables (including AGE) range from zero to unity. Figures 1a and 1b rank the effective variables based on the magnitude of their respective posterior means in panels 2 and 4 of Table 2 to emphasize the size of their effects on social infrastructure (SI-HJ and SI-GADP, respectively).

In both Figures 1a and 1b, the AGE of democracy variable has the greatest individual impact on the quality of a country's social infrastructure, independent of whether trade policy is included or not in the dependent variables. For the SI-HJ specification in Figure 1a, the most important determinants (with posterior means greater than 0.1) include LimitsOnCampaignDonations, EqualRights&NonDiscrimination, TrialsInAccusedLanguage, and AcademicFreedom. For instance, countries that include LimitsOnCampaignDonations in their constitution can increase their social infrastructure index by more than one standard deviation, which is 0.25 in our sample of countries. In the SI-GADP specification in Figure 1b, AcademicFreedom has the greatest effect with an impact of 0.14, closely followed by the provision that allows for a state of emergency to be called in case of a national disaster (ReasonStateEmergency=Disaster) with 0.11 points.

Figures 1a and 1b also highlight that a number of constitutional rules exert detrimental effects on social infrastructure. That is, countries improve their social infrastructure not only by including but also by excluding specific constitutional rules. Our results indicate that 12

constitutional rules worsen the quality of social infrastructure in Figure 1a. The greatest negative effects are exercised by provisions that specify PartiesCanBeProhibited, autonomous subnational governments can exist (FederalAutonomousIndigenous), legislative quotas (MinorityQuotaInLegislature), and guaranteed minimum living standards (AdequateLivingStandardProvision). The inclusion of any of these rules is associated with substantially worse social infrastructure. Figure 1b shows similar results for SI-GADP, where 14 constitutional provisions exert a negative effect. Entitlements, such as AdequateLivingStandardProvision and Healthcare, have again the most detrimental effects.

Finally, we examine scatter plots of observed and predicted social infrastructure values based on the results in panels 2 and 4 of Table 2. We use the respective sum of posterior means of the effective regressors to create an index of constitutional quality for both SI-HJ and SI-GADP. These values are then normalized in either case by the "optimal constitution value" generated by the artificial country whose constitution contains all variables that exert a positive effect and none of the variables that exert a negative effect. The indices in Figures 2a and 2b for SI-HJ and SI-GADP show a close fit and highlight that both are indeed excellent predictors of social infrastructure across countries. Interestingly, the dispersion of the SI-HJ and SI-GADP constitutional quality indices differs somewhat, with the SI-HJ measure offering a somewhat better fit, although the R-squared measures in Table 2 show no substantial difference.

5.3 Robustness: Instrumenting for Constitutional Quality

As previously discussed, the macro development literature considers social infrastructure outcomes a function of constitutional rules. In this part, we consider the plausibility of this argument by examining social infrastructure (both SI-HJ and SI-GADP) regressions on the respective constitutional quality indices. To establish a causal effect, we rely on two distinct and well-established instrumental variable approaches from the literature, which allow us to link the exogenous variation in constitutional rule differences across countries to social infrastructure outcomes.[22]

Our first approach rests on the observation that in Table 2 three of the regressors suggested by Hall and Jones (1999) – ENGFRAC, EURFRAC and FRANKROM – are not

---

[22] A complete instrumental variable analysis with regard to all 109 constitutional rules that we consider above would be desirable but is statistically not feasible due to the large number of required instruments. In this part, we focus instead on the constitutional quality indices as next best implementable alternative.

effective determinants of social infrastructure after controlling for constitutional rules.[23] As constitutional quality is likely to be affected by geographic characteristics and/or European influence, these variables are natural candidates to serve as instruments. If the Hall and Jones variables only unfold their effect on social infrastructure through constitutional rules while not being driven by social infrastructure itself, then we can estimate the causal effect of constitutional quality on social infrastructure outcomes.

The first two columns in Table 3a report full sample regressions of the Hall and Jones social infrastructure measure (SI-HJ) on its respective constitutional quality index, the social infrastructure determinants suggested by Persson and Tabellini as well as the LATITUDE variable. The latter two sets of variables are included because we found a significant effect in all BMA runs for the AGE of democracy variable while PRES, MAJ and LATITUDE were effective determinants in the SI-GADP specification. All regressions also include the locational and colonial controls discussed above. In the OLS specification in column (1), the constitutional quality index has a positive and highly significant effect (at the 1 percent level) on SI-HJ. This result mirrors the positive relationship between both measures as shown in Figure 2a. In line with our earlier BMA results, the AGE of a democracy also has a positive and significant impact on social infrastructure outcomes. To examine whether the constitutional quality effect is indeed a causal one, we instrument the constitution index in specification (2) of Table 3a with three Hall and Jones (1999) variables: ENGFRAC, EURFRAC and FRANKROM.[24] After instrumenting, the coefficient of the constitutional quality index remains positive and significant at the 1 percent level. Moreover, the magnitude of the estimate is comparable to the OLS specification. The similarity of the OLS and IV results offers strong support for the notion that political institutions in the form of constitutional rules are exogenous with respect to social infrastructure.

Nevertheless, if the Hall and Jones (1999) instruments have an effect on social infrastructure independent of constitutional quality, the IV results in column (2) of Table 3a could still be biased. In order to examine the robustness of the above results, we therefore employ in our second approach the settler mortality instrument suggested by Acemoglu et al. (2001, 2002). While the exogeneity assumption might be more likely to hold in this case, the

---

[23] These instruments have also been employed in a number of papers since Hall and Jones (1999). See, e.g., Dollar and Kraay (2003), Rodrik et al. (2004), and Manca (2010).

[24] According to the Sargan statistic in Table 3, the validity of the instruments cannot be rejected at any conventional statistical significance level.

sample shrinks to 39 observations as the settler mortality data is only available for former European colonies. The social infrastructure regression results for this reduced sample are reported in the right panel in Table 3a. The OLS estimates in column (3) are nearly identical to the full sample in specification (1), with constitutional quality and the AGE of a democracy still being significant determinants of social infrastructure. Moving on to the IV results in column (4), the magnitude of all estimates remains again stable compared to the OLS case, and constitutional quality retains its significant effect (at the 1 percent level) on social infrastructure.[25]

Table 3b repeats the same exercise focusing on SI-GADP as dependent variable and using the SI-GADP version of the constitutional quality index based on panel 4 in Table 2. The OLS specification in column (1) of Table 3b shows again a highly significant impact (at the 1 percent level) of the constitutional quality index on SI-GADP. This result also prevails when instrumenting the constitution index in specification (2) of Table 3b with the Hall and Jones (1999) variables ENGFRAC, EURFRAC, and FRANKROM. When focusing on the settler mortality sample in columns (3) and (4) in Table 3b, the constitutional quality index remains a significant predictor (at the 1 percent level) of SI-GADP, both in the OLS and IV specifications.

Overall, the similarity of the OLS and IV estimates in the social infrastructure regressions on the constitutional quality indices makes a strong case for the wide-spread notion in the literature that political institutions precede social infrastructure. Thus, our results indicate no or only very limited reverse causality running from social infrastructure to constitutional rules.

6. Concluding Remarks

Over the past 15 years, economists have provided a vast body of evidence supporting the idea that social infrastructure is a key determinant of cross-country differences in output levels. Meanwhile, the underlying determinants of social infrastructure have remained unexplored. There is a broad believe that political institutions and constraints play a major role, but competing theories suggest different candidate regressors and empirical studies report mixed effects. Moreover, many of the variables used to measure the impact of political constraints on social infrastructure lack precision or are excessively aggregated, making it difficult to

---

[25] Note that the Sargan statistic is not reported in this case as the model is exactly identified.

disentangle which precise features are relevant. In this paper, we consider a rich new dataset of actual constitutional rules that so far have been largely ignored by economists (although they have received much attention in political science). Using the resulting collection of 109 theory-based constitutional rules, we ask which aspects of constitutions determine social infrastructure.

We find that many of the measures hitherto employed in the literature on social infrastructure lose their explanatory power once detailed constitutional rules are introduced. Using our approach, the regression fit improves dramatically and it is clear that the primary data absorbs the effects previously attributed to aggregate constitutional proxies, such as the choice of a presidential or parliamentary regime. We highlight three important results. First, electoral rules matter, but in a more fundamental fashion than previously suggested. While Persson and Tabellini (2003) focused on the effects of majoritarian versus proportional elections, we instead find that restrictions on party formation, which reduce electoral competition, and the presence of minority quotas, which leads to targeted policies, are detrimental. Second, as pointed out by prior studies, checks and balances in the form of executive constraints are crucial determinants of social infrastructure. Two elements are important. On the one hand, single-executive countries have worse social infrastructure, offering support to theories highlighting the importance of constraints on executive powers. At the same time, our results provide support for theories emphasizing the importance of incentives for legislators to monitor the government. Third, human rights prove to be pivotal as well. To date, these factors have not been considered as determinants of social infrastructure, but our analysis indicates that citizens' rights form the ultimate layer of monitoring governments.

Nonetheless, a caveat is in order at this stage. Our approach in this paper has focused, as most of the literature does, on cross-country regressions that take constitutional features as given and use them to explain social infrastructure. While we find no evidence for reverse causality when running social infrastructure regressions on a constructed constitutional quality index that we instrument using standard approaches from the literature, it would be desirable to address endogeneity concerns directly at the constitutional rule level. However, given the nature of our data, an econometric solution seems currently not feasible due to the large number of required suitable instruments. Addressing this issue is a promising avenue for future research.

References

Acemoglu, D. and J.A. Robinson. 2008. "Persistence of Power, Elites, and Institutions," *American Economic Review*, 98(1), 267-293.

Acemoglu, D. and J.A. Robinson. 2012. *Why Nations Fail: The Origins of Power, Prosperity and Poverty.* New York: Random House/Crown.

Acemoglu, D., J.A. Robinson and R. Torvik. 2013. "Why Do Voters Dismantle Checks and Balances," *Review of Economic Studies*, 80(3), 845-875.

Acemoglu, D., S. Johnson and J.A. Robinson. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation," *American Economic Review*, 91(5), 1369-1401.

Acemoglu, D., S. Johnson and J.A. Robinson. 2002. "Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution," *Quarterly Journal of Economics*, 117(4), 1369-1401.

Acemoglu, D., S. Johnson and J.A. Robinson. 2005. "Institutions as the Fundamental Cause of Long-run Growth," in: P. Aghion and S. Durlauf (Eds.). *Handbook of Economic Growth.* Amsterdam: North Holland, 385-472.

Atlas, C.M., Hendershott, R.J., and Zupan, M.A. 1997. "Optimal Effort Allocation by US Senators: The Role of Constituency Size," *Public Choice*, 92(3-4), 221-229.

Balan, D.J. and S. Knack. 2012. "The Correlation between Human Capital and Morality and its Effect on Economic Performance," *Journal of Comparative Economics*, 40(3), 457-475.

Barro, R.J. 1997. *Determinants of Economic Growth: A Cross-Country Empirical Study.* Cambridge, MA: MIT Press.

Barro, R.J. 1999. "Determinants of Democracy," *Journal of Political Economy*, 107(6), 158-183.

Barro, R.J. 2000. "Rule of Law, Democracy, and Economic Performance," in: G. O'Driscoll, K. Holmes and M. Kirkpatrick (eds.). *2000 Index of Economic Freedom.* Washington, DC: Heritage Foundation and New York: Wall Street Journal.

Begun, J. and T.S. Eicher. 2008. "In Search of an Environmental Kuznets Curve in Sulphur Dioxide Concentrations: A Bayesian Model Averaging Approach," *Sustainable Development*, 13(6), 795-822.

Bernard, M., F. Bizzarro, M. Coppedge, J. Gerring, A. Hicken, C.H. Knutsen, S.I. Lindberg and S.-.E. Skaaning. 2015. "Party Strength and Economic Growth," *V-Dem Working Paper 2015:10.*

Besley, T. and A. Case. 1995. "Does Electoral Accountability Affect Economic Policy Choices? Evidence from Gubernatorial Term Limits," *Quarterly Journal of Economics*, 110(3), 769-798.

Besley, T. and A. Prat. 2006. "Handcuffs for the Grabbing Hand? Media Capture and Government Accountability," *American Economic Review*, 96(3), 720-736.

Besley, T., T. Persson and D.M. Sturm. 2010. "Political Competition, Policy and Growth: Theory and Evidence from the US," *Review of Economic* Studies, 77(4), 1329-1352.

Blume, L. and S. Voigt. 2007. "The Economic Effects of Human Rights," *Kyklos*, 60(4), 509-538.

Buchanan, J.M. and G. Tullock. 1962. *The Calculus of Consent: Logical Foundations of Constitutional Democracy.* Ann Arbor, MI: University of Michigan Press.

Campbell, J.L. and L.N. Lindberg. 1990. "Property Rights and the Organization of Economic Activity by the State," *American Sociological Review*, 55(5), 634-647.

Cervellati, M., P. Fortunato and U. Sunde. 2006. "A Dynamic Theory of Endogenous Political Institutions," in: T.S. Eicher and C. Garcia-Peñalosa (eds.). *Institutions, Development, and Economic Growth*. Cambridge, MA: MIT Press, 215-248.

Cheibub, J., Z. Elkins and T. Ginsburg. 2014. "Beyond Presidentialism and Parliamentarism," *British Journal of Political Science*, 44(3), 515-544.

Comparative Constitutions Project. 2014 "*Characteristics of National Constitutions*," Version 1.0. http://comparativeconstitutionsproject.org/download-data/.

Diamond, J.M. 1997. *Guns, Germs and Steel: A Short History of Everybody for the Last 13,000 Years*. New York: W.W. Norton & Co.

Dollar, D. and A. Kraay. 2003. "Institutions, Trade, and Growth," *Journal of Monetary Economics*, 50(1), 133-162.

Durlauf, S.N., A. Kourtellos and C.M. Tan. 2012. "Is God in the Details? A Reexamination of the Role of Religion in Economic Growth," *Journal of Applied Econometrics*, 27(7), 1059-1075.

Durlauf, Steven N., A. Kourtellos and C.M. Tan. 2008. "Are Any Growth Theories Robust?" *Economic Journal*, 118(March), 329-346.

Duverger, M. 1980. "A New Political-System Model: Semi-Presidential Government," *European Journal of Political Research*, 8(2), 165-187.

Easterly, W. and R. Levine. 2003. "Tropics, Germs, and Crops: How Endowments Influence Economic Development," *Journal of Monetary Economics*, 50(1), 3-39.

Eicher, T., C. Henn and C. Papageorgiou. 2012. "Trade Creation and Diversion Revisited: Accounting for Model Uncertainty and Natural Trading Partner Effects," *Journal of Applied Econometrics*, 27(2), 296-321.

Eicher, T.S., C. Papageorgiou and O. Roehn. 2007. "Unraveling the Fortunes of the Fortunate: An Iterative Bayesian Model Averaging (IBMA) Approach," *Journal of Macroeconomics* 29(3), 494-514

Faust, J., S. Gilchrist, J.H. Wright and E. Zakrajssek. 2013. "Credit Spreads as Predictors of Real-Time Economic Activity: A Bayesian Model-Averaging Approach" *Review of Economics and Statistics*, 95(5), 1501-1519.

Feld, L.P. and M.R. Savioz. 1997. "Direct Democracy Matters for Economic Performance: An Empirical Investigation," *Kyklos*, 50(4), 507-538.

Ferejohn, J. 1986. "Incumbent Performance and Electoral Control," *Public Choice*, 50(1-3), 5-25.

Fernández, C., E. Ley and M.F.J. Steel. 2001. "Benchmark Priors for Bayesian Model Averaging," *Journal of Econometrics*, 100(2), 381-427.

Ferraz, C. and F. Finan. 2011. "Electoral Accoutnabiltiy and Corruption: Evidence from the Audits of Local Governments," *American Economic Review*, 101(4), 1274-1311.

Fish, M.S. 2006. "Stronger Legislatures, Stronger Democracies," *Journal of Democracy*, 17(1), 5-20.

Frankel, J.A. and D.A. Romer. 1999. "Does Trade Cause Growth?" *American Economic Review*, 89(3), 379-399.

Funk, P. and C. Gathmann. 2013. "How Do Electoral Systems Affect Fiscal Policy? Evidence from Cantonal Parliaments, 1890-2000," *Journal of the European Economic Association*, 11(5), 1178-1203.

Gastil, R.D. 1986–87. *Freedom in the World: Political Rights and Civil Liberties 1986-87*. Westport, CT: Greenwood Press.

Ginsburg, T. and A. Simpser**. 2013. *Constitutions in Authoritarian Regimes*. Cambridge: Cambridge University Press.

Hall, R. and C.I. Jones. 1999. "Why Do Some Countries Produce so Much More Output Per Worker than Others?" *Quarterly Journal of Economics*, 114(1), 83-116.

Hayek, F. 1976. *Law, Legislation and Liberty, Vol. 2, The Mirage of Social Justice*. Chicago: University of Chicago Press.

Henderson, D.J., C. Papageorgiou and C.F. Parmeter. 2012. "Growth Empirics without Parameters," *Economic Journal*, 122 (March), 125-154.

Henisz, W.J. 2000. "The Institutional Environment for Economic Growth," *Economics and Politics*, 12(1), 1-31.

Iversen, T. and D. Soskice. 2006. "Electoral Institutions and the Politics of Coalitions: Why Some Democracies Redistribute More than Others," *American Political Science Review*, 100(2), 165-181.

Jeffreys, H. 1961. *Theory of Probability*. Oxford: Clarendon Press.

Kass, R.E. and A.E. Raftery. 1995. "Bayes Factors," *Journal of the American Statistical Association,* 90(430), 773-795.

Kass, R.E. and L. Wasserman. 1995. "A Reference Bayesian Test for Nested Hypotheses and its Relationship to the Schwarz Criterion," *Journal of the American Statistical Association*, 90(431), 928-934.

Keefer, P. 2011. "Collective Action, Political Parties and Pro-Development Public Policy," *Asian Development Review*, 28(1), 94-118.

Keefer, P. 2012. "Why Follow the Leader? Collective Action, Credible Commitment and Conflict," *World Bank Policy Research Paper No. 6179*.

Keefer, P. 2013. "Organizing for Prosperity: Collective Action, Political Parties and the Political Economy of Development," *World Bank Policy Research Paper No. 6583*.

Knack, S. 2002. "Social Capital and the Quality of Government: Evidence from the States," *American Journal of Political Science,* 46(4), 772-785.

Knack, S. and P. Keefer. 1995. "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures," *Economics and Politics,* 7(3), 207-227.

Knack, S. and P. Keefer. 1997. "Does Social Capital Have an Economic Payoff? A Cross-Country Investigation," *Quarterly Journal of Economics,* 112(4), 1251-1288.

La Porta, R., F. Lopez de Silanes, and A. Shleifer. 2008. "The Economic Consequences of Legal Origins," *Journal of Economic Literature*, 46(2), 285-332.

La Porta, R., F. Lopez de Silanes, C. Pop-Eleches and A. Shleifer. 2004. "Judicial Checks and Balances," *Journal of Political Economy*, 112(2), 445-470.

Lenkoski, A., T.S. Eicher and A.E. Raftery. 2014. "Two-Stage Bayesian Model Averaging in Endogenous Variable Models," *Econometric Reviews,* 33(1-4), 122-151.

Levmore, S. 1992. "Bicameralism: When Are Two Decisions Better than One?" *International Review of Law and Economics*, 12(2), 145-162.

Lindberg, S.I., A. Lührmann and V. Mechkova. 2017. "From de-jure to de-facto: Mapping Dimensions and Sequences to Accountability," Background Paper for the World Development Report 2017, *Governance and the Law*.

Manca, F. 2010. "Technology Catch-up and the Role of Institutions," *Journal of Macroeconomics*, 32(4), 1041-1053.

Masanjala, W.H. and C. Papageorgiou. 2008. "Rough and Lonely Road to Prosperity: A Reexamination of the Sources of Growth in Africa Using Bayesian Model Averaging," *Journal of Applied Econometrics*, 23(5), 671-682.

Maskin, E. and J. Tirole. 2004. "The Politician and the Judge: Accountability in Government," *American Economic Review*, 94(4), 1034-1054.

Matsusaka, J.G. 1995. "Fiscal Effects of the Voter Initiative: Evidence from the Last 30 Years," *Journal of Political Economy*, 103(3), 587-623.

Mauro, P. 1995. "Corruption and Growth," *Quarterly Journal of Economics,* 110(3), 681-712.

Melton, J. and T. Ginsburg. 2014. "Does De Jure Judicial Independence Really Matter? A Reevaluation of Explanations for Judicial Independence," *Journal of Law and Courts*, 2(2), 187-217.

Melton, J., Z. Elkins, T. Ginsburg and K. Leetaru. 2013. "On the Interpretability of Law: Lessons from the Decoding of National Constitutions," *British Journal of Political Science*, 43(2), 399-423.

Mittal, S. and B.R. Weingast. 2011. "Self-enforcing constitutions: with an application to democratic stability in America's first century," *The Journal of Law, Economics, & Organization*, 29(2), 278-302.

Montesquieu, C.L.S. 1748. *The Spirit of the Laws*. Paris.

Montgomery, J.M. and B. Nyhan. 2010. "Bayesian Model Averaging: Theoretical Developments and Practical Applications," *Political Analysis*, 18(2), 245-270.

Montgomery, J.M., F.M. Hollenbach and M.D. Ward. 2012. "Ensemble Predictions of the 2012 US Presidential Election," *PS: Political Science & Politics*, 45(4), 651-654.

Moral-Benito, E. 2015. "Model Averaging in Economics: An Overview," *Journal of Economic Surveys*, 29(1), 46-75.

Moulton, B.R. 1991. "A Bayesian Approach to Regression Selection and Estimation, with Application to a Price Index for Radio Services," *Journal of Econometrics*, 49(1-2), 169-193.

Olson, M. 1965. *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, MA: Harvard University Press.

Ostrom, E. 2003. "How Types of Goods and Property Rights Jointly Affect Collective Action," *Journal of Theoretical Politics*, 15(3), 239-270.

Pande, R. 2003. "Can Mandated Political Representation Increase Policy Influence for Disadvantaged Minorities? Theory and Evidence from India," *American Economic Review*, 93(4), 1132-1151.

Persson, T. 2004. "Consequences of Constitutions," *Journal of the European Economic Association*, 2(2-3), 139-161.

Persson, T. and G. Tabellini. 1996. "Federal Fiscal Constitutions: Risk Sharing and Moral Hazard," *Econometrica*, 64(3), 623-646.

Persson, T. and G. Tabellini. 1999. "The Size and Scope of Government: Comparative Politics with Rational Politicians, 1998 Alfred Marshall Lecture," *European Economic Review*, 43(4-6), 699-735.

Persson, T. and G. Tabellini. 2000. *Political Economics: Explaining Public Policy*. Cambridge, MA: MIT Press.

Persson, T. and G. Tabellini. 2003. *The Economic Effects of Constitutions*. Cambridge, MA: MIT Press.

Persson, T. and G. Tabellini. 2004. "Constitutions and Economic Policy," *Journal of Economic Perspectives*, 18(1), 75-98.

Persson, T., G. Roland and G. Tabellini. 1997. "Separation of Powers and Political Accountability," *Quarterly Journal of Economics*, 112(4), 1163-1202.

Persson, T., G. Roland and G. Tabellini. 2000. "Comparative Politics and Public Finance", *Journal of Political Economy,* 108(6), 1121-1161.

Persson, T., G. Roland and G. Tabellini. 2007. "Electoral Rules and Government Spending in Parliamentary Democracies," *Quarterly Journal of Political Science*, 2(2), 155-188.

Posner, R.A. 1995. "The Costs of Enforcing Legal Rights," *East European Constitutional Review*, 4(3), 71-83.

Posner, R.A. 1998. "Creating a Legal Framework for Economic Development," *World Bank Research Observer*, 13(1), 1-11.

Putnam, R.D., R. Leonardi and R.Y. Nanetti. 1994. *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, NJ: Princeton University Press.

Qian, Y. and B.R. Weingast. 1997. "Federalism as a Commitment to Preserving Market Incentives," *Journal of Economic Perspectives*, 11(4), 83-92.

Raftery, A.E. 1995. "Bayesian Model Selection in Social Research," *Sociological Methodology*, 25, 111-163.

Raftery, A.E. and Y. Zheng. 2003. "Discussion: Performance of Bayesian Model Averaging," *Journal of the American Statistical Association*, 98(464), 931-938.

Rockey, J. 2012. "Reconsidering the Fiscal Effects of Constitutions," *European Journal of Political Economy*, 28(3), 313-323.

Rodrik, D., A. Subramanian and F. Trebbi. 2004. "Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development," *Journal of Economic Growth*, 9(2), 131-165.

Sachs, J.D. and A.M. Warner. 1995. "Economic Reform and the Process of Global Integration," *Brookings Papers on Economic Activity*, 1, 1-118.

Sen, A. 1983. *Poverty and Famines: An Essay on Entitlement and Deprivation*. Oxford: Oxford University Press.

Sen, A. 1999. *Development as Freedom,* New York: Oxford University Press.

Shugart, M.S. and J.M. Carey. 1992. *Presidents and Assemblies: Constitutional Design and Electoral Dynamics*. Cambridge, UK: Cambridge University Press.

Snyder Jr., J.M. and D. Strömberg. 2010. "Press Coverage and Political Accountability," *Journal of Political Economy*, 118(2), 355-408.

Strom, K. 1990. *Minority Governments and Majority Rule*. Cambridge, UK: Cambridge University Press.

Tan, C.M. 2010. "No One True Path: Uncovering the Interplay between Geography, Institutions, and Fractionalization in Economic Development," *Journal of Applied Econometrics*, 25(7), 1100-1127.

Thornton, M. and M. Ulrich. 1999. "Constituency Size and Government Spending," *Public Finance Review*, 27(6), 588-598.

Tobias, J.L. and M. Li. 2004. "Returns to Schooling and Bayesian Model Averaging: A Union of Two Literatures," *Journal of Economic Surveys*, 18(2), 153-180.

Ulmer, J.T. 2012. "Recent Developments and New Directions in Sentencing Research," *Justice Quarterly*, 29(1), 1-40.

Voigt, S. and E.M. Salzberger. 2002. "Choosing Not to Choose: When Politicians Choose to

Delegate Powers," *Kyklos*, 55(2), 289-310.

Weingast, B.R. 1995. "The Economic Role of Political Institutions: Market-Preserving Federalism and Economic Development," *Journal of Law, Economics, & Organization*, 11(1), 1-31.

Weingast, B.R. 1997. "The Political Foundations of Democracy and the Rule of Law," *American Political Science Review*, 91(2), 245-263.

Wright, J.H. 2008a. "Bayesian Model Averaging and Exchange Rate Forecasts," *Journal of Econometrics*, 146(2), 329-341.

Wright, J.H. 2008b. "Forecasting US Inflation by Bayesian Model Averaging," *Journal of Forecasting*, 28(2), 131-144.

Yeung, K.Y., R.E. Bumgarner and A.E. Raftery. 2005. "Bayesian Model Averaging: Development of an Improved Multi-class, Gene Selection and Classification Tool for Microarray Data," *Bioinformatics*, 21(10), 2394-2402.

Table 1: Restricted Constitution Data – Variables, Definitions and Summary Statistics

Variable	Definition and Source if other than CCP (2014)	Mean	SD	Min	Max
Electoral Rules - Parties					
PartiesCanBeProhibited	Does the constitution prohibit one or more political parties? 2: Yes, certain parties, 3: Yes, certain types of parties	0.25	0.43	0	1
PARTRGHT	Does the constitution provide for a right to form political parties?	0.48	0.50	0	1
Electoral Rules - Accountability					
ASSETS	Does the Constitution require that legislators disclose their earnings and/or assets?	0.10	0.30	0	1
CensorshipProhibited	Does the constitution prohibit censorship? 1: Yes, 2: Censorship allowed in exceptional cases (i.e. war, state of emergency, or in the interest of public safety, etc.)	0.51	0.50	0	1
GOVMED_2	How does the constitution address the state operation of print or electronic media? 2: State can operate media outlets	0.15	0.36	0	1
HOSELSYS_1	Which of these best categorizes the electoral system for the Head of State? 1: Plurality	0.09	0.28	0	1
HOSTERM_UNDER5	Is the maximum term length of the Head of State 5 years or under?	0.64	0.48	0	1
LimitsOnCampaignDonations	Are there any provisions for limits on money used for campaigns?	0.12	0.32	0	1
MEDCOM	Does the constitution mention a special regulatory body/institution to oversee the media market?	0.15	0.36	0	1
MEDMARK_12345	Does the constitution mention any of the following general principles about the operation of the media market? 1: no monopoly or oligopoly, 2: competitive, 3: pluralism, 4: balanced, 5: fair	0.20	0.41	0	1
OVERSGHT_123	Does the constitution provide for an electoral commission or electoral court to oversee the election process? 1: electoral commission, 2: electoral court, 3: both	0.59	0.50	0	1
PublicMeetings	Does the constitution prescribe whether or not the meetings of the Legislature are (generally) held in public or that a record of the deliberations of the Legislature has to be published?	0.52	0.50	0	1
UHTERM_3_5	Is the maximum term length for members of the Second Chamber of the Legislature between 3 and 5 years?	0.25	0.43	0	1
Electoral Rules - Representativeness					
Chamber2MembersAreNotElected	Are members of the Second Chamber appointed or elected by electors?	0.26	0.44	0	1
HOGReplace=NoAutomaticSelection	Should the head of government need to be replaced before the normally scheduled replacement process, what is the process of replacement? 1: The normal selection process (whether it be election or appointment) is implemented, 2: The legislature appoints a successor	0.23	0.43	0	1
HOSELECT_2	How is the Head of State selected? 2: elected by citizens	0.58	0.50	0	1
HOSReplace=NoAutomaticSelection	Are there no automatic replacement procedures for the head of state if the need arises?	0.42	0.50	0	1
LHSELECT_3	How are members of the first (or only) chamber of the Legislature selected? 3: elected by citizens	0.97	0.17	0	1
MinorityQuotaInLegislature	Does the constitution stipulate a quota for representation of certain groups in the Second Chamber?	0.09	0.28	0	1
NewLawsRequireSuperMajority	Is a supermajority needed for passing any legislation?	0.28	0.45	0	1
UHSELECT_3	How are members of the Second Chamber selected? 3: elected by citizens	0.28	0.45	0	1
UniversalSuffrage	Does the constitution make a claim to universal adult suffrage?	0.58	0.50	0	1
VOTERES	Does the constitution place any restrictions on the right to vote?	0.91	0.28	0	1
VotingRestriction=Incapacitated	Besides age limits, which additional restrictions does the constitution place on voting? 1: must not be incapacitated (mentally or physically)	0.30	0.46	0	1
Federalism					
FederalAutonomousIndigenous	Does the constitution recognize any of the following subnational governments? 3: Autonomous Indigenous Groups	0.13	0.34	0	1
FederalLocal	Does the constitution recognize any of the following subnational governments? 1: Local/Municipal Government	0.75	0.43	0	1
FederalState/Region	Does the constitution recognize any of the following subnational governments? 2: Subsidiary units (regions, states, or provinces)	0.64	0.48	0	1
FEDREV	Does the constitution contain provisions allowing review of the legislation of the constituent units in federations by federal judicial or other central government organs?	0.17	0.38	0	1
FEDUNIT_12	Is the state described as either federal, confederal, or unitary? 1: federal, 2:confederal	0.17	0.38	0	1
Checks and Balances - Bicameralism					

Variable	Definition and Source if other than CCP (2014)	Mean	SD	Min	Max
Housenum=1	Does the Legislature contain one chamber?	0.48	0.50	0	1
Checks and Balances - Executive Constraints					
CounterCorruptionComission	Does the constitution contain provisions for a counter corruption commission?	0.07	0.26	0	1
EMAPPR_1	Who approves a state of emergency? 1: does not need approval	0.15	0.36	0	1
EMRIGHTS	Does the constitution provide for suspension or restriction of rights during states of emergency?	0.61	0.49	0	1
ExecCanDeclareStateEmergency	Does the Head of Government have decree power or can the head of government (or head of state) declare a state of emergency?	0.67	0.48	0	1
HOGIMM_2	Is the Head of Government provided with immunity from prosecution? 2: Yes, limited immunity	0.10	0.30	0	1
HOSDEC	Does the Head of State have decree power?	0.57	0.50	0	1
IMMUNITY_2	Does the constitution provide for immunity for the members of the Legislature under some conditions? 2: limited immunity	0.80	0.41	0	1
IndependentExecutive	Does the constitution contain an explicit declaration regarding the INDEPENDENCE of the central executive organ(s)?	0.13	0.34	0	1
IndivLegislatorsCanBeRemoved	Are there provisions for removing individual legislators?	0.71	0.46	0	1
NumberOfExec=1	One executive is specified in the constitution.	0.45	0.50	0	1
ReasonHOSDismissal=Violation	Can the head of state be dismissed due to crimes, treason, incapacitation or violations of the constitutions?	0.74	0.44	0	1
ReasonStateEmergency=Disaster	Under which of the following circumstances can a state of emergency be called? 3: national disaster	0.33	0.48	0	1
ReasonStateEmergency=Econ	Under which of the following circumstances can a state of emergency be called? 5: economic emergency	0.13	0.34	0	1
ReasonStateEmergency=General	Under which of the following circumstances can a state of emergency be called? 4: general danger	0.38	0.49	0	1
ReasonStateEmergency=Security	Under which of the following circumstances can a state of emergency be called? 2: internal security	0.46	0.50	0	1
ReasonStateEmergency=War	Under which of the following circumstances can a state of emergency be called? 1: war/aggression	0.49	0.50	0	1
Checks and Balances - Delegation					
BANKGOAL_1	What are the policy goals of the central bank? 1: Price stability alone	0.07	0.26	0	1
LegalProvisionsForIntLaws	Does the constitution contain provisions concerning the relationship between the constitution and international law?	0.77	0.43	0	1
LegalProvisionsForIntOrgs	Does the constitution contain provisions concerning international organizations?	0.65	0.48	0	1
Checks and Balances - Direct Democracy					
Referenda	Does the constitution provide for the ability to propose a referendum (or plebiscite) or for the ability of individuals to propose legislative initiatives (referendum from below)?	0.68	0.47	0	1
Checks and Balances - Parliamentary Powers					
ExecutiveSignsLegislation	Which of the following describes the default mode for the approval of legislation? 4: Executive is required to take action: either sign/promulgate or return to the legislature	0.38	0.49	0	1
HOSCanDismissLegislature	Who, if anybody, can dismiss the legislature? 1: head of state	0.58	0.50	0	1
HOSDISS	Are there provisions for dismissing the Head of State?	0.83	0.38	0	1
LEGAPPPT_123	Does the approving/vetoing actor have the power to approve/reject parts of the bill, the bill in its entirety, or both? 1: Can only veto parts of the bill (line-item veto), 2: Can only veto the bill in its entirety, 3: Can veto either specific parts or the bill in its entirety	0.42	0.50	0	1
LegCannotInvestigateExecutive	Does the legislature not have the power to investigate the activities of the executive branch?	0.06	0.24	0	1
LegOrCabCanDeclareStateEmergency	Who can declare a state of emergency? 4: government/cabinet, 5: first (or only) chamber of the legislature, 7: both chambers of the legislature are required	0.12	0.32	0	1
OVERPCT_2_3_3_5	What proportion of the vote is needed to override a veto? 2_3: 2/3 majority, 3_5: 3/5 majority	0.33	0.48	0	1
OVERRIDE	Can vetoes of legislation be overridden?	0.65	0.48	0	1
ReasonHOSDismissal=Unrestricted	Under what grounds can the Head of State be dismissed? 1: general dissatisfaction with the leadership (i.e., dismissal is fairly unrestricted)	0.09	0.28	0	1
SpecialLegProcessForBudgetBills	Does the constitution provide for any of the following special legislative processes? 2: budget bills	0.78	0.42	0	1
SpecialLegProcessForSpendingBills	Does the constitution provide for any of the following special legislative processes? 5: spending bills	0.32	0.47	0	1
SpecialLegProcessForTaxBills	Does the constitution provide for any of the following special	0.62	0.49	0	1

Variable	Definition and Source if other than CCP (2014)	Mean	SD	Min	Max
	legislative processes? 3: tax bills				
SPECLEG_1	Does the constitution provide for any of the following special legislative processes? 1: organic law	0.22	0.42	0	1
SPECLEG_4	Does the constitution provide for any of the following special legislative processes? 4: finance bills	0.44	0.50	0	1
Checks and Balances - Judicial Independence					
ConstPartsUnamendable	Are any parts of the constitution unamendable?	0.29	0.46	0	1
JREM	Are there provisions for dismissing judges?	0.81	0.39	0	1
AdoptAmendmentRequires_50perc	Do constitutional amendments require more than a simple majority by the legislature to be approved (including 3/5 or 3/4 majorities)?	0.65	0.48	0	1
Rule of Law					
JUDCRTS_2	For which of the following specialized courts does the constitution contain provisions? 2: constitutional court	0.36	0.48	0	1
RuleOfLaw(GermanRechtsStaat)	Does the constitution contain a general statement regarding rule of law, legality, or Rechtsstaat (the German equivalent)?	0.39	0.49	0	1
Human Rights - Property					
DebtorsCannotBeDetained	Does the constitution forbid the detention of debtors	0.22	0.42	0	1
EXPCOND_137	Under what conditions or for what purposes can the state expropriate private property? 1: Infrastructure, public works, 3: national defense, 7: general public purpose	0.67	0.48	0	1
EXPRCOMP_134	What is the specified level of compensation for expropriation of private property? 1: fair/just, 3: appropriate, 4: adequate	0.42	0.50	0	1
EXPRCOMP_2	What is the specified level of compensation for expropriation of private property? 1: fair/just, 3: appropriate, 4: adequate	0.13	0.34	0	1
EXPROP	Can the government expropriate private property under at least some conditions?	0.87	0.34	0	1
FREECOMP	Does the constitution provide the right to a free and/or competitive market?	0.22	0.42	0	1
PROPRGHT	Does the constitution provide for a right to own property?	0.77	0.43	0	1
ReasonExpropriation=Redistribution	Under what conditions or for what purposes can the state expropriate private property? 2: redistribution to other citizens, 4: land, natural resource preservation, 5: exploitation of natural resources, 6: land reform	0.16	0.37	0	1
Taxes	Does the constitution refer to a duty to pay taxes?	0.32	0.47	0	1
Human Rights - Negative					
AcademicFreedom	Does the constitution guarantee academic freedom?	0.48	0.50	0	1
ASSEM	Does the constitution provide for freedom of assembly	0.90	0.30	0	1
ASSOCEXPRESSOPINION	Combination of ASSOC ('Does the constitution provide for freedom of association?'), EXPRESS ('Does the constitution provide for freedom of expression or speech?'), and OPINION ('Does the constitution provide for freedom of opinion, thought, and/or conscience?')	0.93	0.26	0	1
BUSINES	Does the constitution provide a right to conduct/establish a business?	0.38	0.49	0	1
CorporalPunishmentProhibited	Does the constitution universally prohibit the use of corporal punishment?	0.07	0.26	0	1
EqualRights&NonDiscrimination	Does the constitution refer to equality before the law, the equal rights of men, or non-discrimination?	0.96	0.21	0	1
EXPOST	Does the constitution prohibit punishment by laws enacted ex post facto?	0.78	0.42	0	1
FREEMOVE	Does the constitution provide for freedom of movement?	0.83	0.38	0	1
FREEREL	Does the constitution provide for freedom of religion?	0.94	0.24	0	1
JOINTRDE	Does the constitution provide for the right to form or to join trade unions?	0.73	0.45	0	1
NoUnjustifiedRestraint	Does the constitution provide for the right to protection from unjustified restraint (habeas corpus)?	0.86	0.36	0	1
OFFREL_1	Does the constitution contain provisions concerning a national or official religion or a national or official church? 1: Yes, national religion specified	0.15	0.36	0	1
ProtectionAgainstGovernment	Does the constitution contain provisions protecting the individual against illegal or ultra-vires administrative actions?	0.35	0.48	0	1
RightToSelfDetermination	Does the constitution provide for a people's right of self-determination?	0.17	0.38	0	1
SeparationChurch&State	Does the constitution contain an explicit decree of separation of church and state?	0.23	0.43	0	1
STRIKE_12	Does the constitution provide for a right to strike? 1: Yes, 2: Yes, but with limitations	0.49	0.50	0	1

Variable	Definition and Source if other than CCP (2014)	Mean	SD	Min	Max
TORTURE_12	Does the constitution prohibit torture? 1: Universally Prohibited, 2: Prohibited Except in the Case of War	0.70	0.46	0	1
TrialsArePublic	Does the constitution generally require public trials?	0.64	0.48	0	1
TrialsInAccusedLanguage	Does the constitution specify the trial has to be in a language the accused understands or the right to an interpreter if the accused cannot understand the language?	0.36	0.48	0	1
WOLAW	Does the constitution mention nulla poena sine lege or the principle that no person should be punished without law?	0.62	0.49	0	1
WORK	Does the constitution refer to a duty to work?	0.28	0.45	0	1
Human Rights - Positive					
ACHIGHED_2	Does the constitution guarantee equal access to higher education? 2: Yes, but qualified	0.17	0.38	0	1
AdequateLivingStandardProvision	Does the constitution provide for a right to an adequate or reasonable standard of living?	0.30	0.46	0	1
AllRightsBinding	Are rights provisions binding on private parties as well as the state?	0.19	0.39	0	1
EDCOMPFREE	Does the constitution stipulate that education be compulsory until at least some level? Or does the constitution stipulate that education be free, at least up to some level?	0.68	0.47	0	1
FairTrial	Does the constitution provide the right to a fair trial?	0.45	0.50	0	1
FalseImprisonmentRedress	Does the constitution provide for the right of some redress in the case of false imprisonment, arrest, or judicial error?	0.35	0.48	0	1
Healthcare	Does the constitution mention a state duty to provide health care or that health care should be provided by the government free of charge?	0.48	0.50	0	1
HigherEducation	Does the constitution guarantee equal access to higher education? 1: Yes	0.17	0.38	0	1
REMUNER	Does the constitution provide the right to just remuneration, fair or equal payment for work?	0.45	0.50	0	1
SHELTER	Does the constitution provide for the right to shelter or housing?	0.32	0.47	0	1
Location and Colonial Controls					
AFRICA	Regional dummy variable, equal to 1 if a country is in Africa, 0 otherwise. Source: Persson and Tabellini (2003)	0.16	0.36	0	1
ASIAE	Regional dummy variable, equal to 1 if a country is in East Asia, 0 otherwise. Source: Persson and Tabellini (2003)	0.16	0.36	0	1
COL_ESPA	Spanish colonial origin, discounted by years since independence), and defined as COL_ESPA = COL_ESP*(250 − T_INDEP)/250. Source: Persson and Tabellini (2003)	0.07	0.14	0	0.79
COL_OTHA	Colonial origin other than Spanish or British, discounted by years since independence, and defined as COL_OTH*(250 − T_INDEP)/250. Source: Persson and Tabellini (2003)	0.16	0.3	0	0.96
COL_UKA	British colonial origin, discounted by years since independence, and defined as COL_UKA = COL_UK*(250 − T_INDEP)/250. Source: Persson and Tabellini (2003)	0.28	0.39	0	0.92
LAAM	Regional dummy variable, equal to 1 if a country is in Latin America, Central America or the Caribbean, 0 otherwise. Source: Persson and Tabellini (2003)	0.28	0.45	0	1
Hall and Jones & Persson and Tabellini Variables					
AGE	Age of democracy, defined as: AGE=(2000 − DEM_AGE)/200 and varying between 0 and 1, with US being the oldest democracy (value of 1). Source: Persson and Tabellini (2003)	0.22	0.22	0.03	1
ENGFRAC	The fraction of the population speaking English as a native language. Source: Hall and Jones (1999)	0.1	0.28	0	1
EURFRAC	The fraction of the population speaking one of the major languages of Western Europe: English, French, German, Portuguese, or Spanish. Source: Hall and Jones (1999)	0.38	0.43	0	1
FEDERAL	Dummy variable, equal to 1 if the country has a federal political structure, 0 otherwise. Source: Persson and Tabellini (2003)	0.17	0.38	0	1
FRANKROM	Natural log of the Frankel-Romer forecasted trade share, derived from a gravity model of international trade that only takes into account country population and geographical features. Source: Hall and Jones (1999)	2.81	0.82	0.94	5.64
LATITUDE	Latitude measure, normalized to lie between 0 and 1. Source: Hall and Jones (1999)	0.32	0.19	0	0.71
MAJ	Dummy variable for electoral systems. Equals 1 if all the lower house is elected under plurality rule, 0 otherwise. Only legislative elections (lower house) are considered. Source: Persson and Tabellini (2003)	0.35	0.48	0	1
PARL_DEMOC	Score for democracy from POLITY IV project interacted with (1-	4.68	4.74	-2	10

Variable	Definition and Source if other than CCP (2014)	Mean	SD	Min	Max
	PRES). Source: Persson and Tabellini (2003)				
PRES	1 in presidential regimes, 0 otherwise. Regimes where the confidence of the assembly is not necessary for the executive (even if an elected president is not chief executive, or if there is no elected president) are included among presidential regimes. Most semi-presidential and premier-presidential systems are classified as parliamentary. Source: Persson and Tabellini (2003)	0.44	0.5	0	1
SI-GADP	Government anti-diversion policy index. Source: Hall and Jones (1999)	0.69	0.21	0.31	1
SI-HJ	Social infrastructure: average of years open and SI-GADP. Source: Hall and Jones (1999)	0.58	0.25	0.16	1
Note: There are 69 observations. If answer to question is YES, dummy variables take value 1, and 0 otherwise.					

Table 2 – Panels 1 and 2: Determinants of Social Infrastructure (SI-HJ)

Dependent Variables: Hall and Jones (1999) Social Infrastructure		Panel 1: SI-HJ Unrestricted Cons. Rules			Panel 2: SI-HJ Restricted Cons. Rules		
Category	Variable	Post. Prob.	Post. Mean	Post. SD	Post. Prob.	Post. Mean	Post. SD
Electoral Rules – Parties	PartiesCanBeProhibited	100	-0.16	0.03	100	-0.17	0.03
Electoral Rules – Accountability	LimitsOnCampaignDonations	100	0.21	0.04	100	0.26	0.05
Electoral Rules – Representativeness	MinorityQuotaInLegislature	100	-0.18	0.03	100	-0.21	0.05
	NewLawsRequireSuperMajority	100	0.07	0.02	100	0.08	0.03
	HOSReplace=NoAutomaticSelection	100	-0.11	0.03	99	-0.09	0.03
	LegChamber1IsElected	61	-0.02	0.02			
Federalism	FederalAutonomousIndigenous	100	-0.19	0.04	100	-0.20	0.05
Checks and Balances – Bicameralism	Housenum=1				75	0.05	0.04
Checks and Balances – Executive Constraints	IndivLegislatorsCanBeRemoved	100	-0.17	0.02	100	-0.14	0.03
	NumberOfExec=1	100	-0.10	0.02	95	-0.09	0.04
	ReasonStateEmergency=General	100	0.08	0.02	80	0.05	0.04
	ExecCanDeclareStateEmergency	100	-0.10	0.03	79	-0.08	0.05
	CounterCorruptionComission	99	0.13	0.04			
	ReasonHOSDismissal=Violation	98	-0.07	0.03			
Checks and Balances – Delegation	LegalProvisionsForIntOrgs	100	0.08	0.02	100	0.09	0.03
Checks and Balances – Parliamentary Powers	LegCannotInvestigateExecutive	98	-0.12	0.04			
	HOSCanDismissLegislature				56	-0.04	0.05
Human Rights – Property	DebtorsCannotBeDetained	100	-0.09	0.03	86	-0.10	0.06
Human Rights – Negative	AcademicFreedom	100	0.15	0.03	100	0.10	0.03
	TrialsArePublic	100	-0.13	0.02	100	-0.15	0.03
	TrialsInAccusedLanguage	100	0.18	0.03	100	0.21	0.03
	EqualRights&NonDiscrimination	100	0.25	0.05	100	0.23	0.06
	SeparationChurch&State	99	0.07	0.03	70	0.05	0.04
	FalseImprisonmentRedress	100	0.07	0.02			
Human Rights – Positive	AdequateLivingStandardProvision	100	-0.23	0.02	100	-0.21	0.03
	AllRightsBinding	100	-0.14	0.03	100	-0.15	0.04
	Healthcare	99	-0.09	0.03			
Hall and Jones	LATITUDE						
	ENGFRAC						
	EURFRAC						
	FRANKROM						
Persson and Tabellini	AGE	100	0.33	0.06	100	0.40	0.08
	PRES						
	MAJ						
	PARL_DEMOC						
	FEDERAL						
	Nobs		69			69	
	R2		0.968			0.940	
	BIC		-110.48			-87.95	

Note: The Table reports only results for variables that surpass the 50% effect threshold. All specifications include colonial and continental controls.

Table 2 – Panels 3 and 4: Determinants of Social Infrastructure (SI-GADP)

Dependent Variables: Hall and Jones (1999) GADP		Panel 3: SI-GADP Unrestricted Cons. Rules			Panel 4: SI-GADP Restricted Cons. Rules		
Category	Variable	Post. Prob.	Post. Mean	Post. SD	Post. Prob.	Post. Mean	Post. SD
Electoral Rules – Parties	HOSElection=Majority	52	-0.01	0.01			
	PartiesCanBeProhibited				59	-0.02	0.02
Electoral Rules – Accountability	LimitsOnCampaignDonations	78	0.02	0.02			
	CensorshipProhibited				100	0.08	0.02
Electoral Rules – Representativeness	NewLawsRequireSuperMajority	100	0.03	0.01			
	Chamber2MinAge=Below22	100	-0.04	0.01			
	UniversalSuffrage	98	-0.03	0.01			
	Chamber2MembersAreNotElected				100	-0.07	0.02
	HOGReplace=NoAutomaticSelection				100	-0.05	0.02
	VotingRestriction=Incapacitated				100	-0.04	0.01
Federalism	FederalLocal	100	-0.04	0.01			
	FederalAutonomousIndigenous				71	0.03	0.03
Checks and Balances – Executive Constraints	CounterCorruptionComission	100	0.11	0.02	100	0.07	0.02
	ReasonStateEmergency=War	100	-0.06	0.01	100	-0.08	0.02
	ReasonStateEmergency=Disaster	100	0.12	0.01	100	0.11	0.02
	IndivLegislatorsCanBeRemoved	100	-0.06	0.01			
	LegDeclaresWar	81	-0.02	0.01			
	ReasonStateEmergency=Security				100	-0.06	0.02
	IndependentExecutive				100	-0.06	0.02
Checks and Balances – Delegation	LegalProvisionsForIntOrgs	100	0.03	0.01	100	0.06	0.01
	LegalProvisionsForIntLaws	100	-0.07	0.01	100	-0.07	0.02
	CentralBank	99	0.03	0.01			
Checks and Balances – Parliamentary Powers	LegOrCabCanDeclareStateEmergency	100	0.04	0.01	91	0.04	0.02
	SpecialLegProcessForTaxBills	92	-0.02	0.01	100	-0.06	0.02
	ReasonHOSDismissal_Unrestricted	88	0.03	0.02			
	ExecutiveSignsLegislation				100	-0.03	0.01
Checks and Balances – Judicial Independence	ConstPartsUnamendable	97	-0.03	0.01	99	-0.03	0.01
	AdminCourts	100	-0.04	0.01			
Human Rights – Property	DebtorsCannotBeDetained	100	-0.06	0.01			
	FairTrial	100	-0.06	0.01			
	Taxes	100	0.04	0.01			
	ReasonExpropriation=Redistribution				100	-0.09	0.02
Human Rights – Negative	AcademicFreedom	100	0.06	0.01	100	0.14	0.02
	SeparationChurch&State	100	0.09	0.01	98	0.04	0.02
	EqualRights&NonDiscrimination	100	0.10	0.02			
	NoUnjustifiedRestraint	100	-0.05	0.02			
	ProtectionAgainstGovernment	79	0.02	0.02			
	RightToSelfDetermination				100	0.09	0.02
Human Rights – Positive	AdequateLivingStandardProvision	100	-0.06	0.01	100	-0.08	0.01
	Healthcare	100	-0.13	0.01	100	-0.13	0.02
	HigherEducation	100	-0.05	0.01			
	Opportunity	100	0.07	0.01			
	ScientificProgress	100	0.05	0.01			
Hall and Jones	LATITUDE	100	0.68	0.04	100	0.77	0.06
	ENGFRAC						
	EURFRAC						
	FRANKROM						
Persson and Tabellini	AGE	100	0.41	0.02	100	0.36	0.04
	PRES	100	-0.04	0.01	98	-0.09	0.03
	MAJ				93	0.04	0.02
	PARL_DEMOC						
	FEDERAL						
	Nobs		69			69	
	R2		0.992			0.985	
	BIC		-183.70			-151.54	

Note: The Table reports only results for variables that surpass the 50% effect threshold. All specifications include colonial and continental controls.

Table 3a: Constitutional Quality and SI-HJ

Dependent variable: Social Infrastructure (SI-HJ)	HJ Instruments Sample		Settler Mortality Sample	
	(1)	(2)	(3)	(4)
	OLS	IV	OLS	IV
Constitution Index (SI-HJ)	2.847***	3.351***	3.225***	3.995***
	(0.178)	(0.385)	(0.327)	(1.183)
LATITUDE	-0.040	-0.021	-0.080	0.020
	(0.093)	(0.100)	(0.126)	(0.179)
AGE	0.395***	0.386***	0.373***	0.418***
	(0.040)	(0.038)	(0.054)	(0.063)
PARL_DEMOC	0.004	0.003	0.002	0.000
	(0.007)	(0.005)	(0.006)	(0.005)
MAJ	-0.003	0.002	-0.034	-0.060
	(0.025)	(0.025)	(0.038)	(0.054)
PRES	0.049	0.055	0.066	0.085*
	(0.068)	(0.046)	(0.049)	(0.045)
FEDERAL	0.004	0.000	0.020	0.025
	(0.019)	(0.018)	(0.025)	(0.022)
Constant	-1.066***	-1.360***	-1.245***	-1.738**
	(0.112)	(0.235)	(0.239)	(0.720)
Nobs	69	69	39	39
R2	0.934	0.922	0.941	0.916
Locational and colonial controls	Yes	Yes	Yes	Yes
Sargan stat	N/A	0.113	N/A	N/A
Sargan p-value	N/A	0.945	N/A	N/A

Note: The constitution index is based on panel 2 in Table 2. In the left panel, the constitution index is instrumented with ENGFRAC, EURFRAC and FRANKROM as in Hall and Jones (1999). In the right panel, the constitution index is instrumented with the settler mortality variable as in Acemoglu et al. (2001). Robust standard errors in parentheses. ***, **, and * indicate 1 percent, 5 percent and 10 percent significance levels, respectively.

Table 3b: Constitutional Quality and SI-GADP

Dependent variable: Social Infrastructure (SI-GADP)	HJ Instruments Sample		Settler Mortality Sample	
	(1)	(2)	(3)	(4)
	OLS	IV	OLS	IV
Constitution Index (SI-GADP)	1.588***	1.839***	1.586***	1.427***
	(0.069)	(0.202)	(0.066)	(0.484)
LATITUDE	0.785***	0.861***	0.785***	0.719***
	(0.052)	(0.063)	(0.053)	(0.207)
AGE	0.368***	0.371***	0.350***	0.335***
	(0.017)	(0.017)	(0.021)	(0.053)
PARL_DEMOC	0.003	0.003**	0.003	0.003
	(0.002)	(0.001)	(0.002)	(0.002)
MAJ	0.038***	0.045***	0.059***	0.055***
	(0.010)	(0.011)	(0.010)	(0.017)
PRES	-0.078***	-0.077***	-0.073***	-0.075***
	(0.018)	(0.012)	(0.016)	(0.014)
FEDERAL	0.037***	0.033***	0.027**	0.030**
	(0.009)	(0.011)	(0.012)	(0.012)
Constant	-0.485***	-0.652***	-0.487***	-0.362
	(0.057)	(0.132)	(0.060)	(0.376)
Nobs	69	69	39	39
R2	0.982	0.977	0.988	0.985
Locational and colonial controls	Yes	Yes	Yes	Yes
Sargan stat	N/A	2.312	N/A	N/A
Sargan p-value	N/A	0.315	N/A	N/A

Note: The constitution index is based on panel 4 in Table 2. In the left panel, the constitution index is instrumented with ENGFRAC, EURFRAC, and FRANKROM as in Hall and Jones (1999). In the right panel, the constitution index is instrumented with the settler mortality variable as in Acemoglu et al. (2001). Robust standard errors in parentheses. ***, ** and * indicate 1 percent, 5 percent and 10 percent significance levels, respectively.

Figure 1a: The Economic Effects of Constitutional Rules on SI-HJ

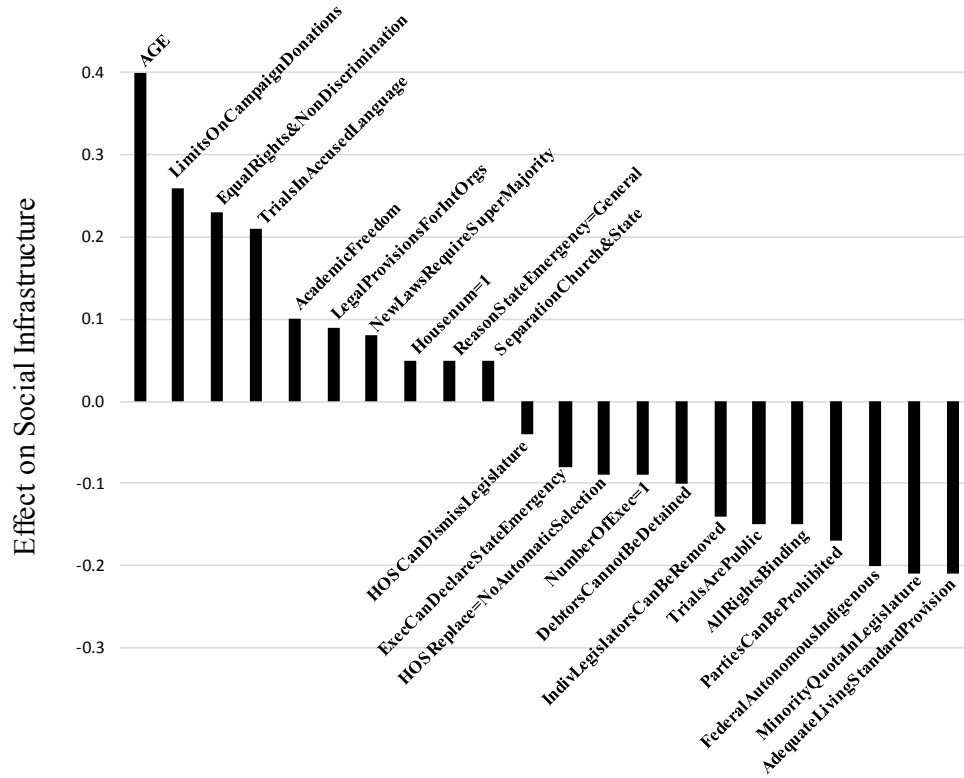(Coefficient magnitudes of effective regressors in panel 2 of Table 2)

Figure 1b: The Economic Effects of Constitutional Rules on SI-GADP

(Coefficient magnitudes of effective regressors in panel 4 of Table 2, except LATITUDE)
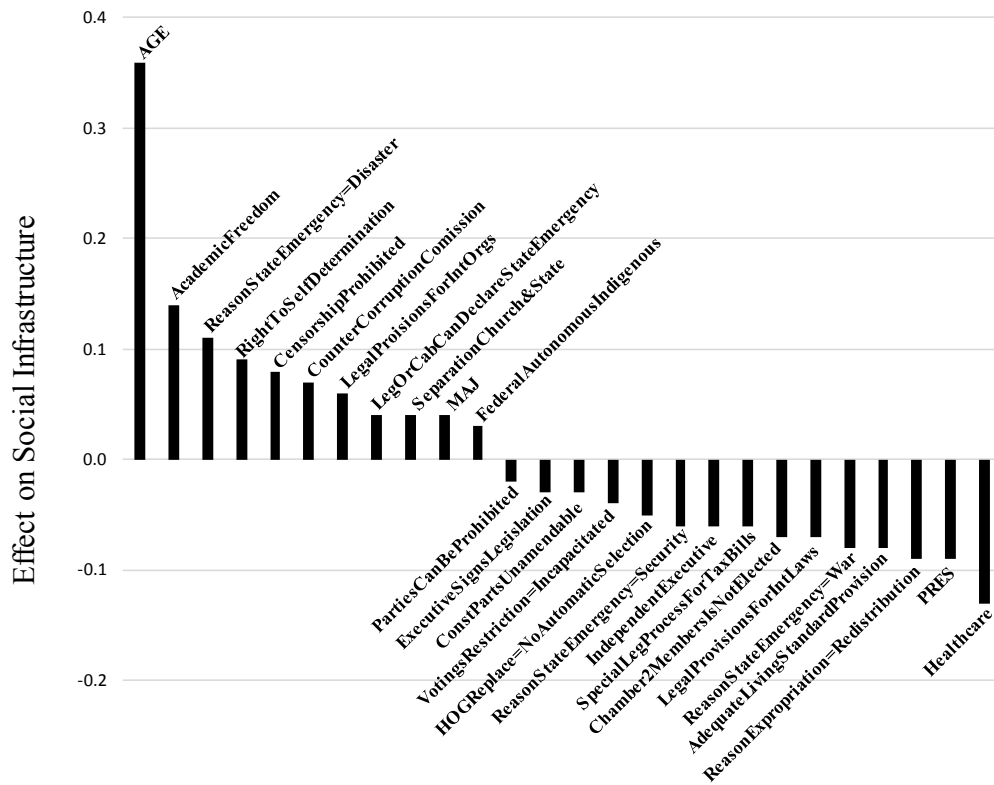
Note: Variable definitions in Table 1. SI-HJ and SI-GADP range from 0 to 1.

Figure 2a: Constitution Index (SI-HJ) and Social Infrastructure (SI-HJ)
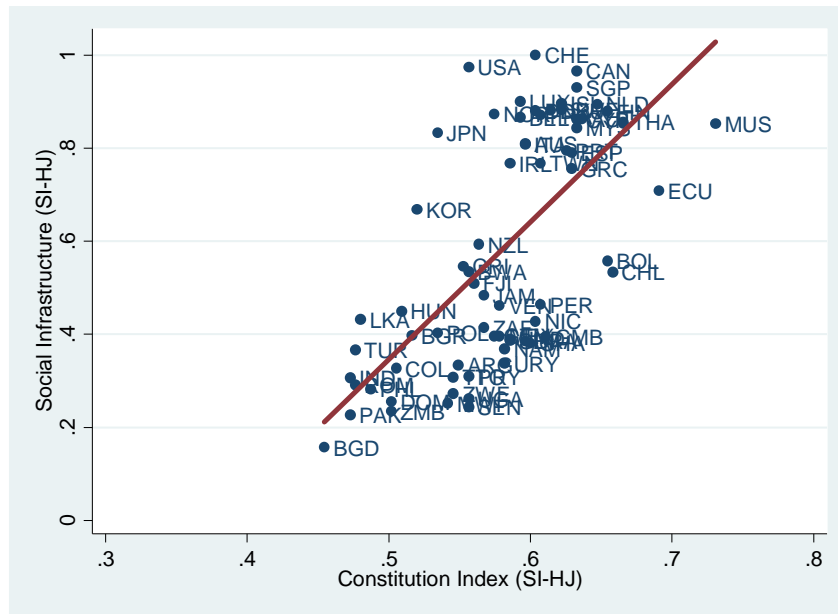
Note: The constitution index (SI-HJ) is based on the results in panel 2 of Table 2. It is composed of all effective regressors whose weights are given by their posterior means.

Figure 2b: Constitution Index (SI-GADP) and Social Infrastructure (SI-GADP)
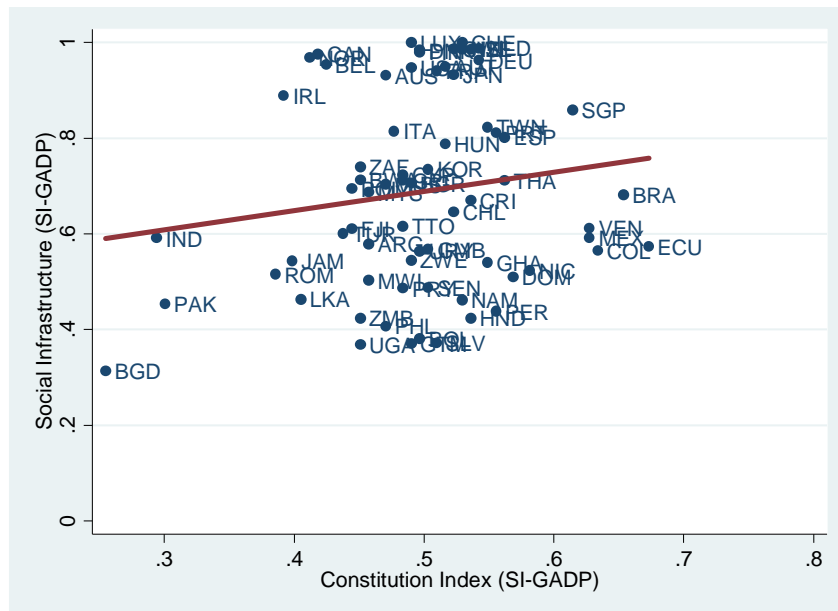
Note: The constitution index (SI-GADP) is based on the results in panel 4 of Table 2. It is composed of all effective regressors whose weights are given by their posterior means.

Appendix: Description of the Constitution Data and Additional Tables

The original 'Characteristics of National Constitutions' dataset (version 1.0) was downloaded from http://www.comparativeconstitutionsproject.org/ on January 2, 2015. It included information on the most recent constitutions in 184 countries. To conduct the empirical analysis, a number of variables needed to be recoded or dropped. Below we provide the details on the necessary changes to generate the dataset used in our analysis. The specific adjustments are programmed in the provided UNBUNDLING_DATA.do Stata file. Recoding of the original data was necessitated for seven major reasons.

I) Irrelevant Variables
A number of variables are irrelevant to our analysis, for example COWCODE (Correlates of War country code) or SOURCE ('What is the source for the text of the Constitution?'). Other variables excluded on this basis are ACCESS, AMPARO, ARMS, ASYLUM, ATTEND, CENSUS, CHILDWRK, CITDEP, CITREN, CITREV, CIVIL, CIVMAR, COLONY, COLRULE, COUNTRY, DOCS, DOCTIT, DOUBJEP, ENDYEAR, EVNTID, EVNTTYPE, EVNTYEAR, EXCRIM, FNDFAM, GRJURY, HEADFORN, HOGLEGR, HOGPARD, HOGREST, HOSDECIM, HOSREST, HOSPARD, JUDSAL, LANG, LANGSRCE, LENGTH, LHCOHORT, LHNAME, LHREST, LHTERM, LIFE, MARRIAGE, MATEQUAL, MIRANDA, MODEL, NOMIL, PREAMBLE, PREAMBW, PROFLEG, RGHTWRDS, SAMESEXM, SYSTID, SYSTYEAR, TESTATE, TRANSLAT, TREATAP, TREATINI, TREATRVW, UHNAME and UNCONPER. In addition, we dropped all variables containing detailed article listings and "additional comments."

II) Variables that Required Recoding
A number of variables are originally coded categorically. If variables are of the enumerated type, we recoded them into dichotomous (binary) variables. Details on which variables were recoded are provided in the UNBUNDLING_DATA.do Stata file. There are a number of variables which, given a large number of potential answers, cannot be grouped into binary variables. If none of the individual answers had a meaningful interpretation, we dropped the constitutional rules: CABDISS, CHALLEG, INTERP, EXSESS, EMOTHER, LEGREP and PARTUNCO.

III) Imprecise Variable Definitions
A number of variables are imprecisely defined. Their definitions typically include the terms "refer" or "mention" without further definition, for example, the variable MARKET ('Does the constitution refer to the 'free market,' 'capitalism,' or an analogous term?') – in this case 'refer' does not reveal the context of the constitutional rule (positive or negative). Variables that were excluded because their descriptions were too vague to allow for a clear binary interpretation are indicated in the UNBUNDLING_DATA.do Stata file.

IV) Variables that Lack Variation
We drop the variables PRTYDUTY, TRADEUN, HOGTRMLIM_5 and LEGISL, since they either take the value zero or one for all countries in the dataset. In addition, if a variable takes the value zero or one for just one country, it assumes the role of a fixed effect and has to be deleted, too. LHLEGIS is the only variable in our dataset which we removed for this reason.

V) Ambiguous Variable Codings
Several variables are coded ambiguously, implying unclear alternative hypotheses and interpretations of potential effects. Below we list the variables that needed to be dropped or recoded to provide a clear interpretation.
AMEND ('Does the constitution provide for at least one procedure for amending the constitution?') is deleted since it contradicts in part UNAMEND ('Are any parts of the constitution unamendable?').
CRUELTY ('Does the constitution prohibit cruel, inhuman, or degrading treatment?') is deleted for lack of an interpretation for a zero, since no country in our dataset explicitly allows cruel treatment in the constitution.
CUSTLAW2_123 ('What is the status of customary international law in the constitution?') is dropped since the answer is conditional on a positive response to CUSTLAW ('Does the Constitution refer to 'customary' international law or the 'law of nations'?'), which we exclude based on its imprecise definition, see point III) above.
FREEELEC ('Does the constitution prescribe that electoral ballots be secret?') is dropped since it is unclear whether a zero necessarily implies that elections are not free. Australia and the United States are prominent examples for countries that do not specify secret ballots in their constitution.
HOSIMM_12 ('Is the Head of State provided with absolute or limited immunity from prosecution?') is eliminated because no country in our dataset explicitly denies immunity to the head of state.

HOSTERML_5 ('Are there no restrictions in place regarding the number of terms the Head of State may serve?'), LHTRMLIM_5 ('Are there no restrictions in place regarding the number of terms members of the first (or only) chamber may serve?') and UHTRMLIM_5 ('Are there no restrictions in place regarding the number of terms members of the second chamber may serve?') are deleted since most countries do not specify term limits in their constitution, leaving us with an unclear alternative hypothesis.

INVEXE ('Does the legislature have the power to investigate the activities of the executive branch?') is replaced with LegCannotInvestigateExecutive, which only takes the value one if the constitution explicitly prohibits the legislature to investigate the activities of the executive, and zero otherwise.

INTEXEC_123 ('Does the legislature have the power to interpellate members of the executive branch, or similarly, is the executive responsible for reporting its activities to the legislature on a regular basis?') had to be dropped because the meaning of interpellate differs widely across constitutions (ranging in meaning from "has the right to submit questions" to "has the ability to schedule a vote of confidence").

JUDPREC ('Does the constitution stipulate that courts have to take into account decisions of higher courts?') is dropped because the definition does not indicate in which way higher court decisions have to be "taken into account".

JUDIND ('Does the constitution contain an explicit declaration regarding the independence of the central judicial organ(s)?') is dropped because the variable does not indicate what the declaration exactly refers to, e.g., which central judicial organs are included and whether their independence is ensured or ruled out.

OCCUPATE ('Does the constitution provide for the right to choose ones occupation?') is dropped from the dataset, since specific rights are frequently subsumed under more general statements in constitutions. For example, the US constitution contains no statement regarding "free occupational choice" (hence OCCUPATE=0), but the 9th amendment states "The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people." PRIVACY ('Does the constitution provide for a right of privacy?'), DEVLPERS ('Does the constitution provide for an individual's right to self-determination or the right to free development of personality?') and SAFEWORK ('Does the constitution mention the right to safe/healthy working conditions?') are dropped for the same reason. For example, while the US constitution makes no explicit statement regarding PRIVACY (hence PRIVACY =0), there are a number of provisions that refer to the right of privacy, such as the protection of home and property (4th amendment) or the privacy of beliefs (1st amendment).

OFFREL_3 ('Does the constitution contain provisions that specifically prohibit a national religion?') is deleted because its simultaneous inclusion with OFFREL_1 ('Does the constitution contain provisions that specify a national religion?') would imply an unclear alternative hypothesis for both variables.

PRESS ('Does the constitution provide for freedom of the press?') is deleted due to some unclear codings in the data. For instance, the current French constitution does not contain an explicit statement on the freedom of the press, implying PRESS=0. However, it declares in the preamble that the country's standard for citizens' guaranteed rights is the "The Declaration of the Rights of Man and of the Citizen of 1789", which in article 11 states that "The free expression of thought and opinions is one of the most precious rights of man: thus every citizen may freely speak, write, and print, subject to accountability for abuse of this freedom in the cases determined by law."

SLAVE ('Does the constitution universally prohibit slavery, servitude, or forced labor?') is dropped because no country in our dataset explicitly allows slavery in its constitution.

VI) Correlation

There are a number of constitutional rules that feature excessive correlations. These variables are dropped to minimize multicollinearity issues:

OVERWHO_13456 ('Can the legislature override vetoes of legislation?') is dropped due to its perfect correlation with OVERRIDE ('Can vetoes of legislation be overridden?').

UHLEGISL ('Is the Second Chamber of the Legislature given the power to legislate?') and HOUSENUM ('Does the legislature contain one chamber or house?') have a correlation coefficient of -.97; we thus eliminate UHLEGISL. In addition, HOGELECT_4 ('Is the Head of Government appointed?') is perfectly correlated with NumberOfExec=1 ('One executive is specified in the constitution.'), and the latter and HOGDISS ('Are there provisions for dismissing the Head of Government?') have a correlation coefficient of -.94. We only keep NumberOfExec=1.

EDCOMP ('Does the constitution stipulate that education be compulsory until at least some level?') and EDFREE ('Does the constitution stipulate that education be free, at least up to some level?') are combined into EDCOMPFREE given their correlation of .85. EDCOMPFFREE takes the value one if we observe a positive response for one of the variables, and zero otherwise.

ASSOC ('Does the constitution provide for freedom of association?'), EXPRESS ('Does the constitution provide for freedom of expression or speech?'), and OPINION ('Does the constitution provide for freedom of opinion,

thought, and/or conscience?') are combined for the same reasons into ASSOCEXPRESSOPINION, which takes the value one if either of the three variables features a positive response.

EXPLIM ('What limits/conditions are placed on the ability of the government to expropriate private property?') has an interpretation that is nearly identical to EXPROP ('Can the government expropriate private property under at least some conditions?'). We therefore only keep the latter variable.

VII) Variables with Conditional Codings

The coding of several variables is conditioned on other constitutional rules, which complicates their interpretation. For instance, HOGDECIM ('Which arrangement describes the implementation procedure for Head of Government decrees?') is only answered when HOGDEC ('Does the Head of Government have decree power?') takes the value one. In this case, we only keep the latter variable. Other variables excluded on this basis are DEPSEL, EDCOMPL, EDFREEL, COUNSCOS, HOGDCOND, HOGTERM, HOSDECEX, HOGDECEX, INDPOLGR, INITIATP, REMCON, JUDFIN, LEG_IN, RELLAW, INDCIT, UHQUOTAD and UHREST. Detailed information is available in the UNBUNDLING_DATA.do Stata file.

Table A.1: Unrestricted Constitution Data – Variables, Definitions and Summary Statistics

Variable	Definition (Source: CCP, 2014)	Mean	SD	Min	Max
AcademicFreedom	Does the constitution guarantee academic freedom?	0.47	0.50	0	1
ACHIGHED_2	Does the constitution guarantee equal access to higher education? 2: Yes, but qualified	0.18	0.39	0	1
AdequateLivingStandardProvision	Does the constitution provide for a right to an adequate or reasonable standard of living?	0.30	0.46	0	1
AdminCourts	For which of the following specialized courts does the constitution contain provisions? 1: administrative courts	0.38	0.49	0	1
AdoptAmendmentRequires>60%	What proportion of the vote is needed to approve a constitutional amendment? 345: 3/5 or 3/4 majority	0.07	0.26	0	1
AllRightsBinding	Are rights provisions binding on private parties as well as the state?	0.18	0.39	0	1
AMNDAMAJ	Do constitutional amendments require more than a simple majority by the legislature to be approved?	0.66	0.48	0	1
ASSEM	Does the constitution provide for freedom of assembly	0.90	0.30	0	1
ASSETS	Does the Constitution require that legislators disclose their earnings and/or assets?	0.10	0.30	0	1
ASSOCEXPRESSOPINION	Combination of ASSOC ('Does the constitution provide for freedom of association?'), EXPRESS ('Does the constitution provide for freedom of expression or speech?'), and OPINION ('Does the constitution provide for freedom of opinion, thought, and/or conscience?')	0.93	0.26	0	1
ATGEN	Does the constitution provide for an attorney general or public prosecutor responsible for representing the government in criminal or civil cases?	0.73	0.45	0	1
BANKGOAL_1	What are the policy goals of the central bank? 1: Price stability alone	0.07	0.26	0	1
BUSINES	Does the constitution provide a right to conduct/establish a business?	0.38	0.49	0	1
CAPPUN	Does the constitution universally prohibit the use of capital punishment?	0.32	0.47	0	1
CensorshipProhibited	Does the constitution prohibit censorship? 1: Yes, 2: Censorship allowed in exceptional cases (i.e. war, state of emergency, or in the interest of public safety, etc.)	0.49	0.50	0	1
CentralBank	Does the constitution contain provisions for a central bank?	0.45	0.50	0	1
Chamber2MinAge=Below22	Is the minimum age limit for eligibility to serve as a member of the Second Chamber of the Legislature 22 or under 22?	0.16	0.36	0	1
COMCHIEF_1	Who is the commander in chief of the armed forces? 1: head of state	0.73	0.45	0	1
ConstPartsUnamendable	Are any parts of the constitution unamendable?	0.28	0.45	0	1
CorporalPunishmentProhibited	Does the constitution universally prohibit the use of corporal punishment?	0.07	0.26	0	1
COUNS	Does the constitution provide the right to counsel if one is indicted or arrested?	0.65	0.48	0	1
CounterCorruptionComission	Does the constitution contain provisions for a counter corruption commission?	0.07	0.26	0	1
CULTRGHT	Does the constitution refer to a state duty to protect or promote culture or cultural rights?	0.63	0.49	0	1
DebtorsCannotBeDetained	Does the constitution forbid the detention of debtors	0.21	0.41	0	1
DEPEXEC	Does the constitution specify a deputy executive of any kind (e.g., deputy prime minister, vice president)?	0.67	0.47	0	1
DUEPROC	Does the constitution explicitly mention due process?	0.17	0.38	0	1
ECONPLAN	Does the constitution mention the adoption of national economic plans?	0.17	0.38	0	1
EDCOMPFREE	Does the constitution stipulate that education be compulsory until at least some level? Or does the constitution stipulate that education be free, at least up to some level?	0.68	0.47	0	1
EMAPPR_1	Who approves a state of emergency? 1: does not need approval	0.16	0.36	0	1
EMRIGHTS	Does the constitution provide for suspension or restriction of rights during states of emergency?	0.61	0.49	0	1
EqualRights&NonDiscrimination	Does the constitution refer to equality before the law, the equal rights of men, or non-discrimination?	0.96	0.21	0	1
ETHINCL	Does the constitution contain provisions concerning national integration of ethnic communities?	0.27	0.45	0	1
EXAMWIT_3	Does the constitution provide for the right to examine evidence or confront all witnesses? 3: both	0.06	0.24	0	1
ExecCanDeclareStateEmergency	Who can declare state of emergency? 1: head of state, 3: either head of state or head of government	0.61	0.49	0	1
ExecutiveSignsLegislation	Which of the following describes the default mode for the approval of legislation? 4: Executive is required to take action: either sign/promulgate or return to the legislature	0.37	0.49	0	1
EXPCOND_137	Under what conditions or for what purposes can the state expropriate private property? 1: Infrastructure, public works, 3: national defense, 7: general public purpose	0.66	0.48	0	1
EXPOST	Does the constitution prohibit punishment by laws enacted ex post facto?	0.79	0.41	0	1
EXPRCOMP_1234	What is the specified level of compensation for expropriation of private property? 1: fair/just, 2: full, 3: appropriate, 4: adequate	0.55	0.50	0	1
EXPROP	Can the government expropriate private property under at least some	0.87	0.34	0	1

46

Variable	Definition (Source: CCP, 2014)	Mean	SD	Min	Max
	conditions?				
FairTrial	Does the constitution provide the right to a fair trial?	0.47	0.50	0	1
FalseImprisonmentRedress	Does the constitution provide for the right of some redress in the case of false imprisonment, arrest, or judicial error?	0.37	0.49	0	1
FederalAutonomousIndigenous	Does the constitution recognize any of the following subnational governments? 3: Autonomous Indigenous Groups	0.13	0.34	0	1
FederalLocal	Does the constitution recognize any of the following subnational governments? 1: Local/Municipal Government	0.75	0.44	0	1
FederalState/Region	Does the constitution recognize any of the following subnational governments? 2: Subsidiary units (regions, states, or provinces)	0.62	0.49	0	1
FEDREV	Does the constitution contain provisions allowing review of the legislation of the constituent units in federations by federal judicial or other central government organs?	0.17	0.38	0	1
FEDUNIT_12	Is the state described as either federal, confederal, or unitary? 1: federal, 2:confederal	0.17	0.38	0	1
FEDUNIT_3	Is the state described as either federal, confederal, or unitary? 3: unitary	0.23	0.42	0	1
FREECOMP	Does the constitution provide the right to a free and/or competitive market?	0.21	0.41	0	1
FREEMOVE	Does the constitution provide for freedom of movement?	0.83	0.38	0	1
FREEREL	Does the constitution provide for freedom of religion?	0.94	0.24	0	1
GOVMED_2	How does the constitution address the state operation of print or electronic media? 2: State can operate media outlets	0.14	0.35	0	1
Healthcare	Does the constitution mention the right to health care?	0.38	0.49	0	1
HEALTHF	Does the constitution specify that healthcare should be provided by government free of charge?	0.18	0.39	0	1
HigherEducation	Does the constitution guarantee equal access to higher education? 1: Yes	0.17	0.38	0	1
HOGDEC	Does the Head of Government have decree power?	0.14	0.35	0	1
HOGIMM_2	Is the Head of Government provided with immunity from prosecution? 2: Yes, limited immunity	0.10	0.30	0	1
HOGReplace=NoAutomaticSelection	Should the head of government need to be replaced before the normally scheduled replacement process, what is the process of replacement? 1: The normal selection process (whether it be election or appointment) is implemented, 2: The legislature appoints a successor	0.24	0.43	0	1
HOSCanDismissLegislature	Who, if anybody, can dismiss the legislature? 1: head of state	0.59	0.50	0	1
HOSDCOND_2	Under what grounds can the head of state be dismissed? 2: crimes and other issues of conduct	0.52	0.50	0	1
HOSDCOND_3	Under what grounds can the head of state be dismissed? 3: treason	0.21	0.41	0	1
HOSDCOND_5	Under what grounds can the head of state be dismissed? 5: incapacitated	0.35	0.48	0	1
HOSDEC	Does the Head of State have decree power?	0.55	0.50	0	1
HOSDISS	Are there provisions for dismissing the Head of State?	0.82	0.39	0	1
HOSELECT_1	How is the Head of State selected? 1: heredity/royal selection	0.17	0.38	0	1
HOSELECT_2	How is the Head of State selected? 2: elected by citizens	0.56	0.50	0	1
HOSELECT_3	How is the Head of State selected? 3: elected by elite group	0.24	0.43	0	1
HOSELSYS_1	Which of these best categorizes the electoral system for the Head of State? 1: plurality	0.09	0.28	0	1
HOSElection=Majority	Which of these best categorizes the electoral system for the Head of State? 4: Majority, unspecified, 5: Majority, alternative vote method, 6: Majority, by two round method with popular run-off, 7: Majority, by two round method with assembly run-off	0.39	0.49	0	1
HOSReplace=NormalSelection	Should the head of state need to be replaced before the normally scheduled replacement process, what is the process of replacement? 1: normal selection process (whether it be election or appointment) is implemented	0.37	0.49	0	1
HOSSUCC_2	Should the head of state need to be replaced before the normally scheduled replacement process, what is the process of replacement? 2: the legislature appoints a successor	0.06	0.24	0	1
HOSSUCC_4	Should the head of state need to be replaced before the normally scheduled replacement process, what is the process of replacement? 4: A predetermined line of succession is followed	0.45	0.50	0	1
HOSTERM_UNDER5	Is the maximum term length of the Head of State 5 years or under?	0.63	0.49	0	1
Housenum=1	Does the Legislature contain one chamber?	0.48	0.50	0	1
HR	Does the constitution contain provisions for a human rights commission?	0.16	0.36	0	1
IMMUNITY_2	Does the constitution provide for immunity for the members of the Legislature under some conditions? 2: limited immunity	0.79	0.41	0	1
IndependentExecutive	Does the constitution contain an explicit declaration regarding the INDEPENDENCE of the central executive organ(s)?	0.13	0.34	0	1
IndivLegislatorsCanBeRemoved	Are there provisions for removing individual legislators?	0.72	0.45	0	1
INFOACC	Does the constitution provide for an individual right to view government files or documents under at least some conditions?	0.35	0.48	0	1
INITIAT	Does the constitution provide for the ability of individuals to propose legislative	0.31	0.47	0	1

Variable	Definition (Source: CCP, 2014)	Mean	SD	Min	Max
	initiatives (referenda from below)?				
INTPROP_1234	Does the constitution mention any of the following intellectual property rights? 1: patents, 2: copyrights, 3: trademark, 4: general reference to intellectual property	0.44	0.50	0	1
JC	Does the constitution contain provisions for a Judicial Council/Commission?	0.63	0.49	0	1
JOINTRDE	Does the constitution provide for the right to form or to join trade unions?	0.73	0.45	0	1
JREM	Are there provisions for dismissing judges?	0.82	0.39	0	1
JUDCRTS_2	For which of the following specialized courts does the constitution contain provisions? 2: constitutional court	0.37	0.49	0	1
LegalProvisionsForIntLaws	Does the constitution contain provisions concerning the relationship between the constitution and international law?	0.76	0.43	0	1
LegalProvisionsForIntOrgs	Does the constitution contain provisions concerning international organizations?	0.63	0.49	0	1
LEGAPP_1	Who has the power to approve/reject legislation once it has been passed by the legislature (not including reviews for constitutionality)? 1: Head of State	0.86	0.35	0	1
LEGAPPPT_123	Does the approving/vetoing actor have the power to approve/reject parts of the bill, the bill in its entirety, or both? 1: Can only veto parts of the bill (line-item veto), 2: Can only veto the bill in its entirety, 3: Can veto either specific parts or the bill in its entirety	0.41	0.50	0	1
LegCannotInvestigateExecutive	Does the legislature not have the power to investigate the activities of the executive branch?	0.06	0.24	0	1
LegChamber1IsElected	Does the constitution specify the electoral system for the first (or only) chamber? 1: Yes, one method, 2: Yes, two methods (a mixed system)	0.47	0.50	0	1
LegChamber2IsElected	Does the constitution specify the electoral system for the Second Chamber? 1: Yes, one method, 2: Yes, two methods (a mixed system), 3: Yes, but without providing any specific details	0.20	0.40	0	1
LegDeclaresWar	Who has the power to declare war? 4: First (or only) Chamber of the Legislature, 7: Both Chambers, acting jointly	0.20	0.40	0	1
LegOrCabCanDeclareStateEmergency	Who can declare a state of emergency? 4: government/cabinet, 5: first (or only) chamber of the legislature, 7: both chambers of the legislature are required	0.12	0.32	0	1
LHSELECT_3	How are members of the first (or only) chamber of the Legislature selected? 3: elected by citizens	0.97	0.17	0	1
LIBEL	Does the constitution provide for the right of protection of one's reputation from libelous actions?	0.31	0.47	0	1
LimitsOnCampaignDonations	Are there any provisions for limits on money used for campaigns?	0.12	0.32	0	1
MEDCOM	Does the constitution mention a special regulatory body/institution to oversee the media market?	0.16	0.36	0	1
MEDMARK_12345	Does the constitution mention any of the following general principles about the operation of the media market? 1: no monopoly or oligopoly, 2: competitive, 3: pluralism, 4: balanced, 5: fair	0.20	0.40	0	1
MinorityQuotaInLegislature	Does the constitution stipulate a quota for representation of certain groups in the Second Chamber?	0.09	0.28	0	1
NewLawsRequireSuperMajority	Is a supermajority needed for passing any legislation?	0.27	0.45	0	1
NoUnjustifiedRestraint	Does the constitution provide for the right to protection from unjustified restraint (habeas corpus)?	0.85	0.36	0	1
NumberOfExec=1	One executive is specified in the constitution.	0.44	0.50	0	1
OFFREL_1	Does the constitution contain provisions concerning a national or official religion or a national or official church? 1: Yes, national religion specified	0.16	0.36	0	1
Opportunity	Does the constitution provide for positive obligations to transfer wealth to, or provide opportunity for, particular groups?	0.18	0.39	0	1
OVERPCT 2_3_3_5	What proportion of the vote is needed to override a veto? 2_3: 2/3 majority, 3_5: 3/5 majority	0.32	0.47	0	1
OVERPCT_1_2	What proportion of the vote is needed to override a veto? 1: Plurality, 2: majority	0.17	0.38	0	1
OVERRIDE	Can vetoes of legislation be overridden?	0.63	0.49	0	1
OVERSGHT_123	Does the constitution provide for an electoral commission or electoral court to oversee the election process? 1: electoral commission, 2: electoral court, 3: both	0.61	0.49	0	1
PartiesCanBeProhibited	Does the constitution prohibit one or more political parties? 2: Yes, certain parties, 3: Yes, certain types of parties	0.24	0.43	0	1
PARTRGHT	Does the constitution provide for a right to form political parties?	0.48	0.50	0	1
PREREL	Does the constitution provide for the right/possibility of pre-trial release?	0.41	0.50	0	1
PRESINOC	Is there a presumption of innocence in trials?	0.58	0.50	0	1
PROPRGHT	Does the constitution provide for a right to own property?	0.78	0.42	0	1
ProtectionAgainstGovernment	Does the constitution contain provisions protecting the individual against illegal or ultra-vires administrative actions?	0.34	0.48	0	1
PROVHLTH	Does the constitution mention a state duty to provide health care?	0.37	0.49	0	1
PUBMEET	Does the constitution prescribe whether or not the meetings of the Legislature are (generally) held in public?	0.45	0.50	0	1
PUBMIN	Is a record of the deliberations of the Legislature published?	0.18	0.39	0	1

Variable	Definition (Source: CCP, 2014)	Mean	SD	Min	Max
ReasonExpropriation=Redistribution	Under what conditions or for what purposes can the state expropriate private property? 2: redistribution to other citizens, 4: land, natural resource preservation, 5: exploitation of natural resources, 6: land reform	0.16	0.36	0	1
ReasonHOSDismissal=Unrestricted	Under what grounds can the Head of State be dismissed? 1: general dissatisfaction with the leadership (i.e., dismissal is fairly unrestricted)	0.09	0.28	0	1
ReasonHOSDismissal=Violation	Under what grounds can the head of state be dismissed? 4: violations of the constitution	0.39	0.49	0	1
ReasonStateEmergency=Disaster	Under which of the following circumstances can a state of emergency be called? 3: national disaster	0.34	0.48	0	1
ReasonStateEmergency=Econ	Under which of the following circumstances can a state of emergency be called? 5: economic emergency	0.13	0.34	0	1
ReasonStateEmergency=General	Under which of the following circumstances can a state of emergency be called? 4: general danger	0.38	0.49	0	1
ReasonStateEmergency=Security	Under which of the following circumstances can a state of emergency be called? 2: internal security	0.45	0.50	0	1
ReasonStateEmergency=War	Under which of the following circumstances can a state of emergency be called? 1: war/aggression	0.49	0.50	0	1
REFEREN	Does the constitution provide for the ability to propose a referendum (or plebiscite)?	0.65	0.48	0	1
RELTAX	Are religious organizations granted tax free status?	0.10	0.30	0	1
REMUNER	Does the constitution provide the right to just remuneration, fair or equal payment for work?	0.45	0.50	0	1
RGHTAPP	Do defendants have the right to appeal judicial decisions?	0.29	0.46	0	1
RightToSelfDetermination	Does the constitution provide for a people's right of self-determination?	0.17	0.38	0	1
RuleOfLaw(GermanRechtsStaat)	Does the constitution contain a general statement regarding rule of law, legality, or Rechtsstaat (the German equivalent)?	0.41	0.50	0	1
ScientificProgress	Does the constitution provide for a right to enjoy the benefits of scientific progress?	0.13	0.34	0	1
SeparationChurch&State	Does the constitution contain an explicit decree of separation of church and state?	0.23	0.42	0	1
SHELTER	Does the constitution provide for the right to shelter or housing?	0.32	0.47	0	1
SpecialLegProcessForBudgetBills	Does the constitution provide for any of the following special legislative processes? 2: budget bills	0.79	0.41	0	1
SpecialLegProcessForSpendingBills	Does the constitution provide for any of the following special legislative processes? 5: spending bills	0.32	0.47	0	1
SpecialLegProcessForTaxBills	Does the constitution provide for any of the following special legislative processes? 3: tax bills	0.62	0.49	0	1
SPECLEG_1	Does the constitution provide for any of the following special legislative processes? 1: organic law	0.21	0.41	0	1
SPECLEG_4	Does the constitution provide for any of the following special legislative processes? 4: finance bills	0.44	0.50	0	1
SPEEDTRI	Does the constitution provide for the right to a speedy trial?	0.54	0.50	0	1
STRIKE_12	Does the constitution provide for a right to strike? 1: Yes, 2: Yes, but with limitations	0.48	0.50	0	1
Taxes	Does the constitution refer to a duty to pay taxes?	0.31	0.47	0	1
TERR	Does the constitution define the geographic borders/territory of the state?	0.18	0.39	0	1
TORTURE_12	Does the constitution prohibit torture? 1: Universally Prohibited, 2: Prohibited Except in the Case of War	0.69	0.47	0	1
TrialsArePublic	Does the constitution generally require public trials?	0.65	0.48	0	1
TrialsInAccusedLanguage	Does the constitution specify the trial has to be in a language the accused understands or the right to an interpreter if the accused cannot understand the language?	0.38	0.49	0	1
UHSELECT_1	How are members of the Second Chamber selected? 1: appointed	0.16	0.36	0	1
UHSELECT_2	How are members of the Second Chamber selected? 2: elected by electors	0.16	0.36	0	1
UHSELECT_3	How are members of the Second Chamber selected? 3: elected by citizens	0.27	0.45	0	1
UHTERM_3_5	Is the maximum term length for members of the Second Chamber of the Legislature between 3 and 5 years?	0.24	0.43	0	1
UniversalSuffrage	Does the constitution make a claim to universal adult suffrage?	0.56	0.50	0	1
VOTERES	Does the constitution place any restrictions on the right to vote?	0.90	0.30	0	1
VotingRestriction=Incapacitated	Besides age limits, which additional restrictions does the constitution place on voting? 1: must not be incapacitated (mentally or physically)	0.31	0.47	0	1
WAR_13	Who has the power to declare war? 1: head of state, 3: the government/cabinet	0.42	0.50	0	1
WOLAW	Does the constitution mention nulla poena sine lege or the principle that no person should be punished without law?	0.61	0.49	0	1
WORK	Does the constitution refer to a duty to work?	0.27	0.45	0	1
Note: There are 69 observations. If answer to question is YES, dummy variables take value 1, and 0 otherwise.					

Table A.2: Replicating Hall and Jones & Persson and Tabellini Results

| Variable | Dependent Variable: Hall and Jones (1999) Social Infrastructure | | | |
| | Hall and Jones Specification | | Hall and Jones + Persson and Tabellini Specification | |
	Hall and Jones	Our Sample	Persson and Tabellini	Our Sample
FRANKROM	0.058**	0.064*	0.081***	0.073**
	(0.023)	(0.036)	(0.030)	(0.030)
ENGFRAC	0.118	0.105	-0.106	-0.149
	(0.086)	(0.114)	(0.109)	(0.132)
EURFRAC	0.130***	0.072	0.111	0.125*
	(0.045)	(0.062)	(0.072)	(0.072)
LATITUDE	0.708***	0.650***	-0.036	-0.132
	(0.098)	(0.153)	(0.224)	(0.227)
PARL_DEMOC			0.008	0.012
			(0.022)	(0.019)
PRES			-0.004	0.019
			(0.187)	(0.161)
MAJ			0.031	0.031
			(0.066)	(0.068)
AGE			0.414***	0.440***
			(0.120)	(0.129)
FEDERAL			0.062	0.050
			(0.054)	(0.055)
AFRICA			-0.158	-0.211
			(0.139)	(0.157)
ASIAE			0.012	-0.027
			(0.136)	(0.163)
LAAM			-0.216**	-0.234**
			(0.098)	(0.105)
COL_ESPA			-0.062	-0.063
			(0.213)	(0.243)
COL_OTHA			-0.107	-0.036
			(0.092)	(0.114)
COL_UKA			-0.111	-0.057
			(0.117)	(0.147)
Constant	0.079	0.153	0.310	0.327
	(0.068)	(0.102)	(0.229)	(0.226)
Nobs	127	69	72	69
R2	0.409	0.336	0.636	0.641

Note: We use both the Hall and Jones (1999) and Persson and Tabellini (2003) data. The number of observations in our sample is thus the intersection of the two. Robust standard errors in parentheses. ***, ** and * indicate 1 percent, 5 percent and 10 percent significance levels, respectively.

Table A.3: Countries in Sample

Argentina, Australia, Austria, Bangladesh, Belgium, Bolivia, Botswana, Brazil, Bulgaria, Canada, Chile, Colombia, Costa Rica, Cyprus (G), Denmark, Dom. Republic, Ecuador, El Salvador, Fiji, Finland, France, Gambia, Germany, Ghana, Greece, Guatemala, Honduras, Hungary, Iceland, India, Ireland, Italy, Jamaica, Japan, Luxembourg, Malawi, Malaysia, Mauritius, Mexico, Namibia, Netherlands, New Zealand, Nicaragua, Norway, Pakistan, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Senegal, Singapore, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Thailand, Trinidad & Tobago, Turkey, Uganda, United States, Uruguay, Venezuela, Zambia, Zimbabwe