

# Constitutional Rules as Determinants of Social Infrastructure

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## **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 different political institutions as driving forces of social infrastructure but previous empirical studies had to rely on small sets of broad political proxies, raising questions as to which political institutions matter when a particular variable is found to be significant. In this paper, we leverage a new dataset that codes a comprehensive set of 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 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 just the structure of electoral systems matter, but also 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 discussed in the literature to date.

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## 1. Introduction

Hall and Jones (1999) argue that advanced countries are richer because the productivity of their factors of production is driven by better *social infrastructure*.<sup>1</sup> Their proposed index of social infrastructure has become an iconic variable in the development accounting literature, having been cited in well over 8000 publications. Given the strong explanatory power of social infrastructure (Hall and Jones document it explains at least 70% of the differences in output per worker across countries), a literature has sprung to untangle the precise determinants of social infrastructure itself. These determinants focus on *political institutions* as “differences in institutions originating from different types of states” are thought to be a fundamental driver of development outcomes (Acemoglu et al., 2001, p. 1378). The aim of this paper is to illuminate how variations in the constitutions of states affect social infrastructure to further our understanding of the sources of development.

Acemoglu et al. (2001) first suggested that constitutionally-specified constraints affect social infrastructure, while Persson and Tabellini (2003) maintain that constitutional features such as electoral rules (proportional vs. majoritarian representation) or forms of government (presidential vs. parliamentary democracies) determine the quality of social infrastructure. The subsequent literature that assessed the exact determinants of social infrastructure encountered two obstacles. First, the empirical results were sensitive to the types of constitutional proxies employed. Second, many of the proxies were indirectly/subjectively constructed and they covered a range of political institutions. Hence, even if a proxy was found to be significant, it was difficult to disentangle the exact political institution that exerted an effect. In this paper, we use a novel dataset that directly codes all political institutions covered in constitutions to understand each individual institution’s effect on social infrastructure. We also employ a statistical methodology specifically designed to address model uncertainty, which is the presence of a large number of competing theories that motivate a wide range of candidate regressors.

Our data is based on the comprehensive information provided by the Comparative Constitutions Project ([comparativeconstitutionsproject.org](http://comparativeconstitutionsproject.org)) which we recode to identify over 150

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<sup>1</sup> 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.

constitutional dimensions in a global sample of countries. While the 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 if the traditional dichotomy between presidentialism and parliamentarism captures key features of constitutions.<sup>2</sup> Not only is the data much more specific and detailed than any other political institutions data previously employed in economics, but it also includes a wealth of constitutional features that go beyond the aspects traditionally considered by economists. The dataset covers specific provisions regarding legislative rules and executive constraints, as well as exhaustive information relating to individual and economic rights. These rights have received little attention to date as determinants of social infrastructure, yet they are important features of the political context that shape voter participation and preferences which could affect in turn the quality of social infrastructure. Our detailed constitution data also includes fundamental electoral rights which, as suggested by Besley et al. (2010), can influence economic outcomes through political competition.

We find that the inclusion of detailed constitutional dimensions substantially improves the fit of social infrastructure regressions compared to previous work. Moreover, once we account for detailed constitutional rules, the broad proxies employed by the previous literature lose their effect, with the exception of the age of democracy variable.<sup>3</sup> Our findings imply that the power of general, subjectively coded proxies is instead attributed to much more specific and fundamental determinants of social infrastructure once we account for precise constitutional conditions. For example, the explanatory power of broad proxies for electoral systems and executive constraints is now absorbed by specific constitutional rules, such as the freedom to form parties, restrictions on campaign contributions, and detailed provisions on how presidents and legislators may be investigated and held accountable for constitutional transgressions.

Most importantly, our results provide further support that executive constraints are crucial determinants of social infrastructure. While the previous literature focuses on a broad proxy that represents executive-recruitment competition, we find no support for this particular type of executive constraint. Instead, we identify constitutional provisions relating to expedient

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<sup>2</sup> See, amongst others, Melton et al. (2013), Ginsburg and Simpser (2013), Cheibub et al. (2014), and Melton and Ginsburg (2014).

<sup>3</sup> The most prominent measures used in the literature include geographic and linguistic proxies (e.g., latitude and languages backgrounds) as well as constitutional context proxies (e.g., regime or electoral system types, and the degree of executive constraints); see Hall and Jones (1999) and Persson and Tabellini (2003).

executive replacement procedures as a key determinant of high-quality social infrastructure. According to our results, the most effective drivers of social infrastructure are, however, constitutional constraints on the executive's authority such as the power to declare a state of emergency and the ability of the legislature to investigate the executive.

As previously indicated, our approach also reveals an entirely novel set of social infrastructure determinants: constitutionally guaranteed individual rights. In particular, equality before the law, the separation of church and state, and intellectual freedoms are all systematically linked with better social infrastructure. In contrast, constitutional rights that are associated with economic entitlements (e.g., a guaranteed living standard) lead to worse social infrastructure. Similarly, we find that constitutional provisions which increase the accessibility of the judiciary, such as the requirement that trials have to be conducted in a language the accused understands and the right to redress for false imprisonment, are crucial for developing social infrastructure.

A major methodological difficulty in the literature examining the drivers of social infrastructure is model uncertainty, which is the empirical challenge of encountering competing theories that suggest a multitude of distinct determinants. In this case, traditional regression analysis inflates significance levels since it ignores the associated uncertainty surrounding the validity of any given empirical specification. To address model uncertainty, we employ Bayesian Model Averaging (BMA), an econometric technique which has previously been extensively employed in the development and growth context as well as in political science (see, e.g. Montgomery and Nyhan, 2010, and Montgomery et al., 2012).<sup>4</sup> Raftery and Zheng (2003) prove that BMA maximizes predictive performance while minimizing the total error rate compared to any individual model. The approach is also attractive in our application as many of the proposed theories have rather poorly defined empirical counterparts. For instance, the substantial theoretical literature on the importance of executive constraints does not specify which particular constraints are relevant.

As mentioned above, we are not the first to examine the determinants of social infrastructure. The literature commenced with Mauro (1995) who identified the effects of

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<sup>4</sup> In the growth and development context, see 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). Additional BMA applications in economics include 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.

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’ trade 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. The Hall and Jones social infrastructure index has since become the benchmark in the economics literature.

The idea of political rules, anchored in constitutions, as determinants of social infrastructure was first explored by Persson and Tabellini (2003) and Persson (2004). They regressed Hall and Jones’ (1999) social infrastructure measure on constitutional proxies of democratic regimes (presidential versus parliamentary), electoral rules, and an age of democracy variable. Other constitutional features 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.<sup>5</sup> Our analysis provides one step forward in understanding the mechanism behind this correlation.

The remainder of the paper is organized as follows. Section 2 discusses existing explanations of the impact of constitutional rules on social infrastructure. 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**

Two central elements have emerged in the literature linking the effects of constitutional rules to the quality of social infrastructure: *political accountability* and *representativeness*.<sup>6</sup> Accountability implies that voters can identify the policy makers responsible for policy choices.

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<sup>5</sup> Barro’s civil liberties indicator is an aggregated index that combines proxies for free speech, the right to organize or demonstrate, and the right to personal autonomy (freedom of religion, education, travel, and other personal rights) as specified by Gastil (1986–87).

<sup>6</sup> See, for example, Persson and Tabellini (2003, 2004), Cervellati et al. (2006), and Acemoglu and Robinson (2008).

The threat of being voted out of office is thought to discipline executives and legislators resulting in decreased corruption and better public policy. Representativeness, on the other hand, indicates whether policy choices account for the preferences of large voter shares instead of minorities. Greater representativeness is thought to generate policies that benefit the broad population through increased public goods provision while lowering the risk of providing favors to minorities of the electorate.

Representativeness is influenced by electoral rules and the resulting forms of government, and the literature mainly focuses on proxies such as district size or electoral formulas (plurality versus proportional) to capture this notion.<sup>7</sup> Proportional representation is thought to result in policies that better represent voters' preferences, while plurality implies greater accountability since it is easier to identify who is responsible for legislation when two rather than many parties occupy the legislative chambers. However, proportional representation has been argued to lead to higher taxation and public spending as a result of negotiations and coalition formation within the legislature. As a result, the impact of proportional representation on social infrastructure is ambiguous. More fundamental features of electoral rules reference the freedom to form parties, competitive elections through donation limits, and the protection of voting rights. These rules have received little attention in the literature although they are likely to be important factors for eventual policy choices. Besley et al. (2010) discuss, for example, the impact of voting rights on electoral competition and its link to policy outcomes.

Accountability, on the other hand, is thought to be shaped by the form of government, in particular by the choice between a parliamentary and a presidential regime. Presidential regimes are considered to be more accountable as they concentrate executive powers in a single office and usually exhibit strong separation of powers through checks and balances. As a result, presidential regimes are expected to feature less rent extraction and better policies. Yet, identifying such an effect has proven elusive in the empirical literature; see Persson and Tabellini (2003). Parliamentary democracies, on the other hand, require cabinets and the confidence of a legislative majority. The confidence requirement fosters legislative cohesion and thus the pursuit of general interest policies and less targeted spending. From this perspective, presidential

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<sup>7</sup> Persson and Tabellini (2003) provide an overview. Persson et al. (2007) consider the effects of electoral formulas.

regimes may be more prone to corruption and preferential treatment of minority interest groups, which again renders ambiguous predictions.

The most prominent determinants of social infrastructure with regard to accountability are proxies for constitutionally imposed executive constraints. These may be direct constraints (impeachment, term limits, separation of military and government) or they can be implicit in decree powers (e.g., limits on state of emergency declarations). Executive constraints are also commonly related to the competition in the executive's recruitment process and/or decision rules that limit the power of the executive, where increased competition and checks and balances are thought to improve social infrastructure.<sup>8</sup>

In contrast, up to now, the literature on the determinants of social infrastructure has largely abstracted from individual rights and judiciary characteristics. Civil liberties are often 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 influence both political institutions and determine social infrastructure through political competition and participation. These rights are also directly anchored in many constitutions. Since our dataset contains a plethora of rights, we introduce their effects to the literature. Using our empirical approach, we can untangle their individual effects on social infrastructure, without needing to bundle different measures in a broad civil rights proxy.

Finally, it has been shown that legislative power is linked to democratization and political stability (Barro, 1999). Stronger and more independent legislatures are thought to increase an executive's accountability through better checks and balances. Similarly, the literature emphasizes that a more equal distribution of power within countries via federal structures provides better protections of rights and representation (Persson and Tabellini, 1996). Persson and Tabellini (2003) suggest, however, that federalism may also lead to less accountability and more corruption, implying an ambiguous relationship between the quality of social infrastructure and constitutional rules that strengthen federalism.

Below we consider the actual written constitutional rules that relate to accountability and representativeness and examine their link to social infrastructure. We use detailed data on specific constitutional provisions that cover executive constraints, civil liberties, legislative

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<sup>8</sup> See Besley and Case (1995) on term limits, and Besley et al. (2010) on electoral competition.

powers, forms of government, and electoral rules to examine their effects on the quality of social infrastructure. To disentangle the impact of this exhaustive collection of constitutional regressors and to account for the associated model uncertainty, we employ Iterative Bayesian Model Averaging. The next section lays out the IBMA methodology and discusses its particular usefulness in the context of our research question.

### **3. Empirical Methodology: Juxtaposing Theories and Their Candidate Regressors**

The juxtaposition of diverse constitutional theories in order to elicit their predicted impact on social infrastructure poses an empirical challenge, especially when we contrast the effects of variables compiled from different data sources (primary and subjectively coded data). In the presence of competing theories and/or a multitude of alternative regressors, researchers encounter model uncertainty which inflates confidence intervals (Raftery, 1995). We therefore employ below Bayesian Model Averaging (BMA) which is specifically designed to address the model uncertainty surrounding any particular theory. 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 it 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  $X_1, X_2, X_3, \dots, X_k$  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  $X_1, \dots, X_p$  of the regressor space  $X_1, X_2, X_3, \dots, X_k$ , and let a candidate model be

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



where  $\beta_1, \beta_2, \dots, \beta_p$  are the coefficients to be estimated,  $\alpha$  is a constant and  $\varepsilon$  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  $\beta_r$ , as well as each model's posterior probability,  $P(M_m|D)$ . The second step consists of combining all posterior distributions from the  $\bar{m}$  models which include regressor  $r$  into the weighted averaged posterior distribution,  $P(\beta_r|D)$ , using as weights each model's posterior probability:

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

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:

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

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:

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

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

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  $r$ :

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

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

Our dependent variable is the social infrastructure index proposed by Hall and Jones (1999). Persson and Tabellini (2003) label the same index “structural policy” and variants of this index represent the most widely used measure of the quality of social infrastructure in the literature (see also Rodrik et al., 2004, and Acemoglu et al., 2001, 2002).<sup>9</sup> Alternative measures of social infrastructure have 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).

##### 4.1 Previous Determinants of Social Infrastructure

Measuring social infrastructure is not straightforward, and part of the contribution of Hall and Jones (1999) is that their index captures several appealing features for economists. The Hall and Jones index is an average of ‘government anti diversion policy’ measures (GADP) and an index of openness. The latter is measured by the Sachs and Warner (1995) index of openness to trade

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<sup>9</sup> Note that while Acemoglu et al. (2001, 2002) and Acemoglu and Robinson (2012) investigate the determinants of social infrastructure, they only focus on former colonies. Their proxy for social infrastructure, settler mortality, is therefore not included below.

which captures the extent to which a country is integrated into the world economy.<sup>10</sup> Greater integration is interpreted as a constraint on the government's capacity to interfere with market outcomes. GADP combines measures of law and order, bureaucratic quality, corruption, risk of expropriation, and government repudiation of contracts, where higher values imply more efficient markets. Social infrastructure is thought to affect output through two channels. On the one hand, the absence of crime or expropriation increases the return to investment; on the other hand, fewer rent-seeking activities incentivize agents to move from diversionary employment to productive activities, thus increasing output.

The Hall and Jones social infrastructure index has proven to be phenomenally successful at explaining cross-country differences in per capita output, which in turn has raised the question about the fundamental determinants of social infrastructure itself. Hall and Jones (1999) suggested Western European influence as a crucial determinant of social infrastructure, and introduce as proxies two language variables: the fraction of a country's population speaking a Western European language as a mother tongue (EURFRAC), and the fraction speaking English as a mother tongue (ENGFRAC). 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 implies distortive trade policies that generate political rents and breed corruption.

Acemoglu et al. (2005, p. 386) formally propose a hierarchy of institutions where political institutions (constitutions) set the stage for social infrastructure: "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." This notion has motivated much of the extensive literature examining the impact of formal political constraints on social infrastructure since then. Persson and Tabellini (2003) consider five constitutional rules as determinants of social infrastructure. First, they hypothesize that more

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<sup>10</sup> The Sachs-Warner index includes average tariff rates, non-tariff barriers, black market exchange rates, and the presence of export marketing boards.

mature democracies adopt systematically different policies as it takes time to build public goods such as pension systems. Older democracies might also have a better system of checks and balances to fight corruption and abuse of power. Hence, the age of a democracy (AGE) is expected to positively affect social infrastructure.<sup>11</sup> Second, an indicator of federalism (FEDERAL) is included, which is expected to induce a more equal treatment and improved economic outcomes across different regions (see Persson and Tabellini, 1996). Third is an electoral measure, majoritarian rule (MAJ), which takes the value one when the lower house is elected under plurality rule and zero if it is majoritarian. This variable is motivated by the comparative politics literature that portrays majoritarian and proportional elections as a trade-off between better accountability (less corruption) and representation. 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 (see Persson and Tabellini, 1999).

The fourth indicator motivated by Persson and Tabellini (2003), PRES, proxies for presidential versus parliamentary regimes and takes the value one in the former case and zero otherwise. Presidential regimes are thought to provide more accountability because they concentrate the executive power in a single office that is directly responsible to voters. In addition, presidential systems are presumed to feature better separation of powers as well as checks and balances, which makes it harder for politicians to collude at the voters' expense (Persson et al., 1997, 2000). Weaker electoral accountability in parliamentary regimes is then thought to result in greater rent extraction and higher taxes than in presidential systems. Finally, Persson (2004) includes 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.<sup>12</sup>

At this stage, it is also helpful to discuss causality in social infrastructure regressions. Following the approaches by Hall and Jones (1999) as well as Persson and Tabellini (2003), the literature on the determinants of social infrastructure is mostly concerned with long-term effects, which assumes that variables in these regressions change very slowly. There is no notion that

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<sup>11</sup> Rockey (2012) also uses the age of democracy variable, but focuses on its impact on the size of government.

<sup>12</sup> We follow the literature and also include regional dummies (AFRICA, LAAM, ASIAE) and colonial controls (COL\_UKA, COL\_ESPA, and COL\_OTHA). See Table 1 for detailed definitions and summary statistics.

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. Often variables such as ‘type of democracy’ or ‘fraction of the population speaking English’ are included without much temporal concern, 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.<sup>13</sup> Lastly, our dataset on actual dimensions of written constitutions does not differentiate between *de jure* and *de facto* institutions. While this distinction is certainly of interest, 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.

## 4.2 Primary Constitutions Data

Our data on primary constitutional rules is based on the Comparative Constitutions Project (2014), which provides detailed information on all countries’ most recent constitutions. The CCP data is an exhaustive sequence of coded constitutional provisions that has been compiled and extensively used by political scientists for different purposes. The data are rich both in terms of the available breadth of constitutional features and in the finesse in which each aspect is considered. For example, an important element of executive constraints concerns the possibility of calling a state of emergency, and the data distinguishes both between who can call a state of emergency and under which set of circumstances it can be done (for instance, can a state of emergency be called under fairly general conditions, or only in certain constitutionally-specified cases). Using the original data, we convert all constitutional rules into dichotomous variables,<sup>14</sup>

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<sup>13</sup> 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).

<sup>14</sup> For example, for the question “How is the head of state selected?” the CCP database lists three possible replies: 1. heredity, 2. election by citizens, or 3. election by elite. Hence we create three variables (HOSELECT\_1, HOSELECT\_2, HOSELECT\_3) such that the first one takes the value 1 if the head of state is selected through a hereditary process and 0 otherwise, and so on.

and after excluding variables that are extraneous or ambiguous to the analysis (see the Appendix for details) our dataset contains 156 constitutional rules as candidate determinants of social infrastructure. Table 1 provides detailed definitions of all variables and summary statistics.

The constitutional variables can be grouped into six dimensions that pertain to the theories outlined in Section 2. There are 40 variables relating to *Executive Constraints*, distinguishing, among other things, between checks and balances for the head of government and the head of state. Constitutional features in this category pertain to the executive selection process, executive powers (and limits thereof) and executive dismissal mechanisms. The second dimension includes 24 variables on *Legislative Rules* that cover legislative procedures, powers of the legislature, and the dismissal of lawmakers. Together the constitutional rules in the executive and legislative categories cover the executive and legislative constraints discussed above. Indeed, they provide a much richer set of candidate regressors that capture executive constraints in constitutions at a much more detailed level than previous aggregate proxies. For example, they include variables such as the number of executives, the circumstances under which a state of emergency can be called and by whom, but also a measure of whether the legislature can investigate the executive or not, and the procedures to remove individual legislators or to amend the constitution.

The third dimension of our dataset contains detailed information on 23 *Judiciary Rules* covering constitutional design, legal processes, and legal rights. These include basic rights, such as whether corporal punishment is prohibited, as well as constraints on the government's abuse of legal power (e.g., the requirement of redress for false imprisonment). The fourth category, *Federalism*, contains 6 constitutional rules that identify the powers of subnational governments, as suggested by Persson and Tabellini (2003). This detailed information enables us to examine exactly which aspects of federalism (if any) affect social infrastructure, as federalism is defined both in terms of geographical units but also with respect to autonomous and ethnic groups. The fifth dimension includes 17 variables that characterize *Elections*, containing detailed descriptions of electoral rules and processes. Hence, the dataset features direct measures that can test the electoral systems hypotheses put forward by Persson and Tabellini (2003) as we have detailed information ranging from the majoritarian-proportional elections dichotomy over party formation and campaign financing rules to seat quotas for minorities. An entirely new set of possible determinants of social infrastructure is contained in our sixth constitutional dimension which

covers *Individual and Human Rights*. The 46 different variables in this category include basic rights, such as free speech, academic freedom, equality before the law, and entitlements.

Our final dataset includes 69 countries (see Table A.2 for a complete list), which constitutes the intersection of the Hall and Jones (1999), Persson and Tabellini (2003) and Comparative Constitutions Project 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.1).

## **5. Results**

### **5.1 Determinants of Social Infrastructure**

We present our results in two stages. First, we include only primary constitutions data as potential determinants of social infrastructure. Then we add the variables suggested by Hall and Jones (1999) (EURFRAC, ENGFRAC, LATITUDE and FRANKROM) and Persson and Tabellini (2003) (PRES, MAJ, AGE, FEDERAL, PARL\_DEMOC). Since we are processing over 150 regressors, we report only variables that exhibit at least a weak effect, i.e. a posterior inclusion probability of at least 50%.

Panel 1 in Table 2 provides IBMA results when considering our 156 primary constitutional rules as candidate regressors, as well as the above described dummies for colonial and continental origin. To minimize clutter, Table 2 does not report results for variables which do not surpass the 50% effect threshold (the detailed results for all ineffective variables and thus omitted regressors are available on request). We find that 26 constitutional regressors surpass the weak effect threshold to determine the quality of social infrastructure. The second panel adds the Hall and Jones variables as well as the constitutional proxies used by Persson and Tabellini. Of all variables that have been suggested by the previous literature, only one remains effective: AGE (the age of a democracy), which exhibits a 100% inclusion probability implying that it is a key determinant of social infrastructure. The positive sign and the magnitude of the posterior mean indicate that the quality of social infrastructure substantially improves with the age of a democracy. The proxies previously employed by Persson and Tabellini (2003) to examine the effects of different types of democracy or electoral systems are not effective (and hence their

results are not reported in the table), which implies that primary constitutional rules better capture particular features of democracies than these aggregate measures. Similarly, none of the Hall and Jones (1999) variables surpass the weak effect threshold (and hence their results are not reported in the table) as their effects are absorbed by the primary constitutions data. Even LATITUDE and the trade policy variable FRANKROM are not effective anymore as their explanatory power is superseded by more specific constitutional rules.

The models in both panels fit the social infrastructure data remarkably well, as measured by both their respective R-squared and Bayesian Information Criterion (BIC). The adjusted R-squared of the best model is high in the first panel at 0.95, indicating the substantial explanatory power of the primary constitution variables compared to a fit of 0.3 to 0.6 in the previous literature (see Table A.1). The explanatory power barely changes with the inclusion of the Hall and Jones/Persson and Tabellini variables, as the adjusted R-squared reaches 0.97 in the second specification.

Overall, there is a substantial overlap in the results from the two specifications, with half of the effective variables in panel 1 appearing also in panel 2. Nevertheless, we also observe important variations which indicate that the AGE of a democracy, a crucial determinant missing in panel 1, does not have an analog in the primary constitutions data. This explains the observed difference in the best models in panels 1 and 2. In particular, the inclusion of AGE in panel 2 improves the fit and eliminates some primary constitution regressors that are effective in panel 1. Intuitively, the introduction of AGE allows for a different set of models to be selected by the IBMA algorithm.

In our discussion of the results we focus on the specification in panel 2, which provides the best fit in terms of the Bayesian Information Criterion and the adjusted R-squared. Variables from each of the six constitutional dimensions show an effect: *Elections*, *Executive Constraints*, *Federalism*, *Legislative Rules*, *Judiciary Rules* and *Individual and Human Rights*. First of all, we note that electoral rules do matter, but not the distinction between presidential and majoritarian systems. Using actual primary constitution data, we find that three features of the electoral system exert a crucial impact on social infrastructure: restrictions on campaign contributions (LimitsOnCampaignDonations) improve social infrastructure outcomes while quotas for minorities in the legislature (MinorityQuotaInLegislature) and limits on the freedom to organize



in political parties (*PartiesCanBeProhibited*) have a detrimental effect. These three features of the electoral process are also among the most important constitutional rules in terms of the magnitude of their influence on social infrastructure, as indicated by their posterior coefficient means.

One of the most important constitutional rules pertaining to *Executive Constraints*, as measured by its posterior mean and inclusion probability, is the absence of the right for the legislature to investigate the executive (*LegCannotInvestigateExecutive*). This result is particularly noteworthy given that previous measures of executive constraints focused only on electoral competition of the chief executive and limitations of his/her powers. While variables to that effect are included in our dataset (see Table 1, for example *HOSELECT* or *HOGIMM\_2*), none are found to be effective. In contrast, creating a balance of power between legislators and the executive seems to be a crucial determinant of social infrastructure. In line with this observation, the presence of a single executive (*NumberOffExec=1*) who is equipped with the power to declare a state of emergency (*ExecCanDeclareStateEmergency*) and the fact that in an emergency the head of state is not expediently chosen (*HOSReplace=NormalSelection*) all have a negative impact on social infrastructure. At the same time, the results show that simply including a provision which states violations of the constitution by the head of state can lead to his/her dismissal (*ReasonHOSDismissal=Violation*) is an insufficient executive constraint to promote high-quality social infrastructure. Moreover, the ability of a country's legislature and executive to declare a state of emergency in times of crisis (*ReasonStateEmergency=General*) proves to have a positive impact on a country's social infrastructure.

Only one constitutional rule relating to *Federalism* serves as an effective determinant of social infrastructure: whether the constitution recognizes autonomous indigenous groups (*FederalAutonomousIndigenous*). The magnitude of this determinant is large in terms of the posterior mean and inclusion probability, and the negative coefficient indicates that federal governments can be costly in terms of economic efficiency. Three additional constitutional rules that affect social infrastructure pertain to *Legislative Rules*. Most importantly, the possibility for legislators to be removed (*IndivLegislatorsCanBeRemoved*) enters with a 100% inclusion probability and has a large negative effect. This result is in line with the previously discussed prediction that more independent legislators create better policy outcomes. In addition, constitutional rules that recognize international organizations (*LegalProvisionsForIntOrgs*) and

require a supermajority for new laws in the legislature (`NewLawsRequireSuperMajority`) have a significant positive effect, indicating that both representativeness and openness improve the quality of social infrastructure.

Effective constitutional rules in the *Individual and Human Rights* dimension are equally plentiful, and at times even more influential (in terms of posterior means). Indeed, two variables in this category exert the strongest observed effects of all constitutional rules. The variable with the largest positive impact on social infrastructure is the constitutional guarantee of non-discrimination (`EqualRights&NonDiscrimination`), while the strongest negative effect results from constitutional rules stipulating that the state must provide for an adequate standard of living (`AdequateLivingStandardProvision`). The positive effect of the former is intuitive, while the negative impact of the latter is likely due to a weaker incentive structure which hampers economic activity. Several other human rights are also documented to exert decisive effects: rules that limit corruption (`CounterCorruptionComission`), the separation of church and state (`SeparationChurch&State`), and the guarantee of academic freedom (`AcademicFreedom`) all improve social infrastructure. On the other hand, we find that making rights provisions binding for both the state and private parties (`AllRightsBinding`) as well as constitutionally guaranteed healthcare (`Healthcare`) exert negative effects. Better healthcare is often related to better economic performance, but excessive entitlements anchored in the constitution might also signal excessive reach into the economic rights and affairs of individuals. Economic theories of entitlements have been developed by Sen (1983), who focused on abject poverty and famine, but we are unaware of entitlement theories being linked to social infrastructure or the protection of property rights, which is what our data indicate.

The final category of constitutional determinants that affects social infrastructure is *Judiciary Rules*. The constitutional guarantee of a redress mechanism for false imprisonment (`FalseImprisonRedress`), the requirements that trials are conducted in a language that the accused understands (`TrialsInAccusedLanguage`) and in public (`TrialPublic`) are all effective determinants. The former two constitutional rules exert a positive and the latter a negative effect on the quality of social infrastructure. It is also important to note that the absence of sufficiently stringent bankruptcy laws when debtors cannot be detained (`DebtorsCannotBeDetained`) has a negative impact on social infrastructure, which highlights that the economic dimensions of social infrastructure are well captured by our dataset on primary constitutional rules.

## 5.2 Economic Effects of Constitutions

Having been concerned with the question of *which* constitutional rules affect social infrastructure, we now turn our attention to the economic effects. To gauge the economic impact of individual constitutional rules, we consider the magnitude of the posterior means in panel 2 of Table 2, which allow for a direct comparison given that all effective regressors (including AGE) are restricted to the zero-one range. Figure 1 ranks the effective variables based on the sign and magnitude of their respective posterior means (excluding locational and colonial controls) to emphasize the size of their effects on social infrastructure.

While Persson and Tabellini's AGE variable has the greatest individual impact on the quality of a country's social infrastructure, the simultaneous inclusion of a number of constitutional rules easily outpaces this effect. In particular, there are five constitutional provisions whose presence improves social infrastructure by 0.1 or more – a substantial effect given that our dependent variable is also confined to the zero-one range. These variables include EqualRights&NonDiscrimination, LimitsOnCampaignDonations, TrialsInAccusedLanguage, AcademicFreedom and the presence of a CounterCorruptionCommission. The strongest impact is exerted by EqualRights&NonDiscrimination. Countries that include such a provision in their constitution increase their social infrastructure index by one standard deviation, which is 0.25 in our sample of countries. LimitsOnCampaignDonations is a close second with a slightly weaker impact of 0.21 points.

Figure 1 also highlights that a number of constitutional rules exert detrimental effects on social infrastructure. That is, a country cannot only improve its social infrastructure by including certain rules in its constitution but also by actively excluding others. Our results indicate that there are 15 constitutional rules whose presence worsens the quality of social infrastructure. The greatest negative effects are exercised by provisions that specify PartiesCanBeProhibited, IndivLegislatorsCanBeRemoved, fixed quotas in the legislature (MinorityQuotaInLegislature), autonomous governments for indigenous groups (FederalAutonomousIndigenous), and guaranteed minimum living standards (AdequateLivingStandardProvision). Hence, constitutional rules with a negative impact are just as crucial for explaining the formation of social infrastructure as provisions with positive effects.

Finally, we examine predicted social infrastructure values for all countries to highlight their respective distance to the ideal constitution. With BMA, the model as reported in panel 2 of Table 2 generates the best predictive performance (Raftery and Zheng, 2003). Hence, we use the sum of the posterior coefficient means of the effective regressors to create an overall constitutional quality index for each country. This value is then normalized 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 values of this index are plotted in Figure 2 and reported in Table A.2, ranging from zero (worst constitution) to one (best constitution). As the fitted regression line in Figure 2 shows, the constitution index is indeed an excellent predictor of social infrastructure across countries. The more positive (fewer negative) constitutional rules are contained in a constitution, the greater is also the observed social infrastructure. Mauritius and Finland lead the constitutions index and also rank among the highest in social infrastructure, while Bangladesh has the lowest scores in both indices.

### **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 regressions on the constitutional quality index.<sup>15</sup> To establish a causal effect, we rely on instrumental variable techniques which link the exogenous variation in constitutional rule differences between countries to social infrastructure outcomes.

We implement two distinct and well-established instrumental variable approaches from the literature. Our first approach rests on the observation that none of the social infrastructure determinants suggested by Hall and Jones (1999) – ENGFRAC, EURFRAC, FRANKROM, and LATITUDE – turn out to be effective determinants of social infrastructure after controlling for constitutional rules.<sup>16</sup> 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

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<sup>15</sup> A complete instrumental variable analysis with regard to all 156 constitutional 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 index as next best implementable alternative.

<sup>16</sup> 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).

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 3 report full sample regressions of social infrastructure on the constitutional quality index as well as the social infrastructure determinants suggested by Persson and Tabellini. The latter are included as we found a significant effect in the IBMA runs for the AGE of democracy variable. 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 social infrastructure. This result mirrors the positive relationship between both measures as shown in Figure 2. In line with our earlier IBMA 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 3 with the Hall and Jones (1999) variables: ENGFRAC, EURFRAC, FRANKROM, and LATITUDE.<sup>17</sup> After instrumenting, the coefficient of the constitutional quality index remains positive and significant at the one 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) 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 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 3. The OLS estimates in column (3) are nearly identical to the full sample in specification (1). Constitutional quality and the AGE of a democracy are still significant determinants of social infrastructure, but the presidential system dummy, PRES, is now also significant at the ten percent level. Moving on to the IV results in column (4), the magnitude and statistical

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<sup>17</sup> According to the Sargan statistic in Table 3, the validity of the instruments cannot be rejected at any conventional statistical significance level.

significance of all estimates remain again stable compared to the OLS case, except for PRES which ceases to be significant.<sup>18</sup> The similarity of the OLS and IV estimates for the constitutional quality index makes again a strong case for the wide-spread notion in the literature that political institutions precede social infrastructure. Thus, using different established instrumental variable approaches, we find nearly identical effects of constitutional quality on social infrastructure as in the OLS regressions. This result indicates no or only very limited reverse causality running from social infrastructure to political institutions.

## **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 determinants of social infrastructure 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, implying that it is difficult to disentangle which precise features are relevant. In this paper, we consider a rich new dataset constructed to codify all dimensions of actual constitutional rules which so far have been largely ignored by economists (although they have received much attention in political science). Using the resulting collection of 156 constitutional rules, we ask which aspects of constitutions determine social infrastructure.

With the exception of the age of a democracy, we find that most 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 systems matter, but in a more fundamental fashion than previously suggested. Persson and Tabellini (2003) focused on the effects of majoritarian versus proportional elections, but we find instead that campaign contribution and party formation

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<sup>18</sup> Note that the Sargan statistic is not reported in this case as the model is exactly identified.

regulations are important. Second, as pointed out by prior studies, executive constraints are crucial determinants of social infrastructure. The key variable is, however, not competition in the executive selection process as suggested by the previous literature, but the ability to investigate transgressions by executives and legislators. Third, individual rights and equal access to the judiciary prove to be pivotal as well. To date, these factors have not been considered as determinants of social infrastructure. Moreover, excessive constitutional guarantees of entitlements are shown to exert a negative effect on social infrastructure, indicating that the absence of personal economic responsibility results in less desirable economic outcomes.

Once we control for actual constitutional rules using primary constitution data, our results challenge the previous literature's broad conclusions and indicate that prior findings were an artifact of either limited controls (omitted variable bias) or imprecisely aggregated proxies (errors in variables). In particular, our paper suggests that the vast majority of the previously proposed political, geographic and economic determinants of social infrastructure lose their explanatory power once we account for the subtle details of countries' constitutions. 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 used 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 with regard to social infrastructure 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.

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**Table 1: Variable Names, Definitions, Sources and Summary Statistics**

| Variable                          | Definitions and sources   | Mean | SD   | Min | Max |
|-----------------------------------|---|------|------|-----|-----|
| <b>Legislative Rules</b>          |   |      |      |     |     |
| AdoptAmendmentRequires>60%        | What proportion of the vote is needed to approve a constitutional amendment?<br>345: 3/5 or 3/4 majority  | 0.07 | 0.26 | 0   | 1   |
| AMNDAMAJ                          | Do constitutional amendments require more than a simple majority by the legislature to be approved?   | 0.66 | 0.48 | 0   | 1   |
| ASSETS                            | Does the Constitution require legislators disclose their earnings and/or assets?  | 0.10 | 0.30 | 0   | 1   |
| HOUSENUM                          | How many chambers or houses does the Legislature contain?   | 0.48 | 0.50 | 0   | 1   |
| IMMUNITY_2                        | Does the constitution provide for immunity for the members of the Legislature under some conditions? 2: limited immunity  | 0.79 | 0.41 | 0   | 1   |
| IndivLegislatorsCanBeRemoved      | Are there provisions for removing individual legislators?   | 0.72 | 0.45 | 0   | 1   |
| INITIAT                           | Does the constitution provide for the ability of individuals to propose legislative initiatives (referenda from below)?   | 0.31 | 0.47 | 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   |
| LEGAPPDF_4                        | 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   |
| LEGAPPT_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   |
| NewLawsRequireSuperMajority       | Is a supermajority needed for passing any legislation?  | 0.27 | 0.45 | 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 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   |
| 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   |
| 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   |
| SPECLEG_1                         | Does the constitution provide for any of the following special legislative processes? 1: organic law  | 0.21 | 0.41 | 0   | 1   |
| SPECLEG_3                         | Does the constitution provide for any of the following special legislative processes? 3: tax bills  | 0.62 | 0.49 | 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   |
| UNAMEND                           | Are any parts of the constitution unamendable?  | 0.28 | 0.45 | 0   | 1   |
| <b>Elections</b>                  |   |      |      |     |     |
| 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   |
| 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   |
| LimitsOnCampaignDonations         | Are there any provisions for limits on money used for campaigns?  | 0.12 | 0.32 | 0   | 1   |
| MinorityQuotaInLegislature        | Does the constitution stipulate a quota for representation of certain groups in the Second Chamber?   | 0.09 | 0.28 | 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   |
| REFEREN                           | Does constitution provide for referendum (or plebiscite) proposals?   | 0.65 | 0.48 | 0   | 1   |
| UHAGE_UNDER22                     | 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   |
| 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   |

| Variable                        | Definitions and sources  | Mean | SD   | Min | Max |
|---------------------------------|--|------|------|-----|-----|
| 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   |
| VOTELIM_1                       | 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   |
| VOTERES                         | Does the constitution place any restrictions on the right to vote?   | 0.90 | 0.30 | 0   | 1   |
| VOTEUN                          | Does the constitution make a claim to universal adult suffrage?  | 0.56 | 0.50 | 0   | 1   |
| Executive Constraints           |  |      |      |     |     |
| 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   |
| BANK                            | Does the constitution contain provisions for a central bank?   | 0.45 | 0.50 | 0   | 1   |
| BANKGOAL_1                      | What are the policy goals of the central bank? 1: Price stability alone  | 0.07 | 0.26 | 0   | 1   |
| COMCHIEF_1                      | Who is the commander in chief of the armed forces? 1: head of state  | 0.73 | 0.45 | 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   |
| EMAPPR_1                        | Who approves a state of emergency? 1: does not need approval   | 0.16 | 0.36 | 0   | 1   |
| EMCOND_2                        | Under which of the following circumstances can a state of emergency be called? 2: internal security  | 0.45 | 0.50 | 0   | 1   |
| EMCOND_3                        | Under which of the following circumstances can a state of emergency be called? 3: national disaster  | 0.34 | 0.48 | 0   | 1   |
| EMDECL_457                      | 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   |
| EMRIGHTS                        | Does the constitution provide for suspension or restriction of rights during states of emergency?  | 0.61 | 0.49 | 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   |
| EXECINDP                        | Does the constitution contain an explicit declaration regarding the INDEPENDENCE of the central executive organ(s)?  | 0.13 | 0.34 | 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   |
| HOGSUCC_12                      | 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 best categorizes the electoral system for the Head of State? 1: plurality  | 0.09 | 0.28 | 0   | 1   |
| HOSELSYS_4567                   | 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   |
| LegCannotInvestigateExecutive   | Does the legislature not have the power to investigate the activities of the executive branch?   | 0.06 | 0.24 | 0   | 1   |
| NumberOfExec=1                  | One executive is specified in the constitution.  | 0.44 | 0.50 | 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=Econ       | Under which of the following circumstances can a state of emergency be called? 5: economic emergency   | 0.13 | 0.34 | 0   | 1   |

| Variable                           | Definitions and sources   | Mean | SD   | Min | Max |
|------------------------------------|---|------|------|-----|-----|
| ReasonStateEmergency=General       | Under which of the following circumstances can a state of emergency be called?<br>4: general danger   | 0.38 | 0.49 | 0   | 1   |
| ReasonStateEmergency=War           | Under which of the following circumstances can a state of emergency be called?<br>1: war/aggression   | 0.49 | 0.50 | 0   | 1   |
| TERR                               | Does the constitution define the geographic borders/territory of the state?   | 0.18 | 0.39 | 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   |
| WAR_47                             | 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   |
| <b>Judiciary Rules</b>             |   |      |      |     |     |
| CAPPUN                             | Does the constitution universally prohibit the use of capital punishment?   | 0.32 | 0.47 | 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   |
| DebtorsCannotBeDetained            | Does the constitution forbid the detention of debtors?  | 0.21 | 0.41 | 0   | 1   |
| DUEPROC                            | Does the constitution explicitly mention due process?   | 0.17 | 0.38 | 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   |
| EXPOST                             | Does the constitution prohibit punishment by laws enacted ex post facto?  | 0.79 | 0.41 | 0   | 1   |
| FAIRTRI                            | 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   |
| HABCORP                            | Does the constitution provide for the right to protection from unjustified restraint (habeas corpus)?   | 0.85 | 0.36 | 0   | 1   |
| ILLADMIN                           | Does the constitution contain provisions protecting the individual against illegal or ultra-vires administrative actions?   | 0.34 | 0.48 | 0   | 1   |
| JC                                 | Does the constitution contain provisions for a Judicial Council/Commission?   | 0.63 | 0.49 | 0   | 1   |
| JREM                               | Are there provisions for dismissing judges?   | 0.82 | 0.39 | 0   | 1   |
| JUDCRTS_1                          | For which of the following specialized courts does the constitution contain provisions? 1: administrative courts  | 0.38 | 0.49 | 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   |
| 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   |
| RGHTAPP                            | Do defendants have the right to appeal judicial decisions?  | 0.29 | 0.46 | 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   |
| SPEEDTRI                           | Does the constitution provide for the right to a speedy trial?  | 0.54 | 0.50 | 0   | 1   |
| TrialsArePublic                    | Does the constitution generally require public trials?  | 0.65 | 0.48 | 0   | 1   |
| TrialsInAccusedLanguage            | Does constitution specify trials have to be in a language the accused understands or right to an interpreter exists if accused cannot understand the language?  | 0.38 | 0.49 | 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   |
| <b>Federalism</b>                  |   |      |      |     |     |
| FEDERAL_1                          | Does the constitution recognize any of the following subnational governments?<br>1: Local/Municipal Government  | 0.75 | 0.44 | 0   | 1   |
| FederalAutonomousIndigenous        | Does the constitution recognize any of the following subnational governments?<br>3: Autonomous Indigenous Groups  | 0.13 | 0.34 | 0   | 1   |
| FederalState/Region                | Does the constitution recognize any of the following subnational governments?<br>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   |
| <b>Individual and Human Rights</b> |   |      |      |     |     |
| AcademicFreedom                    | Does the constitution guarantee academic freedom?   | 0.47 | 0.50 | 0   | 1   |
| ACHIGHED_1                         | Does the constitution guarantee equal access to higher education? 1: Yes  | 0.17 | 0.38 | 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   |
| AllRightsBinding                   | Are rights provisions binding on private parties as well as the state?  | 0.18 | 0.39 | 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 | 0.93 | 0.26 | 0   | 1   |

| Variable                      | Definitions and sources  | Mean | SD   | Min | Max |
|-------------------------------|--|------|------|-----|-----|
|                               | freedom of opinion, thought, and/or conscience?')  |      |      |     |     |
| BUSINES                       | Does the constitution provide a right to conduct/establish a business?   | 0.38 | 0.49 | 0   | 1   |
| CensorshipAllowed             | 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   |
| 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   |
| 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   |
| 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   |
| 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   |
| EXPCOND_2456                  | 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   |
| 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 conditions?  | 0.87 | 0.34 | 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   |
| HR                            | Does the constitution contain provisions for a human rights commission?  | 0.16 | 0.36 | 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   |
| 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   |
| JOINTRDE                      | Does the constitution provide for the right to form or to join trade unions?   | 0.73 | 0.45 | 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   |
| 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   |
| 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   |
| OPGROUP                       | Does the constitution provide for positive obligations to transfer wealth to, or provide opportunity for, particular groups?   | 0.18 | 0.39 | 0   | 1   |
| PROPRGHT                      | Does the constitution provide for a right to own property?   | 0.78 | 0.42 | 0   | 1   |
| PROVHLTH                      | Does the constitution mention a state duty to provide health care?   | 0.37 | 0.49 | 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   |
| SCIFREE                       | Does the constitution provide for a right to enjoy the benefits of scientific progress?  | 0.13 | 0.34 | 0   | 1   |
| SELFDET                       | 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 | 0.42 | 0   | 1   |
| SHELTER                       | Does the constitution provide for the right to shelter or housing?   | 0.32 | 0.47 | 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   |
| TORTURE_12                    | Does the constitution prohibit torture? 1: Universally Prohibited, 2: Prohibited Except in the Case of War   | 0.69 | 0.47 | 0   | 1   |

| Variable   | Definitions and sources   | Mean | SD   | Min  | Max  |
|--|---|------|------|------|------|
| WORK   | Does the constitution refer to a duty to work?  | 0.27 | 0.45 | 0    | 1    |
| <b>Location and Colony Controls</b>  |   |      |      |      |      |
| 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 $COL\_OTHA*(250 - T\_INDEP)/250$ . Source: Persson and Tabellini (2003)   | 0.16 | 0.30 | 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    |
| <b>Hall and Jones &amp; Persson and Tabellini Variables</b>  |   |      |      |      |      |
| 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)   | 0.10 | 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-PRES). Source: Persson and Tabellini (2003)   | 4.68 | 4.74 | -2   | 10   |
| 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 | 0.50 | 0    | 1    |
| STRUCTURAL   | Social infrastructure: average of years open and 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 one, and zero otherwise. |   |      |      |      |      |



**Table 2: Determinants of Social Infrastructure**

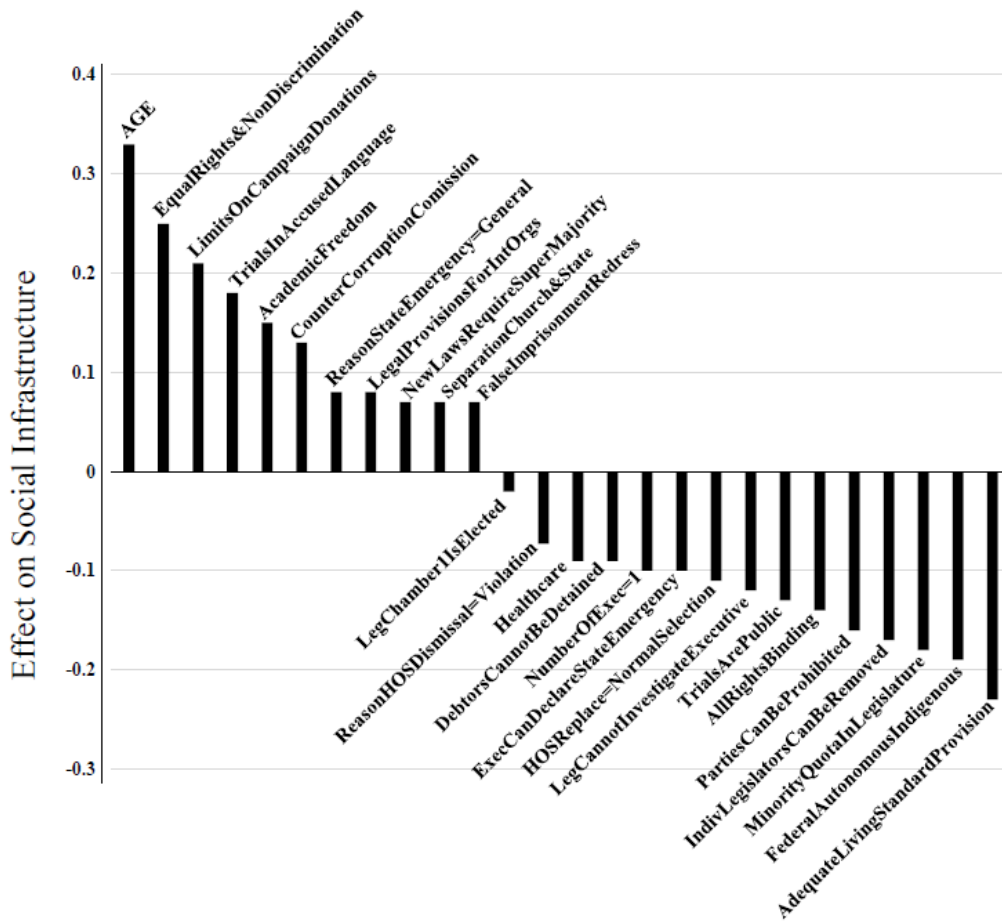
| Dependent Variable: Hall and Jones (1999) Social Infrastructure |                              |                                   | Primary Constitution Data |            |          | Primary, Hall and Jones & Persson and Tabellini Data |            |          |
|---|------------------------------|-----------------------------------|---------------------------|------------|----------|--|------------|----------|
|   | Category                     | Variable                          | Post. Prob.               | Post. Mean | Post. SD | Post. Prob.  | Post. Mean | Post. SD |
| Constitution Data   | Elections                    | LimitsOnCampaignDonations         |                           |            |          | 100  | 0.21       | 0.04     |
|   |                              | PartiesCanBeProhibited            | 100                       | -0.12      | 0.03     | 100  | -0.16      | 0.03     |
|   |                              | MinorityQuotaInLegislature        |                           |            |          | 100  | -0.18      | 0.03     |
|   |                              | LegChamber1IsElected              |                           |            |          | 61   | -0.02      | 0.02     |
|   |                              | LegChamber2IsElected              | 99                        | -0.09      | 0.03     |  |            |          |
|   | Executive Constraints        | ReasonStateEmergency=General      | 100                       | 0.12       | 0.03     | 100  | 0.08       | 0.02     |
|   |                              | NumberOfExec=1                    | 100                       | -0.19      | 0.03     | 100  | -0.10      | 0.02     |
|   |                              | ExecCanDeclareStateEmergency      | 100                       | -0.10      | 0.03     | 100  | -0.10      | 0.03     |
|   |                              | HOSReplace=NormalSelection        |                           |            |          | 100  | -0.11      | 0.03     |
|   |                              | LegCannotInvestigateExecutive     |                           |            |          | 98   | -0.12      | 0.04     |
|   |                              | ReasonHOSDismissal=Violation      | 100                       | -0.17      | 0.03     | 98   | -0.07      | 0.03     |
|   |                              | ReasonStateEmergency=War          | 100                       | -0.14      | 0.03     |  |            |          |
|   |                              | ReasonStateEmergency=Econ         | 100                       | -0.15      | 0.04     |  |            |          |
|   |                              | ReasonHOSDismissal=Unrestricted   | 86                        | 0.09       | 0.06     |  |            |          |
|   | HOSCanDismissLegislature     | 100                               | -0.17                     | 0.04       |          |  |            |          |
|   | Federalism                   | FederalAutonomousIndigenous       |                           |            |          | 100  | -0.19      | 0.04     |
|   |                              | FederalState/Region               | 68                        | 0.04       | 0.03     |  |            |          |
|   | Legislative Rules            | IndivLegislatorsCanBeRemoved      | 100                       | -0.14      | 0.03     | 100  | -0.17      | 0.02     |
|   |                              | LegalProvisionsForIntOrgs         |                           |            |          | 100  | 0.08       | 0.02     |
|   |                              | NewLawsRequireSuperMajority       |                           |            |          | 100  | 0.07       | 0.02     |
|   |                              | LegalProvisionsForIntLaws         | 100                       | -0.15      | 0.03     |  |            |          |
|   |                              | SpecialLegProcessForBudgetBills   | 97                        | -0.15      | 0.05     |  |            |          |
|   |                              | AdoptAmendmentRequires>60%        | 87                        | -0.09      | 0.06     |  |            |          |
|   | Individual and Human Rights  | SpecialLegProcessForSpendingBills | 51                        | 0.03       | 0.04     |  |            |          |
|   |                              | AdequateLivingStandardProvision   | 100                       | -0.17      | 0.03     | 100  | -0.23      | 0.02     |
|   |                              | AcademicFreedom                   | 100                       | 0.18       | 0.03     | 100  | 0.15       | 0.03     |
|   |                              | EqualRights&NonDiscrimination     | 100                       | 0.29       | 0.07     | 100  | 0.25       | 0.05     |
|   |                              | AllRightsBinding                  |                           |            |          | 100  | -0.14      | 0.03     |
|   |                              | SeparationChurch&State            |                           |            |          | 99   | 0.07       | 0.03     |
|   |                              | CounterCorruptionComission        | 99                        | 0.16       | 0.05     | 99   | 0.13       | 0.04     |
| Judiciary Rules   | Healthcare                   | 97                                | -0.09                     | 0.04       | 99       | -0.09  | 0.03       |          |
|   | CensorshipAllowed            | 93                                | 0.10                      | 0.04       |          |  |            |          |
|   | DebtorsCannotBeDetained      | 100                               | -0.22                     | 0.04       | 100      | -0.09  | 0.03       |          |
|   | TrialsArePublic              | 82                                | -0.05                     | 0.04       | 100      | -0.13  | 0.02       |          |
|   | FalseImprisonmentRedress     |                                   |                           |            | 100      | 0.07   | 0.02       |          |
| Location and Colony Controls                                    | TrialsInAccusedLanguage      |                                   |                           |            | 100      | 0.18   | 0.03       |          |
|   | RuleOfLaw(GermanRechtsStaat) | 88                                | -0.05                     | 0.03       |          |  |            |          |
|   | CorporalPunishmentProhibited | 87                                | 0.09                      | 0.06       |          |  |            |          |
| Hall and Jones  | AFRICA                       | 100                               | -0.20                     | 0.04       | 100      | -0.17  | 0.05       |          |
|   | LAAM                         | 96                                | -0.15                     | 0.06       | 100      | -0.20  | 0.04       |          |
|   | ASIAE                        |                                   |                           |            | 78       | 0.06   | 0.05       |          |
|   | COL_UKA                      |                                   |                           |            | 83       | -0.07  | 0.05       |          |
| Persson and Tabellini   | EURFRAC                      |                                   |                           |            |          |  |            |          |
|   | ENGFRAC                      |                                   |                           |            |          |  |            |          |
|   | LATITUDE                     |                                   |                           |            |          |  |            |          |
|   | FRANKROM                     |                                   |                           |            |          |  |            |          |
| Persson and Tabellini   | AGE                          |                                   |                           |            | 100      | 0.33   | 0.06       |          |
|   | PARL_DEMOC                   |                                   |                           |            |          |  |            |          |
|   | MAJ                          |                                   |                           |            |          |  |            |          |
|   | PRES                         |                                   |                           |            |          |  |            |          |
| Persson and Tabellini   | FEDERAL                      |                                   |                           |            |          |  |            |          |
|   | nobs                         |                                   |                           | 69         |          | 69   |            |          |
|   | R2                           |                                   |                           | 0.952      |          | 0.968  |            |          |
|   | BIC                          |                                   |                           | -86.78     |          | -110.48  |            |          |

**Table 3: Constitutional Quality and Social Infrastructure**

| Dependent variable:<br>Hall and Jones (1999) Social<br>Infrastructure | HJ Instruments Sample |                      | Settler Mortality Sample |                     |
|---|-----------------------|----------------------|--------------------------|---------------------|
|   | (1)<br>OLS            | (2)<br>IV            | (3)<br>OLS               | (4)<br>IV           |
| <b>Constitution Index</b>   | 3.260***<br>(0.130)   | 3.801***<br>(0.326)  | 3.368***<br>(0.172)      | 2.999***<br>(0.842) |
| <b>AGE</b>  | 0.364***<br>(0.039)   | 0.351***<br>(0.035)  | 0.341***<br>(0.063)      | 0.331***<br>(0.059) |
| <b>PARL_DEMOC</b>   | 0.000<br>(0.005)      | -0.001<br>(0.003)    | 0.001<br>(0.004)         | 0.001<br>(0.005)    |
| <b>MAJ</b>  | -0.021<br>(0.015)     | -0.021<br>(0.017)    | -0.010<br>(0.022)        | 0.000<br>(0.026)    |
| <b>PRES</b>   | 0.025<br>(0.044)      | 0.030<br>(0.025)     | 0.053*<br>(0.026)        | 0.039<br>(0.048)    |
| <b>FEDERAL</b>  | -0.012<br>(0.014)     | -0.018<br>(0.016)    | -0.004<br>(0.021)        | -0.004<br>(0.017)   |
| <b>Constant</b>   | -1.293***<br>(0.078)  | -1.598***<br>(0.187) | -1.367***<br>(0.115)     | -1.148**<br>(0.511) |
| <b>Nobs</b>   | 69                    | 69                   | 39                       | 39                  |
| <b>R2</b>   | 0.969                 | 0.958                | 0.970                    | 0.994               |
| <b>Locational and colonial controls</b>                               | Yes                   | Yes                  | Yes                      | Yes                 |
| <b>Sargan stat</b>  | N/A                   | 1.065                | N/A                      | N/A                 |
| <b>Sargan p-value</b>   | N/A                   | 0.786                | N/A                      | N/A                 |

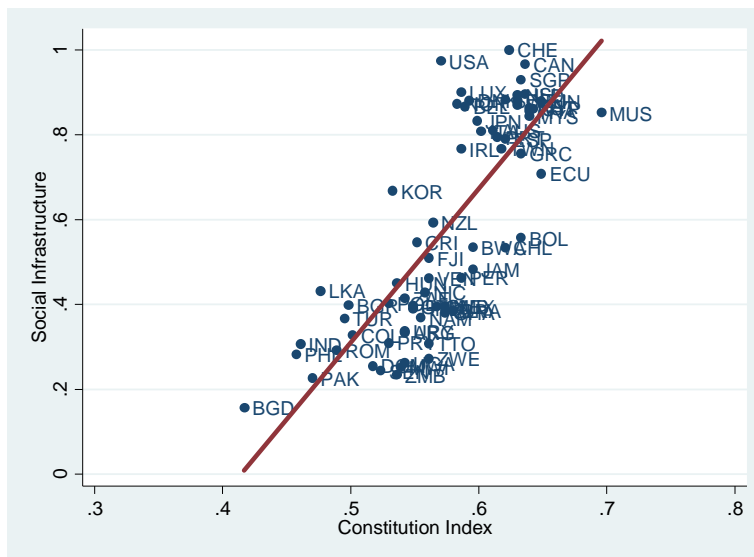
Note: In the left panel, the constitution index is instrumented with ENGFRAC, EURFRAC, FRANKROM, and LATITUDE as in Hall and Jones (1999). In the right panel, the constitution index is instrumented with the settler mortality variable as in Acemoglu et al. (2001). Robust standard errors in parentheses.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

**Figure 1: The Economic Effects of Constitutional Rules on Social Infrastructure**  
 (Coefficient magnitudes of effective regressors in panel 2 of Table 2)



Note: Variable definitions in Table 1. Social infrastructure ranges from 0 to 1.

**Figure 2: Constitution Index and Social Infrastructure**



Note: The constitution index 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 inclusion probability. See Table A.2 for the constitution index values by country.

## 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 PRYDUTY, 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.

FREELEC (‘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.

INTEEXEC\_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?'), DEVLPER ('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?') and HOGDISS ('Are there provisions for dismissing the Head of Government?') are highly correlated with NumberOfExec=1 ('One executive is specified in the constitution.'), with correlation coefficients of -.92 and -.94, respectively. 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. EDCOMPFREE 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, RELAW, INDCIT, UHQUOTAD and UHREST. Detailed information is available in the UNBUNDLING\_DATA.do Stata file.

**Table A.1: Replicating Hall and Jones & Persson and Tabellini Results**

| Variable          | Dependent Variable: Hall and Jones (1999)<br>Social Infrastructure |                     |   |                     |
|-------------------|--|---------------------|---|---------------------|
|                   | Hall and Jones Specification                                       |                     | Hall and Jones +<br>Persson and Tabellini Specification |                     |
|                   | Hall and Jones   | Our Sample          | Persson and Tabellini                                   | Our Sample          |
| <b>FRANKROM</b>   | 0.058**<br>(0.023)   | 0.064*<br>(0.036)   | 0.081***<br>(0.030)                                     | 0.073**<br>(0.030)  |
| <b>ENGFRAC</b>    | 0.118<br>(0.086)   | 0.105<br>(0.114)    | -0.106<br>(0.109)                                       | -0.149<br>(0.132)   |
| <b>EURFRAC</b>    | 0.130***<br>(0.045)  | 0.072<br>(0.062)    | 0.111<br>(0.072)  | 0.125*<br>(0.072)   |
| <b>LATITUDE</b>   | 0.708***<br>(0.098)  | 0.650***<br>(0.153) | -0.036<br>(0.224)                                       | -0.132<br>(0.227)   |
| <b>PARL_DEMOC</b> |  |                     | 0.008<br>(0.022)  | 0.012<br>(0.019)    |
| <b>PRES</b>       |  |                     | -0.004<br>(0.187)                                       | 0.019<br>(0.161)    |
| <b>MAJ</b>        |  |                     | 0.031<br>(0.066)  | 0.031<br>(0.068)    |
| <b>AGE</b>        |  |                     | 0.414***<br>(0.120)                                     | 0.440***<br>(0.129) |
| <b>FEDERAL</b>    |  |                     | 0.062<br>(0.054)  | 0.050<br>(0.055)    |
| <b>AFRICA</b>     |  |                     | -0.158<br>(0.139)                                       | -0.211<br>(0.157)   |
| <b>ASIAE</b>      |  |                     | 0.012<br>(0.136)  | -0.027<br>(0.163)   |
| <b>LAAM</b>       |  |                     | -0.216**<br>(0.098)                                     | -0.234**<br>(0.105) |
| <b>COL_ESPA</b>   |  |                     | -0.062<br>(0.213)                                       | -0.063<br>(0.243)   |
| <b>COL_OTHA</b>   |  |                     | -0.107<br>(0.092)                                       | -0.036<br>(0.114)   |
| <b>COL_UKA</b>    |  |                     | -0.111<br>(0.117)                                       | -0.057<br>(0.147)   |
| <b>Constant</b>   | 0.079<br>(0.068)   | 0.153<br>(0.102)    | 0.310<br>(0.229)  | 0.327<br>(0.226)    |
| <b>Nobs</b>       | 127  | 69                  | 72  | 69                  |
| <b>R2</b>         | 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 100 percent significance levels, respectively.

**Table A.2: Predicted Constitutional Quality**

| <b>Code</b> | <b>Country</b> | <b>Constitution Index</b> | <b>Social Infrastructure</b> | <b>Code</b> | <b>Country</b>    | <b>Constitution Index</b> | <b>Social Infrastructure</b> |
|-------------|----------------|---------------------------|------------------------------|-------------|-------------------|---------------------------|------------------------------|
| MUS         | Mauritius      | 0.696                     | 0.852                        | SLV         | El Salvador       | 0.574                     | 0.386                        |
| FIN         | Finland        | 0.649                     | 0.879                        | USA         | USA               | 0.571                     | 0.974                        |
| ECU         | Ecuador        | 0.649                     | 0.709                        | GMB         | Gambia            | 0.567                     | 0.395                        |
| CYP         | Cyprus (G)     | 0.643                     | 0.862                        | NZL         | New Zealand       | 0.564                     | 0.593                        |
| AUT         | Austria        | 0.639                     | 0.864                        | ZWE         | Zimbabwe          | 0.561                     | 0.273                        |
| THA         | Thailand       | 0.639                     | 0.856                        | VEN         | Venezuela         | 0.561                     | 0.462                        |
| MYS         | Malaysia       | 0.639                     | 0.844                        | FJI         | Fiji              | 0.561                     | 0.510                        |
| ISL         | Iceland        | 0.636                     | 0.896                        | TTO         | Trinidad & Tobago | 0.561                     | 0.308                        |
| CAN         | Canada         | 0.636                     | 0.966                        | NIC         | Nicaragua         | 0.558                     | 0.428                        |
| BOL         | Bolivia        | 0.633                     | 0.557                        | NAM         | Namibia           | 0.555                     | 0.369                        |
| SGP         | Singapore      | 0.633                     | 0.930                        | CRI         | Costa Rica        | 0.552                     | 0.546                        |
| GRC         | Greece         | 0.633                     | 0.756                        | HND         | Honduras          | 0.549                     | 0.390                        |
| FRA         | France         | 0.630                     | 0.871                        | GTM         | Guatemala         | 0.549                     | 0.397                        |
| NLD         | Netherlands    | 0.630                     | 0.894                        | ARG         | Argentina         | 0.542                     | 0.334                        |
| DEU         | Germany        | 0.630                     | 0.882                        | ZAF         | South Africa      | 0.542                     | 0.415                        |
| CHE         | Switzerland    | 0.624                     | 1.000                        | URY         | Uruguay           | 0.542                     | 0.338                        |
| CHL         | Chile          | 0.621                     | 0.534                        | UGA         | Uganda            | 0.542                     | 0.262                        |
| SWE         | Sweden         | 0.621                     | 0.883                        | MWI         | Malawi            | 0.539                     | 0.252                        |
| ESP         | Spain          | 0.621                     | 0.790                        | HUN         | Hungary           | 0.536                     | 0.450                        |
| TWN         | Taiwan         | 0.618                     | 0.767                        | ZMB         | Zambia            | 0.536                     | 0.234                        |
| PRT         | Portugal       | 0.614                     | 0.795                        | KOR         | South Korea       | 0.533                     | 0.668                        |
| AUS         | Australia      | 0.611                     | 0.810                        | PRY         | Paraguay          | 0.530                     | 0.310                        |
| ITA         | Italy          | 0.602                     | 0.808                        | POL         | Poland            | 0.530                     | 0.403                        |
| JPN         | Japan          | 0.599                     | 0.833                        | SEN         | Senegal           | 0.524                     | 0.244                        |
| JAM         | Jamaica        | 0.596                     | 0.483                        | DOM         | Dom. Republic     | 0.517                     | 0.255                        |
| BWA         | Botswana       | 0.596                     | 0.535                        | COL         | Colombia          | 0.502                     | 0.327                        |
| DNK         | Denmark        | 0.592                     | 0.881                        | BGR         | Bulgaria          | 0.498                     | 0.398                        |
| BEL         | Belgium        | 0.589                     | 0.866                        | TUR         | Turkey            | 0.495                     | 0.367                        |
| IRL         | Ireland        | 0.586                     | 0.767                        | ROM         | Romania           | 0.489                     | 0.292                        |
| LUX         | Luxembourg     | 0.586                     | 0.900                        | LKA         | Sri Lanka         | 0.476                     | 0.432                        |
| PER         | Peru           | 0.586                     | 0.464                        | PAK         | Pakistan          | 0.470                     | 0.227                        |
| NOR         | Norway         | 0.583                     | 0.873                        | IND         | India             | 0.461                     | 0.307                        |
| BRA         | Brazil         | 0.580                     | 0.386                        | PHL         | Philippines       | 0.458                     | 0.282                        |
| MEX         | Mexico         | 0.574                     | 0.396                        | BGD         | Bangladesh        | 0.417                     | 0.157                        |
| GHA         | Ghana          | 0.574                     | 0.381                        |             |                   |                           |                              |

Note: The constitution index is based on the results in panel 2 of Table 2. The social infrastructure values are from Hall and Jones (1999).