



# What determines administrative capacity in developing countries?

Roberto Ricciuti<sup>1</sup> · Antonio Savoia<sup>2</sup> · Kunal Sen<sup>3</sup>

Published online: 6 June 2019  
© UNU-WIDER 2019

## Abstract

While it is recognised that effective state institutions are pivotal for economic development, their origins and what explains their cross-country differences are not well understood. We focus on the quality of budgetary institutions in developing economies, as efficient public financial planning in such countries is crucial for public goods and services provision. We argue that political institutions, seen as the system of checks and balances on the executive, are a key ingredient for building such capacity. Exploiting a recent database on public financial management performance in developing economies and an instrumental variable strategy, we generally find that stronger constraints on the executive have a positive effect on the ability of states to design, implement and monitor their budget. Our findings are robust to different specifications, controls and estimation methods.

**Keywords** State capacity · Administrative capacity · Constraints on the executive · Public finance management · Economic development · Budgetary institutions

**JEL Classification** H61 · H83 · P48 · N46 · N47

## 1 Introduction

There has been a revival of interest in the role of the state in economic development (Centeno et al. 2017; Dincecco 2017). The analysis of *state capacity*, defined as the institutional capability of the state to carry out various policies that deliver benefits and services to households and firms (Besley and Persson 2011), has emerged as the

---

✉ Roberto Ricciuti  
roberto.ricciuti@univr.it

<sup>1</sup> University of Verona and CESifo, Verona, Italy

<sup>2</sup> Global Development Institute, University of Manchester, Manchester, UK

<sup>3</sup> Global Development Institute, University of Manchester, and UNU-WIDER, Manchester, UK

cutting edge of research on the relationship between governance, institutions and long-term economic development.

The focus has been on two dimensions: fiscal capacity and legal capacity, defined as the capability of raising revenues from taxes, and of enforcing contracts and property rights, respectively. Besley and Persson (2011) argue that such capacities are complementary and give rise to ‘development clusters’: groups of countries that are rich and have well-developed fiscal and legal capacities, or groups of countries that are ridden by poverty and have weak state capacity. Up to this point, the literature has mainly been concerned with the causal effect of state capacity on economic development (Dincecco and Katz 2016; Dincecco and Prado 2012). However, it has also emphasised that building fiscally capable states is at the heart of state formation and performance in providing public goods (e.g. Acemoglu 2005a).

This paper also looks at fiscal aspects, but it focuses on the financial planning side—the capability of states to design, implement and monitor their budget.<sup>1</sup> Strengthening such ability is strategically important to economic development, since achieving greater efficiency in public financial management implies more efficient public goods provision (see, for example, Martin-Vasquez 2014).<sup>2</sup> In doing this, the state needs a well-functioning bureaucracy with Weberian characteristics, which means autonomy from the government and professionalisation of its ranks (Evans and Rauch 1999).<sup>3</sup> This is particularly important for states in less developed countries, since they have much larger needs than high-income countries for investment in infrastructure and basic public goods and services.<sup>4</sup>

In particular, this paper contributes to a thin literature on the long-run determinants of state capacity. Such literature has mainly been based on conditional correlations and has hitherto independently assessed the role of historical factors, such as the incidence of external and internal conflicts (Besley and Persson 2011), the experience of statehood (Bockstette et al. 2002), and the effects of geography, such as abundance of natural resources (Isham et al. 2005) or the conditions affecting population density (Herbst 2000). It has also considered the role of political systems, arguing that executive power subject to checks and balances will tend to promote common interests, rather than using the state to retain power (Besley and Persson 2011). But such political economy explanations remain an underexplored area in empirical research. We contribute to this literature by looking for the first time at the political determinants of administrative capacity for public financial management.

---

<sup>1</sup> In a companion paper, we have analysed how political institutions affect taxation in developing countries (Ricciuti et al. 2018).

<sup>2</sup> Our approach complements other established areas of research on bureaucracy, such as frontline service delivery. See Pepinsky et al. (2017) for a review.

<sup>3</sup> The public administration literature distinguishes four aspects of bureaucratic performance (see Lodge and Wegrich 2014). *Coordination capacity* involves bringing together disparate organisations to engage in joint action; *analytical capacity* is the ability to analyse information and provide advice and vulnerability assessments; *regulation capacity* involves control, surveillance, oversight and auditing; and *delivery capacity* relates to the exercise of power and providing public services in practice.

<sup>4</sup> The existence of first-order differences between investment cost and capital value in developing countries—where public investment accounts for more than 50% of total investments—is emphasised by Pritchett (2000).

Our focus on constraints on the executive as a primary political determinant of administrative capacity is supported by a large literature in political science and political economy. This argues that the emergence of effective states in developing countries depends on how checks and balances on incumbents may help create a preference for more common-interest spending, primarily through two mechanisms: (1) a strong legislature which finds the need to generate broad-based coalitions, thereby offsetting the narrow focus of the executive, and (2) an independent judiciary which promotes broad-based access to public services through statutory service obligations or rights-based arguments and rulings (Besley and Persson 2011; Bardhan 2016; Centeno et al. 2017; Dincecco 2017).<sup>5</sup>

To examine the determinants of administrative capacity, we use a recent data set on public financial management performance measures in developing countries constructed by the Public Expenditure and Financial Accountability (PEFA) project, a consortium of the World Bank and other donor agencies. For a sample of forty-seven developing countries, we find a substantial positive effect between institutions that place constraints on the executive power and current quality of budgetary institutions. Addressing identification concerns, we show that our results are robust to different specifications, controls and estimation methods. Our findings indicate that, to build financially capable states, it is important to build *cohesive* political institutions, providing strong checks and balances on the discretionary power of the executive.

The paper is organised as follows. Section 2 provides a conceptual framework on the relationship between political institutions and administrative capacity. Section 3 discusses our measures of administrative capacity. In Sect. 4, the empirical strategy, the data and the results are presented. Section 5 concludes.

## 2 The political determinants of administrative capacity

In the political science literature, there are four competing notions of state capacity (see Centeno et al. 2017). The first is the ability of the state to achieve its identified goals (*implementation capacity*). The second is the ability of the state to achieve an ideal set of goals usually determined by an outside party (*state scope*). The third is the ability of the state to impel citizens and other states to do what they may not have done otherwise (*relational capacity*). The fourth notion is the organisational capacity of the state (*organisational or administrative capacity*).

As Centeno et al. (2017) persuasively argue, the first three notions of state capacity conflate the concept of state capacity with its causes and consequences. Thus, the literature on *implementation capacity*, *state scope* and *relational capacity* is

<sup>5</sup> In the public administration literature, the notion of governance legitimacy shares some similarities with our approach. Governance legitimacy refers to the relationship between government authorities and citizens. It concerns citizens' perceptions of whether the actions of the authorities are desirable, proper or appropriate within certain socially constructed systems of norms, values and beliefs. Legitimacy affects how people act towards government authorities and how they understand them (Christensen et al. 2016).

explicitly concerned with outcomes. In contrast, the concept of state capacity as *administrative capacity* is analytically neutral, and allows us to compare state capacity across politically distinct kinds of states (e.g. democratic versus authoritarian). For the purposes of this paper, we will focus on the concept of state capacity as *administrative capacity*, as we are interested in the causes of state capacity and not its consequences.

A large literature has studied the determinants of state capacity for developed countries, while the systematic quantitative analysis of state capacity in developing countries is still at its infancy (Dincecco 2017). For example, a well-known line of thinking associated with Tilly (1975) links the historical making of the fiscal–military state in early modern Europe with interstate wars (Bardhan 2016). State making in developed countries has also been associated with inducing citizen compliance in providing revenue (Levi 1988). In contrast, Bates (2014) and Reid (2014) argue that the ‘imperial peace’ implemented by European colonial powers cut short an indigenious process of war-related state development in Africa. Furthermore, Bates (2010) argues that ‘Cold War-era foreign aid hampered African political development by reducing the incentive of rulers to seek domestic political consensus for their policy choices’ (Dincecco 2017, p. 73).

An early contribution to the literature on the determinants of state capacity in developing countries, which focused on political factors, was Evans (1995), who argued that the ‘embedded autonomy’ of the Korean state was an important cause of the high levels of administrative capacity that one witnessed in the country, particularly in implementing the Korean political elite’s vision for long-term economic development. Here, ‘embedded autonomy’ was the combination of a Weberian bureaucratic structure autonomous of the business elites and of channels of deliberative processes involving important political stakeholders in the development process (Bardhan 2016).

More recent literature has highlighted the role of accountability mechanisms on state leadership—‘various kinds of checks and balances including constitutional constraints on executive power, separation of powers, electoral rules, independent judiciary, free media and other accountability mechanisms for the state leadership’ (Bardhan 2016, p. 871)—as necessary enabling conditions for capable states to emerge in developing countries. In particular, as Besley and Persson (2011) also argue, states with weak limitations on the executive have weak compulsions to supply common-interest services: ‘constraints on the executive will diminish the concern that the government is run in the interests of a narrow group’ (Bardhan 2016, p. 871).

Similarly, Dincecco (2017, pp. 21–22) argues that institutional impartiality is an essential precondition for effective statehood, understood as the presence of ‘an institutional player within the national government that has the formal political authority to regularly monitor state finances’. In parliamentary democracies, such a role will be played by an effective parliament, one which the political leader cannot call or disband at will. Here, an effective parliament can ‘regularly oversee the state’s budget, including authority over taxation, the right to audit previous government spending, and the right to veto new expenditures’ (Dincecco 2017, p. 22). In autocracies, such checks and balances on the executive may be weaker. However,

as Besley and Kudamatsu (2008) point out, even in autocracies, there may be constraints on the autocrat placed by government insiders—the ‘selectorate’ (Buono et al. 2003)—whose power does not depend on the current executive and who can remove poorly performing executives, if necessary. Thus, limits on executive power promote a *common-interest* environment, in which the ruling minority is unable to hand out favours to cronies or themselves (Besley and Persson 2011).

The literature emphasising the role of accountability mechanisms on state leadership has so far argued that they are important to build fiscal and legal capacity in developing economies (e.g. Besley and Persson 2009). What this literature has not investigated yet is whether such accountability mechanisms affect also administrative capacity for public financial management, which is the focus of this paper. In particular, we investigate the hypothesis that political institutions placing checks and balances on executive power foster the ability of states to deliver timely and effective financial planning. This is because, when subject to checks and balances, a ruler has less discretion over public spending decisions than one who is not. Hence, he or she may be more likely to promote an effective independent civil service (rather than one based on patronage, which may undermine the competence of the state bureaucracy) and so maintain or innovate the state’s public finance infrastructure and its ability to design, implement and monitor the budget. Similarly, with clear limitations on his or her powers, a ruler is more likely to follow the rule of law, so that the judicial system may counter rent seeking more effectively, and to have a more transparent policy process, thus reducing waste and corruption. The following testable proposition summarises our argument:

**Proposition 1** *Political institutions placing checks and balances on the executive power foster the ability of states to deliver effective and timely financial planning. The effect of higher constraints on the executive on the quality of budgetary institutions is positive.*

The existing empirical literature has mainly been interested in the effects of state capacity, rather than in its origins, and has neither focused on the ability of states to deliver effective financial planning, nor satisfactorily measured bureaucratic quality. For example, Knack and Keefer (1995) used variables from the *International Country Risk Guide* data (ICRG 1997), which are among the oldest and perhaps the most commonly used measures of institutional quality in the empirical literature on institutions and economic development. The data come from subjective assessments of foreign investors and ‘business experts’. It includes *government repudiation of contracts*, the *rule of law*, the *expropriation risk*, *corruption in government* and *bureaucratic quality* indices. The first two capture the legal capacity of the state, the last two proxy for the level of administrative capacity, while the expropriation risk tries to express the likelihood of outright nationalisation. But what such variables capture remains somewhat methodologically and conceptually unclear (Savoia and Sen 2015).

Similarly, Rodrik et al. (2004) have used data from the Worldwide Governance Indicators (World Bank 2011) to estimate their effects on economic growth. Four

such indicators may be seen as proxies for administrative capacity: *rule of law*, *regulatory quality*, *government effectiveness* and *control of corruption*. These are all subjective measures that try to improve on country coverage by aggregating the ratings from over 30 organisations (including ICRG 1997). Recently, the *Quality of Government* index assembled by Teorell et al. (2017) extends the temporal coverage of the ICRG database, but focuses only on three of its variables. It is calculated as the average of *rule of law*, *corruption in government* and *bureaucratic quality* indices from various editions of the *International Country Risk Guide* (the other two components seen above were discontinued after 1997).

State capacity indicators should focus on the competence and ability of the bureaucracy, since it is closer to the underlying concept. Evans and Rauch (1999) surveyed 35 developing economies to collect data with time-invariant values representing the period 1970–1990. Their ‘Weberianness Scale’ provides a measure of the degree to which bureaucratic agencies employ meritocratic recruitment and offer predictable, rewarding long-term careers.<sup>6</sup> They found that these ‘Weberian’ characteristics significantly enhanced economic growth after controlling for the initial levels of GDP per capita and human capital. Rauch and Evans (2000) used the same index to explain variations in the institutional quality indicators analysed by Knack and Keefer (1995). They found that these indicators were significant determinants of three out of five measures of bureaucratic performance. In particular, meritocratic recruitment is the element of bureaucratic structure that is most important for improving bureaucratic performance. Internal promotion and career stability are at best of secondary importance, whereas competitive salaries do not appear to have any effect on bureaucratic performance. Although Evans and Rauch’s approach is perhaps the most rigorous attempt to measure bureaucratic capacity (Centeno et al. 2017), it covers a fairly limited range of countries and, above all, does not focus on the quality of public financial management.

Our brief review of the empirical literature on state capacity highlights two limitations. First, while much of the literature has focused on the outcomes of high state capacity, less is known about how developing countries acquire the high levels of state capacity that are necessary for positive development outcomes. Second, existing empirical research has tended to look at state capacity as an aggregate (as expressed by catch-all measures of governance quality, commonly used in the empirical literature), without paying particular attention to the capacity of the bureaucracy to devise and implement efficient public financial management systems. Arguably, it is the administrative capacity of the state to deliver effective and timely public financial planning that matters the most for public goods and services delivery in the developing world. We address these two limitations here by examining the

---

<sup>6</sup> Drawing on the work of Max Weber (1968), Evans (1992, 1995) argues that a professional state bureaucracy is a necessary condition for a state to be ‘developmental’. The key institutional characteristics of what he calls ‘Weberian’ bureaucracy include meritocratic recruitment through competitive examinations, civil service procedures for hiring and firing rather than political appointments and dismissals, and filling higher levels of the hierarchy.

determinants of the state's administrative capacity in developing countries, focusing in particular on political economy factors.

We next discuss how we measure administrative capacity with respect to public financial management in developing countries, using a novel database that is the first of its kind systematically to provide comparable measures of public financial management quality in developing countries.

### 3 Measuring administrative capacity

The survey in the previous section noted that, in the literature on state capacity, states' ability to develop efficient financial planning has not received adequate scrutiny. Similarly, it showed that developing this type of capacity might rest on political institutions limiting the executive power. Here we use four indicators to capture the ability of states to develop high-quality financial planning, selected from the PEFA database, a unique source providing a granular view of public financial management performance in developing countries. The PEFA Program was founded in 2001 as a partnership between seven donor agencies and international financial institutions to assess the condition of countries' public expenditure, procurement and financial accountability systems and develop a practical sequence for reform and capacity-building actions.<sup>7</sup>

Using the selected indicators, we aim to give a more fine-grained picture of some activities performed by the bureaucracy, namely those related to the design, implementation and monitoring of the budget, compared to the assessment provided by generic indicators of bureaucratic quality. We see effective budgeting as a means to provide timely planning and to assess outlays after they have been disbursed with respect to revenues and expenditure, as well as debt management. Should expenditure not be in line with the budget, the competent bureaucracy would be able to reassess the process and to improve its behaviour in the future. Should the government try to interfere with the bureaucracy in the timing and allocation of resources, the independent civil servants would prevent them from extracting private or political benefits. The four indicators are described below (and their complete definition and coding are given in [Appendix 1](#)):

1. *Aggregate expenditure out-turn compared with original approved budget.* This captures the ability to implement budgeted expenditure by assessing the differ-

<sup>7</sup> These indicators are a way to measure processes and outcomes in line with the New Public Management approach (Osborne and Gaebler 1992) that has become dominant in the field since the 1990s. While there may be some tensions between the Weberian bureaucracy, based on formal merits and procedures, and the newer approach based on the efficiency of private firms, Bäck and Hadenius (2008) argue that the supposed superiority of the former can be viewed in a stepwise function. Only after the patrimonial stage is left behind, as in the Weberian world, may efficiency-enhancing features further improve on the delivery of outcomes. This creates a common ground for our measures across different bureaucracy approaches.

**Table 1** PEFA measures of administrative capacity *Sources:* PEFA (2006); our calculations

Variable	Mean	SD	CV	Max.	Min.	<i>N</i>
Aggregate expenditure out-turn compared with original approved budget	1.63	0.86	0.53	3.00	0.00	45
Composition of expenditure out-turn compared with original approved budget	1.19	1.02	0.86	3.00	0.00	42
Aggregate revenue out-turn compared with original approved budget	2.21	0.96	0.44	3.00	0.00	47
Recording and management of cash balances, debt and guarantees	1.62	1.12	0.69	3.00	0.00	36
Composite indicator, averaging the four measures	1.75	0.67	0.38	3.00	0.25	34

ence between actual primary expenditure and the originally budgeted primary expenditure.

2. *Composition of expenditure out-turn compared with original approved budget.* This variable assesses the extent to which the composition of expenditure varies from the original budget over the past 3 years, and so expresses whether the budget is a useful statement of policy intent.
3. *Aggregate revenue out-turn compared with original approved budget.* This captures the ability to produce accurate domestic revenue forecasts in the preparation of the budget by assessing the difference between actual revenues and those in the originally approved budget.
4. *Recording and management of cash balances, debt and guarantees.* This variable assesses the quality of debt management, by looking at the maintenance of a debt data system and regular reporting on the debt portfolio.

Table 1 presents the descriptive statistics for each variable, as well as a simple composite indicator created by taking their average.

As these measures are based on surveys undertaken by public financial management experts and are subject to careful cross-checking and internal and external validity tests by PEFA, they provide an accurate picture of the quality of public financial management in the surveyed countries.<sup>8</sup> Further, the fact that the PEFA database provides scores—rather than just a summary of expert opinion of the country's quality of public financial management—makes the data amenable for quantitative analysis. We next describe the methodology and data that inform the econometric analysis, as well as the results.

<sup>8</sup> Note also that these indicators do not measure public investment efficiency—as in Dabla-Norris et al. (2012), who construct an index that captures the institutional environment underpinning public investment management across four different stages: project appraisal, selection, implementation and evaluation.



## 4 Methodology, data and results

This section first discusses our empirical strategy and the key variables. Then, we illustrate the results, accounting for potential endogeneity concerns.

### 4.1 Methodology and data

Since we look at the structural conditions under which countries develop capable states, regressions based on cross-sectional averages are a suitable approach, as they test relationships whose mechanisms have long-run characteristics.<sup>9</sup> The regression specification takes the form:

$$AC_i = \beta_0 + \beta W_i + X_i' \phi + \varepsilon_i \quad (1)$$

where  $AC_i$  captures the quality of current administrative capacity as the average of the available observations of each PEFA indicator for country  $i$  between the end of the sample period,  $T=2013$ , and  $T-1=2005$ .

On the right-hand side,  $W_i$  is the determinant of interest, averaged between times  $t$  and  $t-1$ , with  $t < T-1$ , while  $\beta$  represents its long-run effect. It is measured as the average value of *Constraints on the executive* from the Polity IV dataset from 1965 (or independence year, if later) up to 2004 (Marshall et al., 2011), as we are interested in the long-run component of these constraints (and not in the annual fluctuations). This variable measures the extent of constitutional limits on the exercise of arbitrary power by the executive (on a scale from 1 to 7, where 1 indicates unlimited authority of the chief executive and 7 indicates executive parity or subordination, with intermediate values indicating moderate to substantial power limitations).  $X_i$  is a set of controls including *Incidence of external conflict*, *Incidence of civil war*, *Total natural resource rents*, *Urban population* (share) and *Length of statehood*.<sup>10</sup>

<sup>9</sup> Prominent examples following this approach are Besley and Persson (2009, 2011) and Acemoglu et al. (2001, 2003). The potential consequence of averaging the variables over years is that it tends to obscure episodes of institutional change within countries, reflecting changes in the political and economic conditions. If this is the case, one could complement the evidence from regressions based on cross-section averages with a panel approach concentrating on the variation *within* to investigate whether the cross-sectional relationship between the variables of interest disappears when country-fixed effects are included in the regression. The relationships under scrutiny, however, are fairly stable (both the dependent and the explanatory variables evolve slowly over time), so casting doubt on the scope for a panel approach. Such an approach would become appealing if one could obtain a panel covering an extensive period of time. In particular, our PEFA variables range only from 2005 to 2013 and have a T-bar of 1.5 (or smaller), as well as exhibiting very little variation within countries (they have a standard deviation within countries which is half the standard deviation between countries, or substantively smaller). Hence, even if desirable, methods that remove the effects of time-invariant factors also remove most of the variations one wants to explain.

<sup>10</sup> Besley and Persson (2011) suggest that state capacities have common determinants and that investing in one dimension of state capacity simultaneously reinforces the other, i.e. there are complementarities.

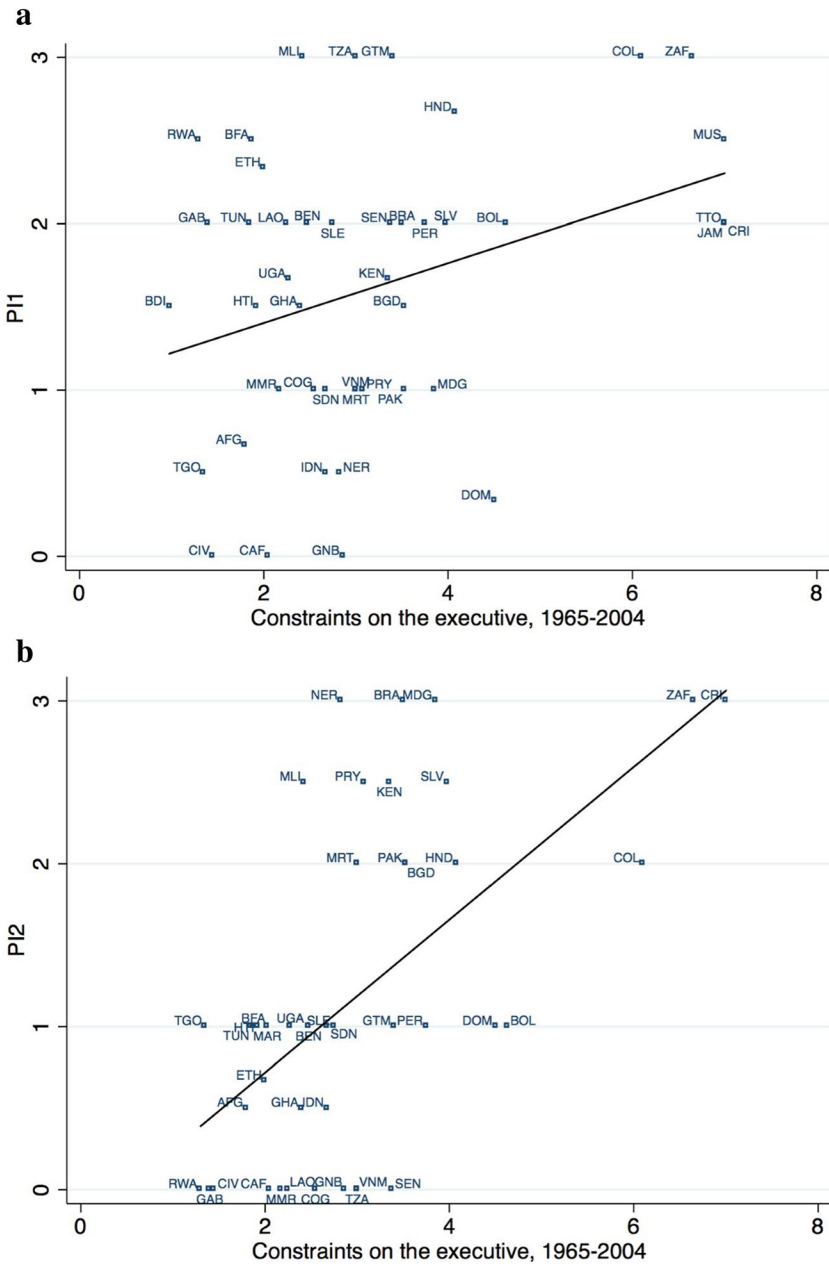
Appendix 2 reports definitions and sources. Finally,  $\varepsilon_i$  is the error term, capturing all other omitted factors. Appendix 3 provides the list of countries included in the analysis.

Figure 1 presents preliminary evidence, suggesting that there is a positive correlation between *Constraints on the executive* and each of the PEFA measures. However, while useful in illustrating the behaviour of key variables, one should not be tempted to place any causal interpretation on such correlations yet.<sup>11</sup> Before estimating (1), we should discuss whether estimating the impact of the political economy hypothesis is subject to identification problems. Although there are good reasons to expect a causal relationship between rulers' accountability and high administrative capacity, Ordinary Least Squares (OLS) estimates are insufficient to document such a relationship. Building a political system is clearly an endogenous process, driven by a variety of social forces, including state actors. When estimating the relationship from the data, the effect of constraints on the executive could then be affected by reverse causality and hence subject to bias. Another concern is that the effect of political systems may be endogenous also in the statistical sense, namely correlated with the regression disturbances because of measurement error. Therefore, one might expect the coefficients on *Constraints on the executive* to be biased both away from zero and towards zero. The magnitude of the two types of bias, and their combined effect, is an open question, but here we attempt to address the problem using an instrumental variable (IV) approach.

Our instrument has a prominent place in the literature: historical settler mortality, as captured by the (log of) mortality rate resulting from the disease environment at the time of colonisation. Acemoglu et al. (2001) documented the fact that such a variable picks up the exogenous variation in the type of institutions built in the former European colonies. Where Europeans settled *en masse*, life was organised around inclusive institutions, i.e. subjecting the ruling elite to binding limitations on their power. Where they could not settle, because of adverse sanitary conditions, institutions were extractive, i.e. subject to little or no constraints on the rulers. Compared with its alternatives, this instrument had a more plausible justification (see Acemoglu 2005b). Perhaps for this reason, it has proved to be resilient to criticism, which came on the grounds of data quality and associated historical records (Albouy, 2012). Since it was proposed, it has been successfully exploited

---

<sup>11</sup> The sample includes countries at different levels of development: 26 from Sub-Saharan Africa (most of which are low-income countries), 12 from Central and South America and ten from Asia. However, there are only two countries from the Middle East and North Africa. The fact that this region is underrepresented perhaps stacks the odds against our results. The missing observations, in this case, are likely to come from countries with low state capacity and low checks and balances on the executive. This would imply that most of these missing observations should be placed approximately in the bottom left corner of Fig. 1.



**Fig. 1** **a** Aggregate expenditure out-turn compared with original approved budget and Constraints on the executive. **b** Composition of expenditure out-turn compared with original approved budget and Constraints on the executive. **c** Aggregate revenue out-turn compared with original approved budget and Constraints on the executive. **d** Recording and management of cash balances, debt and guarantees and Constraints on the executive. **e** Composite indicator of administrative capacity and Constraints on the executive *Source*: PEFA (2006) and Polity IV (Marshall et al. 2011)

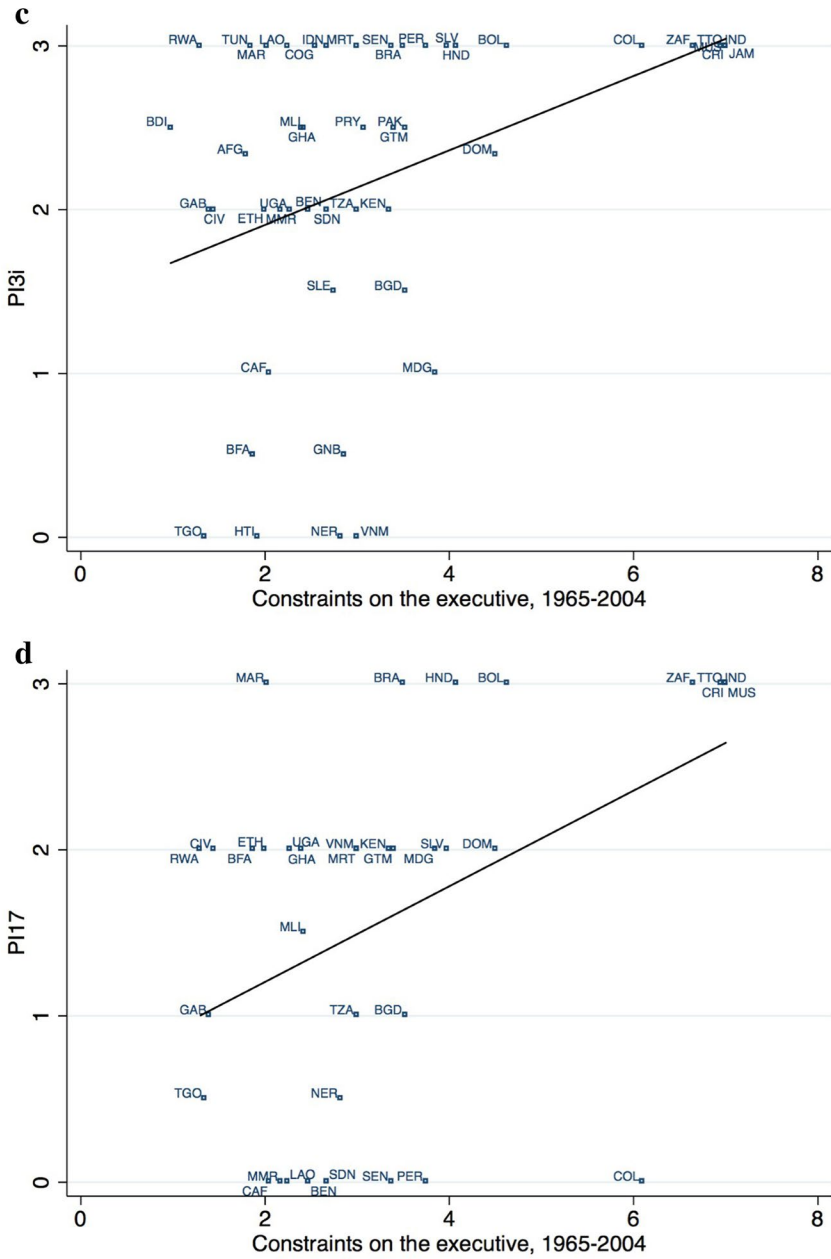


Fig. 1 (continued)

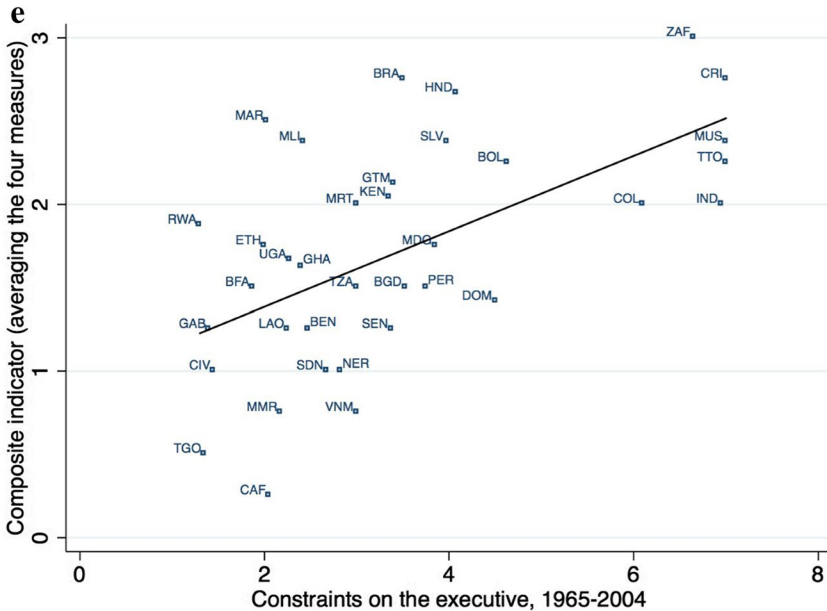


Fig. 1 (continued)

to identify the effect of the *Constraints on the executive* variable (Acemoglu et al. 2001, 2003).<sup>12</sup> While we rely on Acemoglu et al.'s (2001) natural experiment argument that *Settler mortality* does not directly affect level of fiscal capacity (other than through its effect on *Constraints on the executive*), we also address exclusion restriction concerns through econometric testing.

## 4.2 Results

To account for potential instrument weakness, we estimate (1) by Limited Information Maximum Likelihood (LIML), using Fuller's version (Fuller 1977; Baum et al.

<sup>12</sup> One possible alternative strategy is to use legal origin dummies to instrument institutions. But the very same proponents of the 'legal origins view' discourage this, because it is unlikely to satisfy the exclusion restriction, as legal origins are well correlated with a number of macroeconomic, financial and institutional outcomes (see La Porta et al. 2008, pp. 291–294, 300–302). Similarly, using *Fraction of population speaking English or another European language as native languages*, as proposed by Hall and Jones (1999), would have attracted the same type of criticism. Acemoglu (2005b, Sect. 6) presents a persuasive criticism of this strategy, in essence arguing that it is not based on a natural experiment and incorrectly assumes that European influence has a monotonic positive historical effect on institutional development. We used the (log) *Settler mortality* as supplied by the Quality of Government Dataset version 2017 (see Teorell et al. 2017).

2007).<sup>13</sup> This is more robust than Two-Stage Least Squares (2SLS) in the presence of weak instruments, as shown in the simulations carried out in Hahn et al. (2004), and appears to have lower small-sample variability. We set the user-specified constant (denoted by  $\alpha$  in Fuller (1977)) to a value of four. While the Fuller 1 version yields the most unbiased estimator, the Fuller 4 version minimises the mean squared error of the estimator (Fuller 1977).

Table 2 regressions show that *Constraints on the executive* has a significant and consistently positive effect on administrative capacity, for three of its measures. This result holds also when using our simple composite indicator, averaging the four PEFA measures. Speculating on this, it may reflect possible complementarities existing among the different dimensions of administrative capacity, where investing in one of its dimensions may reinforce the others (see Besley and Persson 2011). The magnitude of the effect of IV estimates is comparable to OLS estimates, suggesting that perhaps the bias introduced by reverse causality and measurement error is such that they offset each other. However, constraints on the executive are irrelevant in IV estimates when it comes to predicting the level of *Aggregate expenditure out-turn compared with original approved budget*.

How much does *Constraints on the executive* matter? One standard deviation increase (roughly 1.5 points) increases by over half standard deviations three of the four measures of administrative capacity (Table 3). Considering that in about 20% of developing economies *Constraints on the executive* is above one standard deviation, its effect seems economically meaningful, as well as statistically significant.

The key results are robust to checks for omitted variables. The literature on state capacity has proposed plausible alternatives (not exclusive) to the political institutions hypothesis. Some are historical in nature, i.e. experience of statehood and the incidence of external and internal conflicts. Others are geographical, i.e. the reliance of the economy as regards natural resource rents and population density. Following Besley and Persson (2009, 2011), we use the proportion of years at war from independence up to 2000 and the proportion of years in civil war over 1950–2000 to capture the incidence of external and internal conflict, respectively. *Length of statehood* is captured by the *State antiquity index*, proposed by Bockstette et al. (2002) and based on the intuition that longer histories of statehood lead to higher-quality administration thanks to ‘learning by doing’ effects. Introducing such variables leaves the significance of *Constraints on the executive* unchanged.

<sup>13</sup> The first-stage regressions generally show a highly significant relationship between the log of *Settler mortality* and *Constraints on the executive*, but the F-statistics for the first-stage regressions are occasionally borderline or weak in some regressions, signalling potentially weak instrumentation. They are usually above 10, a rule of thumb suggested by Staiger and Stock (1997). Most specifications pass the Stock and Yogo (2005) test for weak instruments for 15% maximal relative bias at the 5% significance level, but not for 10% maximal relative bias. With weak instruments, the estimated coefficient of interest could be biased towards OLS even if the instrument is weakly correlated with the error term, and especially in small samples. As a remedy, there is general agreement in the literature on using the LIML estimation (e.g. Cameron and Trivedi 2005, pp. 190–192).

**Table 2** Administrative capacity and constraints on the executive—OLS and IV estimates

Dependent variable	Aggregate expenditure out-turn compared with original approved budget			Composition of expenditure out-turn compared with original approved budget		
	OLS	LIML	LIML	OLS	LIML	LIML
<i>Constraints on the executive</i>	0.180*** (0.061)	0.222 (0.143)	0.188 (0.156)	0.469*** (0.061)	0.337* (0.189)	0.398** (0.185)
Length of statehood			0.004 (0.005)			0.001 (0.005)
Incidence of external conflict			-1.399 (5.997)			5.782 (7.324)
Incidence of internal conflict			0.520 (0.586)			-1.244*** (0.396)
% urban population			0.001 (0.008)			-0.008 (0.010)
Total resource rents			0.001 (0.014)			-0.028* (0.014)
Constant	1.044*** (0.261)	0.905* (0.520)	0.519 (0.697)	-0.220 (0.211)	0.179 (0.621)	0.544 (0.629)
F-stat	8.789***	2.404	0.850	59.604***	3.183*	9.714***
1st-stage F		10.820	6.695		6.788	2.817
R-Sq.	0.117	0.111	0.177	0.349	0.322	0.513
Obs.	45	45	42	42	42	39
Dependent variable	Aggregate revenue out-turn compared with original approved budget			Recording and management of cash balances, debt and guarantees		
Estimator:	OLS	LIML	LIML	OLS	LIML	LIML
<i>Constraints on the executive</i>	0.227*** (0.052)	0.372*** (0.111)	0.250** (0.108)	0.288*** (0.088)	0.295*** (0.105)	0.316*** (0.103)
Length of statehood			0.007 (0.006)			0.009* (0.005)
Incidence of external conflict			-5.495 (9.076)			21.312*** (7.076)
Incidence of internal conflict			0.649 (0.481)			-1.730** (0.744)
% urban population			0.016* (0.009)			-0.021* (0.012)
Total resource rents			0.021** (0.009)			0.014 (0.015)
Constant	1.454*** (0.280)	0.974** (0.436)	0.089 (0.690)	0.628* (0.355)	0.603* (0.354)	0.297 (0.599)
F-stat	19.092***	11.326***	3.156**	10.625***	7.853***	5.398***
1st-stage F		11.885	7.800		11.477	9.299
R-Sq.	0.161	0.095	0.314	0.201	0.201	0.462

**Table 2** (continued)

Dependent variable	<i>Aggregate revenue out-turn compared with original approved budget</i>			<i>Recording and management of cash balances, debt and guarantees</i>		
	OLS	LIML	LIML	OLS	LIML	LIML
Estimator:						
Obs.	47	47	44	36	36	34
Dependent variable	<i>Composite indicator, averaging the four measures</i>					
Estimator:	OLS		LIML		LIML	
<i>Constraints on the executive</i>	0.217*** (0.046)		0.265*** (0.083)		0.220** (0.087)	
Length of statehood					0.008 (0.005)	
Incidence of external conflict					6.007 (6.951)	
Incidence of internal conflict					-0.604** (0.269)	
% urban population					-0.001 (0.006)	
Total resource rents					0.002 (0.010)	
Constant	0.988*** (0.214)		0.819** (0.313)		0.296 (0.582)	
F-stat	21.981***		10.332***		3.402**	
1st-stage F			13.212		9.299	
R-Sq.	0.329		0.313		0.492	
Obs.	34		34		34	

Heteroscedasticity-robust standard errors in parentheses

\*Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Geography-based robustness checks are particularly important, as the settler mortality rate could be proxying for ‘resource curse’ mechanisms or population density. For example, disease conditions may well be a determinant of where urban areas arise. So we can examine whether the *Constraints on the executive* results survive when we independently control for geographical variables. To capture such an effect, we use the share of urban population from World Bank (2013). And to capture ‘resource curse’ mechanisms, we use the 1970–2004 average share of GDP accruing from total resource rents (as the sum of oil, natural gas, coal, mineral and forest rents), from World Bank (2013). Introducing such controls does not greatly affect the significance and magnitude of the coefficient of interest. We experiment also with a number of other controls, including political democracy, legal origins, aid dependency, fractionalisation and



**Table 3** Magnitude of effect of a change in *Constraints on the executive*

Dependent variable	Coefficient of <i>Constraints on the executive</i> in IV regression	Change in dependent variable in response to 1 standard deviation change in <i>Constraints on the executive</i>	Ratio to 1 standard deviation dependent variable
Aggregate expenditure out-turn compared with original approved budget	0.188	0.317	0.386
Composition of expenditure out-turn compared with original approved budget	0.398	0.538	0.621
Aggregate revenue out-turn compared with original approved budget	0.250	0.438	0.525
Recording and management of cash balances, debt and guarantees	0.316	0.561	0.638
Composite indicator, averaging the four measures	0.220	0.385	0.438

regional dummies. Introducing such variables in our regressions does not significantly alter our findings (results are available on request).

Finally, we test whether the instrument meets the exclusion restriction by running a test of over-identification. Apart from a priori intuition, this is the other way of supporting the exclusion restriction. This approach is useful, since it is a direct test of our exclusion restriction. However, it is only partially satisfactory as such tests may have weak power (it may not lead to a rejection of the exclusion restriction if all instruments are invalid but still highly correlated with each other). Hence, the responses from these tests are not definitive, but could nonetheless give us additional confidence that settler mortality is a valid instrument. With this caveat in mind, and following Acemoglu et al. (2001), we choose distance from the equator as an additional instrument for *Constraints on the executive*. For such a variable to be valid here, its effects must also go through political institutions rather than through any other mechanism. This is potentially problematic, as it is not based on a natural experiment, but it is consistent with most arguments in the literature emphasising that geography affects development outcomes through political institutions, rather than directly (see Acemoglu 2005b).

The results of the over-identification tests are reported in Table 4. For each dependent variable, we rerun the third regression in Table 2 using both latitude and mortality rates as instruments. The first encouraging piece of evidence is that the new estimated coefficients are always quite close to those reported in Table 2. In addition, the results on the over-identification tests fail to reject the exclusion restriction at the conventional levels in all cases, and by a large margin in four out of five regressions. Hence, this exercise provides no evidence that sanitary conditions, as captured by *Settler mortality*, affect administrative capacity by any other channel than through political institutions.

## 5 Conclusions

Whatever benefit–cost case economists can make for investing in broad-based spending programmes—like infrastructure, health and education—in many low-income countries, there is little problem identifying the need for such public programmes. The problem comes in delivering them. This requires strengthening states' ability to develop effective and timely public financial planning, to achieve more efficient provision of public goods and services. Starting from this premise, we have argued that placing checks and balances on the executive should provide a stronger basis for developing effective budgetary systems, as such political institutions may be more likely to develop bureaucracies on a meritocratic (rather than a patronage) basis and may be more effective (through an independent judiciary) at tackling corruption.

The ensuing empirical evidence, based on an IV approach to account for endogeneity, indicates that political institutions limiting the executive power tend to improve the ability of states in developing economies to design, implement and monitor their budget. Our findings have significant policy implications, as they suggest that the fundamental cause of weak public financial management institutions lies in the absence of political institutions promoting common interests. While much

**Table 4** Accounting for instrument validity—over-identification tests with *distance from the equator* as an additional IV

Dependent variable	Aggregate expenditure out-turn compared with original approved budget	Composition of expenditure out-turn compared with original approved budget	Aggregate revenue out-turn compared with original approved budget	Recording and management of cash balances, debt and guarantees	Composite indicator, averaging the four measures
<i>Constraints on the executive</i>	0.223 (0.174)	0.355* (0.196)	0.248** (0.108)	0.300** (0.117)	0.204** (0.077)
Constant	0.430 (0.725)	0.617 (0.634)	0.095 (0.692)	0.339 (0.617)	0.337 (0.607)
Hansen J statistic ( <i>p</i> value):	0.213	0.742	0.801	0.557	0.474

Heteroscedasticity-robust standard errors in parentheses. All regressions include the full set of controls

\*Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

donor support for more efficient public financial management institutions tends to focus on technocratic solutions, such as reforming recruitment and promotion practices in the public sector, our paper suggests that an important component of donor support for Southern governments should also be building political institutions that place an effective system of checks and balances on executive power.

**Acknowledgements** This research has benefitted from funding from the Effective States and Inclusive Development centre. An earlier version of this paper was published as WIDER Working Paper 2018/13. We thank Johannes Blum, Sezer Yasar and two anonymous referees for comments and suggestions. The paper has also benefited from comments from participants at the Global Development Institute seminar series, at the 3rd conference on the Political Economy of Dictatorship and Democracy and at the 30th conference of the Italian Society for Public Economics. All errors remain our own.

The opinions expressed in this article are those of the authors and do not necessarily reflect the views of the UNU-WIDER, its Board of Directors, or the countries they represent.

**Open Access** This article is licensed under the terms of the Creative Commons Attribution-Non-Commercial-ShareAlike 3.0 IGO License, which permits any non-commercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the UNU-WIDER, provide a link to the Creative Commons licence, and indicate if changes were made. If you remix, transform, or build upon this article or a part thereof, you must distribute your contributions under the same licence as the original.

The use of the UNU-WIDER's name, and the use of the UNU-WIDER's logo, shall be subject to a separate written licence agreement between the UNU-WIDER and the user and is not authorized as part of this CC-IGO licence. Note that the link provided above includes additional terms and conditions of the licence.

The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-sa/3.0/igo/>.

## Appendix 1

See Table 5.

**Table 5** Definitions of dependent variables

Aggregate expenditure out-turn compared with original approved budget (PEFA PI1)	<p>The difference between actual primary expenditure and the originally budgeted primary expenditure (i.e. excluding debt service charges, but also excluding externally financed project expenditure). Average score over 2005–13</p> <p>Scoring method:</p> <ol style="list-style-type: none"> <li>3. In no more than one out of the past 3 years has the actual expenditure deviated from budgeted expenditure by an amount equivalent to more than 5% of that expenditure</li> <li>2. In no more than one out of the past 3 years has the actual expenditure deviated from budgeted expenditure by an amount equivalent to more than 10% of that expenditure</li> <li>1. In no more than one of the past 3 years has the actual expenditure deviated from budgeted expenditure by more than an amount equivalent to 15% of that expenditure</li> <li>0. In two or all of the last 3 years the actual expenditure deviated from budgeted expenditure by an amount equivalent to more than 15% of that expenditure</li> </ol> <p>Source: Variable PI.1, <i>Public Expenditure and Financial Accountability Performance Measurement Framework</i>, 2006. <a href="http://www.pefa.org/en/content/pefa-framework">http://www.pefa.org/en/content/pefa-framework</a></p>
Composition of expenditure out-turn compared with original approved budget (PEFA PI2)	<p>This variable is composed of: (1) Extent of the variance in expenditure composition during the past 3 years, <i>excluding</i> contingency items (the methodology to rate this dimension is set out in footnote 7); (2) The average amount of expenditure actually charged to the contingency vote over the past three years. Average score over 2005–2013</p> <p>Scoring method:</p> <ol style="list-style-type: none"> <li>3. (i) Variance in expenditure composition exceeded 5% in no more than one of the past 3 years (ii) Actual expenditure charged to the contingency vote was on average less than 3% of the original budget</li> <li>2. (i) Variance in expenditure composition exceeded 10% in no more than one of the past 3 years (ii) Actual expenditure charged to the contingency vote was on average more than 3% but less than 6% of the original budget</li> <li>1. (i) Variance in expenditure composition exceeded 15% in no more than one of the past 3 years (ii) Actual expenditure charged to the contingency vote was on average more than 6% but less than 10% of the original budget</li> <li>0. (i) Variance in expenditure composition exceeded 15% in at least two of the past 3 years (ii) Actual expenditure charged to the contingency vote was on average more than 10% of the original budget</li> </ol> <p>Source: Variable PI.2, <i>Public Expenditure and Financial Accountability Performance Measurement Framework</i>, 2006. <a href="http://www.pefa.org/en/content/pefa-framework">http://www.pefa.org/en/content/pefa-framework</a></p>
Aggregate revenue out-turn compared with original approved budget (PEFA PI3i)	<p>Actual domestic revenue compared to domestic revenue in the originally approved budget. Average score over 2005–13</p> <p>Scoring method:</p> <ol style="list-style-type: none"> <li>3. Actual domestic revenue was between 97% and 106% of budgeted domestic revenue in at least two of the past 3 years;</li> <li>2. Actual domestic revenue was between 94% and 112% of budgeted domestic revenue in at least two of the past 3 years;</li> <li>1. Actual domestic revenue was between 92% and 116% of budgeted domestic revenue in at least two of the past 3 years;</li> <li>0. Actual domestic revenue was below 92% or above 116% of budgeted domestic revenue in two or all of the past 3 years</li> </ol> <p>Source: Variable PI.3, <i>Public Expenditure and Financial Accountability Performance Measurement Framework</i>. <a href="http://www.pefa.org/en/content/pefa-framework">http://www.pefa.org/en/content/pefa-framework</a></p>

**Table 5** (continued)

Recording and management of cash balances, debt and guarantees (PEFA PI17)	<p>This variable is composed of: (1) Quality of debt data recording and reporting; (2) Extent of consolidation of the government's cash balances; and (3) Systems for contracting loans and issuance of guarantees. Average score over 2005–2013</p> <p>Scoring method:</p> <p>(i) Quality of debt data recording and reporting</p> <p>3. Domestic and foreign debt records are complete, updated and reconciled on a monthly basis with data considered of high integrity. Comprehensive management and statistical reports (covering debt servicing, stock and operations) are produced at least quarterly</p> <p>2. Domestic and foreign debt records are complete, updated and reconciled quarterly. Data considered of fairly high standard, but minor reconciliation problems occur. Comprehensive management and statistical reports (covering debt servicing, stock and operations) are produced at least annually</p> <p>1. Domestic and foreign debt records are complete, updated and reconciled at least annually. Data quality is considered fair, but some gaps and reconciliation problems are recognised. Reports on debt stocks and servicing are produced only occasionally or with limited content</p> <p>0. Debt data records are incomplete and inaccurate to a significant degree</p> <p>(ii) Extent of consolidation of the government's cash balance</p> <p>3. All cash balances are calculated daily and consolidated</p> <p>2. Most cash balances calculated and consolidated at least weekly, but some extra-budgetary funds remain outside the arrangement</p> <p>1. Calculation and consolidation of most government cash balances take place at least monthly, but the system used does not allow consolidation of bank balances</p> <p>0. Calculation of balances takes place irregularly, if at all, and the system used does not allow consolidation of bank balances</p> <p>(iii) Systems for contracting loans and issuance of guarantees</p> <p>3. Central government's contracting of loans and issuance of guarantees are made against transparent criteria and fiscal targets, and always approved by a single responsible government entity</p> <p>2. Central government's contracting of loans and issuance of guarantees are made within limits for total debt and total guarantees, and always approved by a single responsible government entity</p> <p>1. Central government's contracting of loans and issuance of guarantees are always approved by a single responsible government entity, but are not decided on the basis of clear guidelines, criteria or overall ceilings</p> <p>0. Central government's contracting of loans and issuance of guarantees are approved by different government entities, without a unified overview mechanism</p> <p>Source: Variable PI.17, <i>Public Expenditure and Financial Accountability Performance Measurement Framework</i>. <a href="http://www.pefa.org/en/content/pefa-framework">http://www.pefa.org/en/content/pefa-framework</a></p>
--	---

## Appendix 2

See Table 6.

**Table 6** Definitions of explanatory variables

Executive constraints	This measures the average value of the variable <i>xconst</i> in the Poliy IV dataset from 1965 (or independence date if later) up to 2004. The average is taken over non-missing values of <i>xconst</i> (values outside [1; 7] are treated as missing). <i>Source</i> : Marshall et al. (2011)
Incidence of external conflicts	Proportion of years in external conflict up to 2000. This variable measures the proportion of years at war externally from 1816 (or independence if later) until 2000. The proportion of years in war is calculated as the number of years with war over the total number of non-missing (with and without war) years. <i>Source</i> : Besley and Persson (2011)
Incidence of civil war	Proportion of years in civil war 1950–2006. This variable shows the proportion of years with civil war (where the war incidence measure is equal to 1) over the years without civil war over 1950–2000 for each country (excluding missing values). <i>Source</i> : Constructed from the measure of civil war incidence taken from UCDP/PRIO Armed Conflict Dataset version 4-2007, 1946–2006 produced by the Peace Research Institutes in Oslo and Uppsala in Besley and Persson (2011)
Total natural resource rents (% of GDP)	Total natural resource rents are the sum of rents from oil, natural gas, coal (hard and soft), minerals and forest products. <i>Source</i> : World Bank (2013)
Urban population (% of total)	Urban population refers to people living in urban areas, as defined by national statistical offices. It is calculated using World Bank population estimates and urban ratios from the United Nations World Urbanization Prospects. <i>Source</i> : World Bank (2013)
State antiquity index	The index is constructed by observing a state's history over the period from 1 to 1950 C.E. For each 50-year period, each country was allocated a score for the existence of a government above tribal level whether the government was locally based or foreign, and how much of the territory of the modern country was ruled by this government. The scores for each 50-year sub-period were multiplied by one another and then summed by weighting down the periods in the more remote past. <i>Source</i> : Bockstette et al. (2002)

## Appendix 3

See Table 7.

**Table 7** Countries included in the study

Country (Code)
AFGHANISTAN (AFG)
BANGLADESH (BGD)
BOLIVIA (BOL)
BOTSWANA (BWA)
BRAZIL (BRA)
BURKINA FASO (BFA)
CENTRAL AFRICAN REPUBLIC (CAF)
COLOMBIA (COL)
CONGO, REPUBLIC(COG)
DOMINICAN REP. (DOM)
EL SALVADOR (SLV)
ETHIOPIA (ETH)
GABON (GAB)
GHANA (GHA)
GUATEMALA (GTM)
GUINEA-BISSAU (GNB)
HAITI (HTI)
HONDURAS (HND)
INDIA (IND)
INDONESIA(IDN)
IVORY COAST (CIV)
JAMAICA (JAM)
KENYA (KEN)
LAOS (LAO)
LIBERIA (LBR)
MADAGASCAR (MDG)
MALAWI (MWI)
MALI (MLI)
MAURITIUS (MUS)
MOROCCO (MAR)
MOZAMBIQUE (MOZ)
MURITANIA (MRT)
MYANMAR (MMR)
NIGER (NER)
PAKISTAN (PAK)
PARAGUAY (PRY)
PERU (PER)



Table 7 (continued)

Country (Code)
PHILIPPINES (PHL)
SENEGAL (SEN)
SIERRA LEONE (SLE)
SOUTH AFRICA (ZAF)
SUDAN (SDN)
TANZANIA (TZA)
THAILAND (THA)
TOGO (TGO)
TRINIDAD & TOBAGO (TTO)
TUNISIA (TUN)
UGANDA (UGA)
VIETNAM (VNM)
ZAMBIA (ZMB)

## References

- Acemoglu, D. (2005a). Politics and economics in weak and strong states. *Journal of Monetary Economics*, *52*, 1199–1226.
- Acemoglu, D. (2005b). Constitutions, politics, and economics: a review essay on Persson and Tabellini's the economic effects of constitutions. *Journal of Economic Literature*, *43*, 1025–1048.
- Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review*, *91*, 1369–1401.
- Acemoglu, D., Johnson, S., Robinson, J. A., & Thaicharoen, Y. (2003). Institutional causes, macroeconomic symptoms: Volatility, crises and growth. *Journal of Monetary Economics*, *50*, 49–123.
- Albouy, D. Y. (2012). The colonial origins of comparative development—An empirical investigation: comment. *American Economic Review*, *102*, 3059–3076.
- Bäck, H., & Hadenius, A. (2008). Democracy and state capacity: Exploring a J-shaped relationship. *Governance*, *21*, 1–24.
- Bardhan, P. (2016). State and development: The need for a reappraisal of the current literature. *Journal of Economic Literature*, *54*(3), 862–892.
- Bates, R. (2010). *Prosperity and violence*. New York: Norton.
- Bates, R. (2014). The imperial peace. In E. Akeampong, R. Bates, N. Nunn, & J. Robinson (Eds.), *Africa's development in historical perspective* (pp. 424–446). Cambridge: Cambridge University Press.
- Baum, C. F., Schaffer, M. E., & Stillman, S. (2007). Enhanced routines for instrumental variables/generalized method of moments estimation and testing. *Stata Journal*, *7*, 465–506.
- Besley, T., & Kudamatsu, M. (2008). Making autocracy work. In E. Helpman (Ed.), *Institutions and economic performance*. Cambridge, MA: Harvard University Press.
- Besley, T., & Persson, T. (2009). The origins of state capacity: Property rights, taxation, and politics. *American Economic Review*, *99*, 1218–1244.
- Besley, T., & Persson, T. (2011). *Pillars of prosperity: The political economics of development clusters*. Princeton, NJ: Princeton University Press.
- Bockstette, V., Chanda, A., & Putterman, L. (2002). States and markets: the advantage of an early start. *Journal of Economic Growth*, *7*, 347–369.
- Bueno de Mesquita, B., Smith, A., Siverson, R. M., & Morrow, J. D. (2003). *The logic of political survival*. Cambridge, MA: MIT Press.
- Cameron, A. C., & Trivedi, P. K. (2005). *Microeconometrics: methods and applications*. Cambridge: Cambridge University Press.

- Centeno, M., Kohli, A., Yashar, D. J., & Mistree, D. (2017). *States in the developing world*. Cambridge: Cambridge University Press.
- Christensen, T., Læg Reid, P., & Rykkja, L. H. (2016). Organizing for crisis management: building governance capacity and legitimacy. *Public Administration Review*, 76(6), 887–897.
- Dabla-Norris, E., Brumby, J., Kyobe, A., Mills, Z., & Papageorgiou, C. (2012). Investing in public investment: an index of public investment efficiency. *Journal of Economic Growth*, 17, 235–266.
- Dincecco, M. (2017). *State capacity and economic development*. Cambridge: Cambridge University Press.
- Dincecco, M., & Katz, G. (2016). State capacity and long-run economic performance. *Economic Journal*, 126, 189–218.
- Dincecco, M., & Prado, M. (2012). Warfare, fiscal capacity, and performance. *Journal of Economic Growth*, 17(3), 171–203.
- Evans, P. B. (1992). The state as problem and solution: predation, embedded autonomy, and adjustment. In S. Haggard & R. R. Kaufman (Eds.), *The politics of economic adjustment* (pp. 139–191). Princeton, NJ: Princeton University Press.
- Evans, P. B. (1995). *Embedded autonomy: States and industrial transformation*. Princeton, NJ: Princeton University Press.
- Evans, P. B., & Rauch, J. E. (1999). Bureaucracy and growth: A cross-national analysis of the effects of ‘Weberian’ state structures on economic growth. *American Sociological Review*, 64(5), 748–765.
- Fuller, W. A. (1977). Some properties of a modification of the limited information estimator. *Econometrica*, 45, 939–954.
- Hahn, J., Hausman, J., & Kuersteiner, G. (2004). Estimation with weak instruments: accuracy of higher-order bias and MSE approximations. *Econometrica Journal*, 7, 272–306.
- Hall, R. E., & Jones, C. I. (1999). Why do some countries produce so much more output per worker than others? *Quarterly Journal of Economics*, 114(1), 83–116.
- Herbst, J. I. (2000). *States and power in Africa: Comparative lessons in authority and control*. Princeton, NJ: Princeton University Press.
- ICRG—International Country Risk Guide. (1997). *IRIS database* (3rd ed.). Albania: The Political Risk Services Group.
- Isham, J., Woolcock, M., Pritchett, L., & Busby, G. (2005). The varieties of resource experience: natural resource export structures and the political economy of economic growth. *World Bank Economic Review*, 19(2), 141–174.
- Knack, S., & Keefer, P. (1995). Institutions and economic performance: Cross-country tests using alternative institutional measures. *Economics and Politics*, 7(3), 207–228.
- La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2008). The economic consequences of legal origins. *Journal of Economic Literature*, 46(2), 285–332.
- Levi, M. (1988). *Of rule and revenue*. Berkeley: University of California Press.
- Lodge, M., & Wegrich, K. (2014). *The problem-solving capacity of the modern state*. Oxford: Oxford University Press.
- Marshall, M.G., Jagers, K., & Gurr, T.R. (2011). *Polity IV Project: dataset users’ manual*. Center for Systemic Peace, Polity IV Project, Vienna (USA).
- Martin-Vasquez, J. (2014). Introduction to the special issue on the role of the state in growth and development. *International Tax and Public Finance*, 21(4), 531–535.
- Osborne, D., & Gaebler, T. (1992). *Reinventing government*. Reading, MA: Addison-Wesley.
- PEFA. (2006). *Public Expenditure and Financial accountability (PEFA) performance measurement framework*. <https://pefa.org/content/pefa-framework>.
- Pepinsky, T. B., Pierskalla, J. H., & Sacks, A. (2017). Bureaucracy and service delivery. *Annual Review of Political Science*, 20, 249–268.
- Pritchett, L. (2000). The Tyranny of Concepts: CUDIE (Cumulated, Depreciated, Investment Effort) Is Not Capital. *Journal of Economic Growth*, 5(4), 361–384.
- Rauch, J. E., & Evans, P. (2000). Bureaucratic structure and bureaucratic performance in less developed countries. *Journal of Public Economics*, 75, 49–71.
- Reid, R. (2014). The fragile revolution: rethinking war and development in Africa’s violent nineteenth century. In E. Akeampong, R. Bates, N. Nunn, & J. Robinson (Eds.), *Africa’s development in historical perspective* (pp. 393–423). Cambridge: Cambridge University Press.
- Ricciuti, R., Savoia, A., & Sen, K. (2018). How do political institutions affect fiscal capacity? Explaining taxation in developing economies. *Journal of Institutional Economics*. <https://doi.org/10.1017/S1744137418000097>.

- Rodrik, D., Subramanian, A., & Trebbi, F. (2004). Institutions rule: The primacy of institutions over geography and integration in economic development. *Journal of Economic Growth*, 9(2), 131–165.
- Savoia, A., & Sen, K. (2015). Measurement, evolution, determinants and consequences of state capacity: A review of recent research. *Journal of Economic Surveys*, 29, 441–458.
- Staiger, D., & Stock, J. H. (1997). Instrumental variable regression with weak instruments. *Econometrica*, 65(3), 557–586.
- Stock, J. H., & Yogo, M. (2005). Testing for weak instruments in linear IV regression. In D. W. K. Andrews & J. H. Stock (Eds.), *Identification and inference for econometric models: Essays in honor of Thomas Rothenberg* (pp. 80–108). Cambridge: Cambridge University Press.
- Teorell, J., Dahlberg, S., Holmberg, S., Rothstein, B., Alvarado Pachon, N., & Svensson, R. (2017). *The quality of government standard dataset, version Jan 17*. Gothenburg: Quality of Government Institute, University of Gothenburg.
- Tilly, C. (1975). *The formation of national states in Western Europe*. Princeton, NJ: Princeton University Press.
- Weber, M. (1968). *Economy and society*. New York: Bedminster Press.
- World Bank (2011). *Worldwide governance indicators*. Washington, DC: World Bank. Retrieved November 12, 2017 from <http://info.worldbank.org/governance/wgi/index.aspx#home>.
- World Bank (2013). *World development indicators*. Washington, DC: World Bank. Retrieved November 12, 2017 from <http://data.worldbank.org/data-catalog/world-development-indicators/wdi-2012>.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.