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# Citizens, legislators, and executive disclosure: The political determinants of fiscal transparency

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**Abstract:** Empirical evidence on the beneficial effects of fiscal transparency ranges from improved budgetary outcomes, to lower sovereign borrowing costs and decreased corruption. Despite this, hardly any effort has been invested in exploring the determinants of fiscal transparency. Using a new 85-country dataset, we focus on two important sources of domestic demand for open budgeting: citizens and legislators. Our results suggest that free and fair elections have a significant direct effect on budgetary disclosure, and that they dampen the adverse effect on fiscal transparency of dependence on natural resource revenues. We also find that partisan fragmentation in the legislature is associated with higher levels of budgetary disclosure.

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# 1 Introduction

Evidence on the benefits of transparency for economic and governance outcomes is mounting (Islam 2003, Hameed 2005). With regard to budget (or fiscal) transparency, empirical studies have found that it improves fiscal performance (Alt and Lassen 2006), lowers sovereign borrowing costs (Glennerster and Shin 2008), and decreases corruption (Reinikka and Svensson 2004). The International Monetary Fund (IMF 2007a: 8) maintains that budget transparency 'helps to highlight potential risks to the fiscal outlook that should result in an earlier and smoother fiscal policy response to changing economic conditions, thereby reducing the incidence and severity of crises'.[3] Others argue that governments have a moral obligation to their citizens to be transparent about their handling of taxpayers' money and describe this as a 'basic right' (Fölscher et al. 2000: 5). In short, the case for fiscal transparency is persuasive and widely supported (for a rare skeptical view, see Heald 2003).

Despite this growing interest, hardly any effort has been invested in exploring the determinants of fiscal transparency. This is perplexing. Given the widespread agreement that fiscal transparency is desirable, surely the next question to ask is how to obtain it. Thus far, however, there is only a single quantitative study of the causes of fiscal transparency: Alt, Lassen, and Rose (2006) consider the evolution of transparent budget procedures in the US States and find that it is affected by political dynamics as well as past fiscal conditions. Surprisingly, there is no comparable published work that looks at this question with cross-national data. This paper contributes towards filling this gap with a first look at the political determinants of fiscal transparency across countries. Specifically, we explore the role of two important sources of domestic demand for fiscal transparency: citizens and legislators. As information is power, a government's decision to publish or withhold information is inherently a political decision, which we expect to be influenced by citizens through their exercise of the right to vote, and by the nature of party politics and political competition. We explore these relationships with a uniquely detailed dataset of budget transparency in 85 countries developed by the International Budget Partnership (2009a).

This analysis makes an important contribution to understanding important determinants of fiscal transparency, but it also helps to advance the literature on 'the quality of government' (La Porta et al. 1999) more generally. One of the disadvantages of this broader literature is that it relies heavily on subjective measures in its assessment of aspects of the quality of government, and on general labels such as 'government effectiveness', 'rule of law' or 'control of corruption' (Kaufmann et al. 2009). Fiscal transparency can be measured objectively, in contrast to a swathe of more amorphous measures of the quality of government. Moreover, we study a very specific attribute of the quality of government, that is, the extent to which governments provide fiscal information to the public. This

[3] The fiscal reactions to the global economic crisis that unfolded in 2008 illustrate a number of these arguments. For instance, Greece – which has repeatedly attracted international attention due to its violations of fiscal reporting standards (Koen, Vincent and Paul van den Noord, "Fiscal Gimmickry in Europe: One-Off Measures and Creative Accounting," OECD Economics Department Working Paper, no. 417 (February 2005)) – experienced a particularly sharp deterioration in its budget balance and was punished by markets with downgrades in credit ratings and higher borrowing costs (*Economist*, December 12, 2009).

approach is in line with prominent calls for the development and use of a second generation of governance indicators that are more 'institutionally specific' (Knack et al. 2003: 346). A related advantage of our approach is that, by focusing on a very concrete and specific aspect of governance, it is easier to assess the plausibility of the underlying causal arguments. In addition, the consensus around the core concept and its measurement is exceptionally strong, including rare agreement between international financial institutions and civil society organizations on the content and desirability of transparent budgetary practices (Petrie 2003). Our analysis adds a new layer of specificity to the literature on 'the quality of government'.

The paper is structured as follows: In the second section, we commence by defining fiscal or budget transparency. We also discuss the main frameworks that have been used to assess the extent of executive disclosure of fiscal information, as well as their advantages and disadvantages. In the third section, we draw on the broader literature on governance and the more limited research on fiscal transparency to develop a set of testable hypotheses about the political determinants of budget transparency. Our focus is on citizens and legislators as two major sources of demand for fiscal disclosure by the government. We conclude this part with a discussion of other covariates and related data issues. Section four reports the main results, while the conclusion assesses the implications and opportunities for further research.

# 2 Assessing the supply of fiscal information

The systematic assessment and measurement of fiscal disclosure is a relatively recent phenomenon. In little more than a decade, three major initiatives have emerged, which we review below.[4] Unlike in the broader literature on 'governance', a comparison of these initiatives reveals a strong consensus about what fiscal transparency is all about, pithily summarized by the Organization for Economic Co-operation and Development (OECD 2002: 7) as 'the full disclosure of all relevant fiscal information in a timely and systematic manner'. George Kopits and Jon Craig (1998: 1) elaborate:

> Fiscal Transparency is... openness toward the public at large about government structure and functions, fiscal policy intentions, public sector accounts, and projections. It involves ready access to reliable, comprehensive, timely, understandable, and internationally comparable information on government activities – whether undertaken inside or outside the government sector – so that the electorate and financial markets can accurately assess the government's financial position and the true costs and benefits of government activities, including their present and future economic and social implications.

One major initiative that promotes fiscal transparency, the OECD's (2002) 'Best Practices for Budget Transparency', recommends a menu of seven types of budgetary reports to maximize fiscal disclosure.

[4] Of course, there were relevant initiatives prior to this, but they focused on aspects of fiscal transparency and were not intended to underpin systematic cross-national measurement. An important example is the 'Lima Declaration of Guidelines on Auditing Precepts', first adopted at a meeting of external auditors in 1977, which set out for the first time several key standards for the independent audit of governments (International Organization of Supreme Audit Institutions, *The Lima Declaration of Guidelines on Auditing Precepts* (Vienna: International Organization of Supreme Audit Institutions, 1998).).

This list comprises a comprehensive budget with performance data and medium-term projections, a pre-budget report stating the government's economic and fiscal policy objectives and intentions over the medium term, monthly implementation updates, a more comprehensive mid-year update on budget execution, an independently audited year-end report released within six months of the end of the fiscal year, a pre-election report that illuminates the general state of government finances immediately before an election, as well as a long-term report to assess the sustainability of current policies. The OECD also recommends several specific disclosures, for instance in relation to economic assumptions, tax expenditures, pension obligations and contingent liabilities. Finally, it highlights several practices to ensure integrity and accountability. These include clear accounting policies, as well as systems that ensure effective internal financial control, external audit, and legislative scrutiny and oversight. Governments or independent researchers can use these standards to assess the transparency of budget systems, but the OECD itself does not carry out systematic assessments of member countries.

The IMF first published its 'Code of Good Practices on Fiscal Transparency' in 1998, and revised it in 2001 and 2007 (IMF 2007b). The code has four sections. The first considers the clarity of roles and responsibilities, including the role of government and the public sector in the economy, as well as the legal and administrative framework. The second section deals with public availability of information on past, current and projected fiscal activity and the timeliness of relevant publications. Open budget preparation, execution and reporting are the subject of the third part, which stresses the specification of fiscal policy objectives, the macro-economic framework, the policy basis of budget and identifiable fiscal risks. It also requires a presentation format to facilitate analysis and accountability, clear procedures for execution and monitoring, as well as regular reporting to the legislature and the public. The focus of the final section is on assurances of integrity, which entails the provision of fiscal data according to data quality standards and the independent scrutiny of fiscal information. Together with the accompanying manual (IMF 2007a), the code provides a detailed assessment framework. Unlike the OECD, the IMF formally assesses compliance with the code as part of the Reports on the Observance of Standards and Codes (ROSC) initiative. However, the IMF does not produce a composite indicator that promotes cross-national comparison, although individual researchers have used the results for this purpose (Hameed 2005). It is also important to note that the IMF cannot unilaterally prepare these reports. They require an official request by a country's government, which also has to consent to the publication of the results. By September 2010, reports for 92 countries had been published, 27 of which also had updates or complete reassessments.[5]

The International Budget Partnership, a non-governmental organization, carries out the most comprehensive effort to assess budget transparency with an explicit aim to compare disclosure across countries. Following the publication of a pilot survey in 2005, the organization at the time of writing had produced two editions of its Open Budget Index (OBI), in 2006 and 2008. The index is based on

[5] The IMF's fiscal transparency portal (http://www.imf.org/external/np/fad/trans/index.htm) provides full details and access to published country assessments.

91 questions from an extensive questionnaire, which focus on the public availability of key budget documents similar to those propagated by the OECD and the IMF: The executive budget proposal and supporting documents, an easy access summary for the wider public in the form of a 'citizen budget', a pre-budget statement, in-year reports and a mid-year review, as well as a year-end and audit reports. The index can range between zero and 100, and data are subjected to internal review as well as a peer review process, the results of which are published along with any editorial decisions (International Budget Partnership 2009a).[6] The OBI data show that in 2008 budget transparency varied greatly across the sample of 85 countries. Figure 1 summarizes the results. Countries can be divided into five groups based on their overall index scores, distinguishing governments that disclose extensive (81-100), significant (61-80), some (41-60), minimal (21-40) and scant or no information on the budget (zero to 20). The results reveal that only five countries provide extensive budget information to the public, while 25 countries present scant or no information at all.[7] The summary report published by the International Budget Partnership (2009a) provides all individual country scores and further details (see also footnote 6).

Table 1: Summary of country performance on the 2008 Open Budget Index

| Information provision | Countries |
|---|---|
| Extensive (score of 81-100) | France, New Zealand, South Africa, United Kingdom, United States |
| Significant (score of 61-80) | Botswana, Brazil, Czech Republic, Germany, Norway, Peru, Poland, Romania, Slovenia, South Korea, Sri Lanka, Sweden |
| Some (score of 41-60) | Argentina, Bangladesh, Bosnia and Herzegovina, Bulgaria, Colombia, Costa Rica, Croatia, Egypt, Georgia, Ghana, Guatemala, India, Indonesia, Jordan, Kenya, Macedonia, Mexico, Namibia, Nepal, Papua New Guinea, Philippines, Russia, Serbia, Turkey, Uganda, Ukraine, Zambia |
| Minimal (score of 21-40) | Albania, Azerbaijan, Ecuador, El Salvador, Kazakhstan, Lebanon, Malawi, Malaysia, Mongolia, Morocco, Niger, Pakistan, Tanzania, Thailand, Trinidad and Tobago, Venezuela |
| Scant or none (score of 0-20) | Afghanistan, Algeria, Angola, Bolivia, Burkina Faso, Cambodia, Cameroon, Chad, China, Democratic Republic of Congo, Dominican Republic, Equatorial Guinea, Fiji, Honduras, Kyrgyz Republic, Liberia, Nicaragua, Nigeria, Rwanda, São Tomé e Príncipe, Saudi Arabia, Senegal, Sudan, Vietnam, Yemen |

Note: For full details including country scores and questionnaires see http://www.openbudgetindex.org.

Several features make the OBI data superior to those provided by the IMF: First, while country governments can be invited to comment on the results, the OBI assessments are carried out by

[6] The homepage of the OBI provides access to all reports and individual country assessments (http://www.openbudgetindex.org).

[7] We also note that the mean score is 39 and the median 43 (skewness = -.023) and that the distribution has 'thick' tails (kurtosis = 2.015).

independent researchers, do not require government consent and cannot be censored.[8] In contrast, the IMF data are only for countries that agreed to their assessment as well as the publication of the results, which introduces the problem of self-selection bias (Rosendorff and Vreeland 2006, Ross 2006). Second, the OBI initiative collects data across countries simultaneously, so that the dataset provides a comparative snapshot of fiscal transparency at one point in time. Some of the IMF's assessments, on the other hand, were carried out more than a decade apart, such as those of Argentina (April 1999) and Thailand (August 2009). Changes in transparency practices may occur during such a period, as indicated by some countries for which the IMF was allowed to produce and publish regular updates. Finally, the IMF relies heavily on governmental co-operation in carrying out the assessment of fiscal transparency. This can undermine the quality of the data. For instance, an update for Greece – published in the wake of the country's infamous large-scale fiscal data revisions in 2004 (Eurostat 2004) – bluntly admits that 'the mission often did not have the opportunity of verifying and cross-checking the information provided by the authorities' (IMF 2005: 1). The independence of the OBI research process, including peer review and documentation of the results, makes it far less susceptible to manipulation by governments. Overall, therefore, the OBI has a number of crucial advantages over the IMF data, and provides a superior basis for exploring the political determinants of fiscal transparency.

# 3 Sources of demand for fiscal disclosure

Given such great differences in the levels of budget transparency across countries, what do we know about the determinants of this variation? The International Budget Partnership (2009a: 18-19) briefly discusses and presents evidence on a number of factors that are associated with significant variance in budget transparency scores. These include geographical location, level of income, dependency on revenues resulting from foreign aid flows and natural resource extraction, as well as the quality of democracy. It presents some bivariate analysis and finds significant differences in the average scores between groups of countries categorized on the basis of these variables. It also detects significant outliers within each group. For example, while the average score for Sub-Saharan Africa is among the lowest, South Africa and Botswana both score high on the index. Among oil-producing countries, whose average score for budget transparency is significantly lower than for the whole sample, Colombia, Mexico, and Norway still perform strongly. No attempt, however, is made at multivariate analysis, to assess the joint contribution of these factors. Moreover, who exactly promotes fiscal transparency, as well as how and why, requires further exploration. As a step towards further understanding the determinants of transparency, we identify the relevant actors who may have incentives to demand disclosure of budgetary information. Specifically, we investigate two crucial sources of demand: citizens and legislators. We then turn to some other factors that need to be taken into account in the empirical analysis.

[8] While 61 governments were invited to comment on the results of the 2008 survey, only five – El Salvador, Guatemala, Norway, South Africa and Sweden – chose to do so (International Budget Partnership, "The Open Budget Survey 2008," International Budget Partnership (2009a), p. 12).

The idea that citizens have a right to fiscal information has a venerable tradition. The Declaration of the Rights of Man and the Citizen in 1789, a fundamental document of the French Revolution, went as far as declaring fiscal transparency a universal right.[9] Yet, this right is unlikely to be fulfilled without a mechanism that helps to ensure disclosure. Where governing power is derived from free and fair elections, citizens as voters have access to such a mechanism – the ballot box – that allows them to get rid of executives that govern badly. This, in turn, can affect transparency levels (Brender and Drazen 2005: 1290). Rosendorff and Vreeland (2006) formally consider the effect of elections on the supply of economic information by the executive. In their model, voters use the ballot box to discipline governments for poor economic management. Even governments that moderate their levels of rent extraction run a risk of being unfairly evicted from office when voters misattribute blame for poor outcomes. To minimize this risk, governments may choose to enhance the credibility of information about their actions, despite the fact that this reduces their rent-extraction opportunities. They summarize (p. 15): 'Those policymakers more accountable to their electorates are more likely to be unfairly dismissed, and therefore are more likely to offer up, or provide access to, credible data. Hence those polities characterized by more electoral accountability will be more transparent.' As an empirical test, Rosendorff and Vreeland assess whether democracies are more likely than authoritarian regimes to disclose information on inflation, unemployment, growth, and infant mortality; this is indeed the case. Our data allow a direct test of their hypothesis with regard to fiscal information.

> *H1: Governments that are subject to free and fair elections provide more and better fiscal information than those that are not, ceteris paribus.*

To investigate this hypothesis, we require a measure of electoral accountability. There is an array measures of democracy, some of which are more precisely focused on elections than others (Munck and Verkuilen 2002). Clearly linked to our hypothesis is a 'minimalist' dichotomous measure proposed by Cheibub, Gandhi, and Vreeland (2010). They classify a regime as a democracy if it satisfies four conditions, including the popular election of both the chief executive and the legislature, the presence of more than one party competing in the elections, and at least one past occurrence of alternation in power under stable electoral rules. This definition is highly transparent, and it captures the most fundamental essence of democratic rule, that political power needs to be contested and decided through regular elections. We call this variable Democracy (C). Our second measure is the Polity IV composite score (Marshall et al. 2010), which goes beyond the existence of contested elections to include in its definition of democracy the existence of institutionalized constraints on executive power, and the competitiveness of political participation. This is a less precise operationalization of the key concept we wish to capture, so we use it mainly as a robustness check. One benefit of this second data source is that it covers an extended time period. This is useful for a related variable that we discuss further below. We label this second measure Democracy (P). For both of these variables, we

[9] According to article 14, '[a]ll citizens have the right to ascertain, by themselves, or through their representatives, the need for a public tax, to consent to it freely, to watch over its use, and to determine its proportion, basis, collection and duration.' In addition, article 15 demands: 'Society has the right to ask a public official for an accounting of his administration.'

average data over the 2000 to 2006 period, so as to capture a broader pattern rather than a one-year observation, which may be atypical. The correlation between the two measures is 0.79. We also considered using the widely known Freedom House scores. However, this measure exhibits 'problems in all three areas of conceptualization, measurement, and aggregation' (Munck and Verkuilen 2002: 28). We nonetheless experimented with these data and obtained similar substantive results. However, due to lack of theoretical fit as well as data quality concerns, we limit our presentation of results to those with the first two measures.

Underpinning Rosendorff and Vreeland's (2006) accountability mechanism is an assumption that voters have the ability to interpret fiscal information. This, however, may not necessarily be the case, as indicated by findings in the literature on the relationship between elections and fiscal policy outcomes. Brender and Drazen's (2005) analysis, based on a large and diverse panel dataset, finds that electoral budget cycles can be observed in new democracies but not in established ones. They attribute this phenomenon to a 'learning process' (p. 1292), where fiscal literacy increases over time as voters find out how to extract budgetary information and become less susceptible to manipulation (see also Shi and Svensson 2006). These results suggest that Rosendorff and Vreeland's (2006) accountability effect may take time to emerge, and increase as voters accumulate experience with electoral politics. In addition, O'Donnell (1998) has argued persuasively that, in countries where experience with authoritarianism is relatively recent, and in particular when this experience was long lasting, even democratically elected executives at times are tempted to resist and undermine electoral accountability. If these arguments are correct, new democracies may suffer from a lack of budget literacy on the demand side and executive recalcitrance on the supply side, which weakens the accountability effect identified by Rosendorff and Vreeland (2006). We therefore expect the positive effect of electoral accountability on fiscal transparency to be stronger in mature democracies, and weaker in countries with a shorter history of democracy.

> *H2: Countries with a long history of free and fair elections have governments that provide more and better fiscal information than others, ceteris paribus.*

To capture the maturity of electoral accountability, we use a measure of democratic age developed by Persson and Tabellini (2003). They use an uninterrupted string of positive yearly Polity scores, measured on a scale from -10 (for strongly autocratic) to 10 (for strongly democratic), to construct the ratio of continuous democratic years over the sample period. We use the latest version of the Polity dataset, for the years 1800 to 2006, to construct a variable we call Age (P). The data collected by Cheibub et al. (2010) cover a shorter time period, starting after the end of World War II. We extract their data for the years 1946 to 2006 and calculate a second age score, labeled Age (C), based on the ratio of years over this period in which the authors classify a country as a democracy. Due to the different underlying definitions as well as the different time periods covered by the two data sources, we obtain rather different assessments of democratic age for some countries. For instance, Polity assigns positive scores to Botswana for the entire post-independence period, whereas Cheibub and

colleagues classify it as a non-democracy, as the required alternation in power has not yet taken place. Still, the correlation between our two measures of democratic age, with a coefficient of 0.76, is fairly strong. In the empirical section, we report results obtained with both of these.

Whether citizens demand disclosure is, however, also likely to be linked to the sources of revenue that governments rely on. Fiscal sociologists have long argued that 'sources of state revenues have a major impact on patterns of state formation' (Moore 2004: 297; see also Levi 1988, Tilly 1990, Bräutigam et al. 2008). States are likely to become more accountable the more they depend on taxing their own citizens for revenues, rather than on 'rents'. In this literature, direct taxation is seen to entail a social contract, or, as Moore (2004: 310) puts it, a 'negotiated relationship between the state apparatus and society'. The underlying idea is highly intuitive: If governments spend money they extract from citizens, the latter are more likely to demand accountability – and revolt if it is not forthcoming, as English, American, or French history illustrates. However, reliance on revenues from natural resources, such as oil, most likely dampens demand for accountability, as people care less about these funds than their own money. Moreover, abundant resource revenues allow governments to dispense patronage (Ross 2001: 332-334; see also Jensen and Wantchekon 2004). As a result, we can expect fiscal transparency to be lower in countries with abundant natural resources. We already have some evidence to support this hypothesis. Using earlier OBI data, from the 2006 survey, de Renzio, Gomez, and Sheppard (2009) find that resource-dependent countries suffer from a 'transparency gap'. For non-resource-dependent countries, the average index score is 50, while resource-dependent countries average 40. Further analysis of the 2006 data by Michael Ross (reported in International Budget Partnership 2009b) finds a negative correlation between a country's oil production and fiscal transparency. We provide a more thorough test of this hypothesis.

> *H3: Governments reliant on rents from natural resources provide less and worse fiscal information than others, ceteris paribus.*

However, this proposition appears at odds with the experience of countries such as Norway or Colombia, which achieve relatively high levels of transparency despite their oil dependence. Are these merely outliers, or do these examples suggest a more complex relationship between resource dependency, democracy, and fiscal transparency? Norway and Colombia's politicians may be less prone (and less able) to misuse oil revenues because they know that voters can respond by kicking them out of office at the next election. Similar to the argument by Rosendorff and Vreeland (2006), electorally accountable politicians may have incentives to increase transparency, so as to preempt any suspicions that resource revenues are mismanaged or stolen. In countries where no regular elections are held and where effective political competition is stifled, an opposite vicious circle might take hold instead, with governments ensuring that opaque budget systems allow them to divert oil revenues as unobservable as possible. The existing literature focuses on the link between resource dependency and democracy, and does not directly address this possibility (Ross 2001, Jensen and Wantchekon 2004). We add a new twist to this literature, by exploring the possibility that the governance impact of

natural resource dependency is conditional. More precisely, we test whether resource dependency is likely to negatively affect fiscal transparency only in countries with weakly entrenched or dysfunctional democratic institutions.

> *H4: Governments reliant on revenues from natural resources provide more and better fiscal information if electoral accountability is strong, but limit disclosure when electoral accountability is weak, ceteris paribus.*

To capture resource dependence, we use the value of oil and gas production per capita, in constant year 2000 US dollars, logged and averaged over the period 2000 to 2006. Michael Ross generously shared these data with us. We considered alternative measures such as oil rents, which net out extraction costs (Ross 2008). Due to the poor quality of estimates for extraction costs, we prefer to work with the value of the produced amounts instead. In addition, we experimented with dichotomous measures of resource dependency based on the IMF's (2007c: 62-63) classification of countries as hydrocarbon and mineral-rich. Although we do not present any of these results here, the use of these alternatives did not substantially affect our main findings.

The legislative arena provides a second potential source of demand for fiscal information, and the literature offers some clues about the conditions under which this demand is likely to be greatest. For instance, research on parliamentary committees highlights their role in monitoring and enforcing coalition agreements (Hallerberg 1999, Martin and Vanberg 2004). This work suggests that legislators' demand for information about executive actions may be lower under single-party majority governments. Alt, Lassen and Rose (2006) are, to our knowledge, the only authors to investigate directly the way in which partisan dynamics affect the level of fiscal transparency, based on data for US States. Their most robust finding is that political competition has a positive association with fiscal transparency. They use three different measures of political competition, namely divided government, as well as gubernatorial and legislative competition measures based on vote and seat shares, respectively. The underlying logic is that politicians who share policy-making authority under divided government, or who are faced with a high probability of losing power in the next election, have incentives to attempt to tie the hands of their competitors with reforms that promote transparency and reduce discretion. However, an alternative interpretation is possible. Messick (2002) notes that opposition party members have greater demand for credible information about the executive's actions than members from the governing majority, and goes on (p. 3): '[T]he more the opposition uses such information to criticize government, the greater the majority's interest in abolishing or weakening the units that provide it.' In short, political competition may induce governments to limit disclosure, by withholding or obfuscating information that may be used to scrutinize and criticize their actions. Our analysis contributes a first direct test of this relationship in a cross-national setting.

> *H5: Governments that have strong political competition provide more and better fiscal information than those with low competition, ceteris paribus.*

To capture political competition, we require a measure that 'travels' well across a very diverse set of political systems. The variables used by Alt et al. (2006) make sense for the US context, which is characterized by two-party competition, but are difficult to translate into multi-party settings, for instance. Instead, we use a Herfindahl-based measure of partisan fragmentation calculated with the seat shares of political parties represented in the legislature, similar to those frequently used in comparative work on party systems (Laakso and Taagepera 1979, Lijphart 1999). The idea behind our measure is that executive control of the legislature is more difficult the more parties are represented, and the more evenly their power is distributed. We take the sum of the squared seat shares of all parties represented, with independents treated as single-seat parties for this purpose, and subtract them from one (Persson et al. 2007: 174). The resulting index of partisan fragmentation takes a value of zero if a single party occupies all seats in the legislatures, and a value of very close to one if each seat belongs to a different political party. To calculate this measure, we extract annual Herfindahl scores based on legislative seat shares from the 2008 version of the World Bank's Database of Political Institutions (Beck et al. 2001). Again, we average over the 2000 to 2006 period to capture the recent pattern. We also experimented with a measure of divided government, defined as 'the absence of simultaneous same-party majorities in the executive and legislative branches of government' (Elgie 2001: 2). However, we were not confident that our source data systematically captures the extent of legislative support for governments, for example in situations where a governing party had a legislative co-operation agreement with another party that did not however join the cabinet. For this reason, we rely on our measure of partisan fragmentation, although we also ran robustness checks with our second indicator and in most instances obtained broadly consistent results.

While the focus of our analysis is firmly on the role of citizens and legislators, we also need to take into account other variables that are likely to impact on transparency levels. The list of potential candidates is long, but we are mindful to avoid the trap of 'garbage-can regressions' (Achen 2005) or 'kitchen-sink models' (Schrodt 2010) in which swathes of poorly theorized and correlated 'controls' are dumped on the right-hand side of regression equations. Borrowing from La Porta et al.'s (1999) classic piece on 'the quality of government', we include a small set of covariates: indicators of legal origin, the log of GDP per capita, a measure of ethno-linguistic fractionalization, and a measure of distance from the equator. The latter two have been identified in the governance literature as contributing to poor outcomes, and can plausibly be treated as exogenous. We briefly comment on the former two, before discussing other relevant variables.

The design of budget systems, including its level of transparency, is linked to the overall administrative machinery in each country. This includes the division of responsibilities among different parts of government for producing and checking the accuracy of budget information produced by the executive. For example, while in some countries the auditing of public accounts is carried out by an entity that reports to the legislature, in others this function belongs to a special arm of the judiciary (Santiso 2009). These and other institutional arrangements can be the result of historical

circumstances and of institutional 'path dependency' (North 1990). For instance, Lienert (2003) and Andrews (2009) trace the effect of administrative heritage on budget systems in former African colonies. The governance literature has looked at legal origin and assessed its impact on countries' subsequent economic performance. La Porta et al. (1999) find that more interventionist legal traditions based on common law predict inferior government performance on a range of indicators, including corruption, than those based on the British civil law tradition. Here, we are interested to see whether there is a relationship between administrative heritage, as captured by legal origin, and fiscal transparency.

Another consistent finding across the broader literature on governance is that richer countries achieve better transparency and governance standards (Kaufmann and Kraay 2002, Bellver and Kaufmann 2005). However, reverse causality problems loom large. Indeed, many scholars have sought to establish causal links from governance to wealth or economic growth, arguing that it is better institutions that bring about higher levels of economic wellbeing (examples include Barro 1991, Knack and Keefer 1995, Keefer and Knack 1997, Acemoglu et al. 2001). Rodrik (2008: 2) even asserts that 'the existence of a *causal* link from [good governance] to [high incomes] is now… widely accepted'. However, Kurtz and Schrank (2007) point out that the low quality of existing measures of governance makes it hard to establish a convincing link with economic performance. Here, we use a much better measure of an important aspect of governance than in most of this literature, but we make no causal arguments involving economic wealth and fiscal governance. More modestly, we include this variable to test the IMF's (2007a: 8) claim that fiscal transparency is 'potentially achievable by countries at all levels of economic development'. If we find a strong positive correlation between GDP per capita and fiscal transparency, we would have reasons to doubt this perhaps optimistic view, and to dig deeper in follow-on research.

For all variables covered in this study, we provide definitions and sources in Appendix I and summary statistics in Appendix II. Of course, there are additional factors that we might have included. Notably, Alt et al. (2006) find that transparency improvements often follow periods of fiscal distress. However, other studies suggest that transparency is a cause of fiscal performance (Hameed 2005). To tackle reverse causality issues, a convincing cross-country test of this relationship requires panel data, which we do not have. We also contemplated the inclusion of variables that fiscal sociologists identify as determinants of accountability, such as tax revenues or income from direct taxes. The inclusion of these variables raises the problem of selection bias, as low-transparency countries are also, by definition, less likely to provide the required fiscal data (Rosendorff and Vreeland 2006). We collected relevant fiscal data for our sample of countries, using the standard datasets from the World Bank and the IMF, and detected a pattern of missing observations that confirmed this expectation. Using these data would not only reduce the size of our sample (by one third and more); it would also mean that our estimates could only capture small differences in a group of high-transparency countries. Finally, it we also considered exploring the effect of donors on fiscal transparency in aid-dependent countries. However, such an analysis is so riddled with endogeneity problems that we lack a credible empirical

strategy with the available data. Hence, while we acknowledge that there are important angles that we do not cover, the current data limitations are such that these can only be tackled fruitfully in follow-up research.

# 4 Results

As discussed, our baseline model includes a dummy for civil law countries, logged GDP per capita, ethno-linguistic fractionalization, and distance from the equator. We also experimented with more fine-grained measure of legal origin, as introduced in La Porta et al. (1999). However, when we used separate indicators for French, German, Scandinavian, and Socialist legal origin, we found that the sign on the coefficients in our baseline model was identical and their magnitude was very similar.[10] Since this is not the main focus of our inquiry, we conserve degrees of freedom and present only results with our rougher but more parsimonious measure of legal origin, which reflects the most basic distinction by La Porta et al. (2008: 288) between common law and civil law countries.

Next, we add our measures of democracy to the baseline model (see Table 2). We first include Cheibub et al.'s democracy measure (column 1) and then our measure of democratic age based on the same dataset (column 2). Both of these are strongly correlated with fiscal transparency, but when we include these variables simultaneously only the current level of democracy has a highly significant coefficient (column 3). According to these estimates, a switch from autocracy to democracy improves fiscal transparency by almost 20 points. As a robustness check, we repeat the same specifications, but this time using the Polity data to measure democracy. The results are substantively very similar (columns 4-6). One difference is in the size of the coefficients, which are twice as large when we use the Polity data, most likely because this variable is more fine-grained than the variable by Cheibub and colleagues. Another difference is that when both current levels as well as the age of democracy are included simultaneously, the coefficient on the latter achieves significance, although only at the 10 percent level. Overall, the estimates effects of democratic age are much smaller than those for recent levels of democracy. These results suggest that high levels of transparency do not rely on a slow process of democratic maturation that may take decades or even centuries. This is particularly encouraging for reformers, as it suggests the possibility of rapid improvements in transparency (for an example, see Robinson and Vyasulu 2008).

[10] In a later paper, La Porta et al. (La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer, "The Economic Consequences of Legal Origins," *Journal of Economic Literature*, vol. 46, no. 2 (2008), p. 288) drop the Socialist category and group countries according to what they consider their legal origin prior to a country's pre-Russian Revolution or pre-World War II legal system. We also tried out this alternative definition, which had little effect on our results.

Table 2: Democracy and fiscal transparency

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Democracy (C) | 18.76<br>(4.64)*** | | 18.20<br>(4.71)*** | | | |
| Age (C) | | 21.38<br>(8.53)** | 1.59<br>(8.50) | | | |
| Democracy (P) | | | | 39.37<br>(8.46)*** | | 35.31<br>(8.20)*** |
| Age (P) | | | | | 37.70<br>(15.56)** | 18.66<br>(10.50)* |
| Ethno-linguistic fractionalization | 16.00<br>(9.80) | 13.13<br>(10.62) | 16.12<br>(9.88) | 6.26<br>(8.80) | 8.97<br>(10.09) | 6.43<br>(8.78) |
| Civil law | -13.81<br>(4.87)*** | -12.16<br>(5.69)** | -13.70<br>(5.04)*** | -12.78<br>(4.49)*** | -9.11<br>(6.20) | -10.58<br>(4.76)** |
| GDP per capita | 7.61<br>(1.62)*** | 6.52<br>(2.29)*** | 7.47<br>(2.03)*** | 5.38<br>(1.57)*** | 5.90<br>(2.39)** | 4.08<br>(1.92)** |
| Latitude | 45.63<br>(11.07)*** | 44.69<br>(12.72)*** | 45.71<br>(11.19)*** | 40.59<br>(10.91)*** | 42.24<br>(12.77)*** | 40.76<br>(11.03)*** |
| Constant | -36.91<br>(12.93)*** | -22.93<br>(15.92) | -36.06<br>(14.36)** | -32.36<br>(12.82)** | -17.52<br>(16.14) | -23.91<br>(14.23)* |
| | | | | | | |
| Observations | 85 | 85 | 85 | 82 | 85 | 82 |
| Adjusted R-squared | 0.56 | 0.49 | 0.55 | 0.57 | 0.49 | 0.58 |

Notes: Ordinary least squares regressions. The dependent variable is the 2008 OBI. Robust standard errors are in parentheses.
* Significant at 10%; ** significant at 5%; *** significant at 1%.

The results in Table 2 are also in line with our expectations with regard to most of the covariates. Civil law regimes are associated with lower levels of budget transparency, whereas GDP per capita and distance from the equator have a positive correlation. The coefficients on these three variables are highly significant across most of the specifications reported in Table 2, with the exception of civil law in column 5. The coefficient on ethno-linguistic fractionalization has a positive sign, which is unexpected. However, it fails to achieve statistical significance at standard levels across all models.

We proceed to explore the effect of natural resource dependency on fiscal transparency. Table 3 reports the results. The model in column (1) includes a direct effect only, which has the expected sign but only achieves significance at the 10 percent level. In column (2) we test whether in countries with mature democracies, natural resource dependence may not adversely affect the quality of governance. This type of argument may explain why countries such as oil-rich Norway are highly regarded in terns of the quality of their governance, including fiscal transparency (Anderson et al. 2006). The results do not support this reasoning; the interaction term is not statistically significant. In column (3), we report an alternative specification, where we interact resource dependency with current levels of democracy. This assumes that the effect of resource dependency on fiscal transparency is conditioned by the current accountability context rather than its historical maturity. In contrast to the previous result, we find a statistically significant interaction between the two variables.

In other words, recent levels of democracy, rather than democratic age, seem to condition the effect of resource dependency on fiscal transparency. These findings are robust to the use of alternative data to measure democracy and its maturity (columns 4 and 5).

Table 3: Resource dependency and fiscal transparency

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| Oil and gas per capita | -1.14<br>(0.64)* | -1.41<br>(0.75)* | -2.20<br>(0.80)*** | -0.88<br>(0.73) | -3.24<br>(1.36)** |
| Age (C) | | 15.16<br>(9.69) | | | |
| Democracy (C) | | | 11.96<br>(4.54)** | | |
| Age (P) | | | | 38.89<br>(19.23)** | |
| Democracy (P) | | | | | 21.39<br>(9.61)** |
| Oil and gas per capita x Age (C) | | 1.47<br>(1.81) | | | |
| Oil and gas per capita x Democracy (C) | | | 2.70<br>(1.15)** | | |
| Oil and gas per capita x Age (P) | | | | -0.89<br>(2.82) | |
| Oil and gas per capita x Democracy (P) | | | | | 4.15<br>(1.81)** |
| Ethno-linguistic fractionalization | 8.71<br>(10.36) | 11.42<br>(10.11) | 10.83<br>(8.61) | 9.18<br>(9.95) | 4.23<br>(8.97) |
| Civil law | -12.88<br>(5.95)** | -10.68<br>(5.75)* | -11.43<br>(4.53)** | -9.06<br>(6.36) | -11.98<br>(4.24)*** |
| GDP per capita | 10.28<br>(1.77)*** | 7.58<br>(2.22)*** | 7.44<br>(1.65)*** | 7.14<br>(2.30)*** | 6.10<br>(1.68)*** |
| Latitude | 41.52<br>(13.13)*** | 41.85<br>(12.99)*** | 42.78<br>(10.97)*** | 42.26<br>(13.07)*** | 38.59<br>(11.10)*** |
| Constant | -39.19<br>(15.96)** | -26.55<br>(16.66) | -29.09<br>(12.94)** | -24.41<br>(16.40) | -22.78<br>(14.51) |
| Oil and gas per capita \| Age (C) = 1 | | 0.06<br>(1.49) | | | |
| Oil and gas per capita \| Democracy (C) = 1 | | | 0.50<br>(0.82) | | |
| Oil and gas per capita \| Age (P) = 1 | | | | -1.78<br>(2.44) | |
| Oil and gas per capita \| Democracy (P) = 1 | | | | | 0.90<br>(0.86) |
| | | | | | |
| Observations | 85 | 85 | 85 | 85 | 82 |
| Adjusted R-squared | 0.47 | 0.50 | 0.60 | 0.50 | 0.59 |

Notes: Ordinary least squares regressions. The dependent variable is the 2008 OBI. Robust standard errors are in parentheses.

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

The results in Table 3 require additional interpretation in order to estimate the effect of resource dependency in democratic countries (Kam and Franzese 2007). We present these additional calculations at the bottom of Table 3. In countries with a democracy score of one (the highest level), such as Norway, the estimated effect of being resource dependent is to increase fiscal transparency by 2.70 - 2.20 = .50, with a standard error of .82 ($p$ = .54). On the other hand, for a country without free elections (democracy = 0), such as Sudan, the estimated effect of a log-unit increase in natural resource revenues is -2.20, with a standard error of .80 ($p$ < .01). In other words, resource dependency has a statistically significant effect on fiscal transparency only for countries that lack free and fair elections. In fully democratic countries, the effect is positive but not statistically significant, while in countries without free and fair elections, the effect is negative and highly statistically significant. It appears that autocratic rulers have incentives to further limit disclosure when they gain the possibility to extract rents from natural resources. This conditional effect of natural resource dependency is robust to the use of our alternative measure of democracy, based on Polity data (column 4). These results bode well for a country such as Ghana, where the imminent exploitation of offshore oil reserves discovered in 2007 takes place in a context of relatively recent but vibrant electoral competition that in 2009 led to the second peaceful and constitutional transfer of executive power since 1992.

Finally, we turn to testing the effect of partisan fragmentation in the legislature on fiscal transparency and report our results in Table 4. When we add partisan fragmentation to the basic model, we get a highly significant and substantively large effect (column 1). A switch from single party rule to a situation where every single legislator hails from a different political party is predicted to increase a country's transparency score by about 40 points. More realistically, an increase from two to three parties with equal seat shares in the legislature (i.e., an increase in partisan fragmentation from .5 to .67) is predicted to add about seven points. As a robustness check, we instrument partisan fragmentation with two indicators of the electoral system, capturing the use of a pure proportional representation system as well as mixed systems that combine proportional representation with elements of plurality systems (for a similar approach, see Persson et al. 2007). Systems based on proportional representation, compared with majoritarian systems, tend to encourage partisan fragmentation in the legislature (Lijphart 1999). We assume that the type of electoral system affects fiscal transparency, but only through its effect on partisan fragmentation in the legislature. The results of the first-stage regression are very reassuring (column 32). We reject the hypothesis that the coefficients on our instruments are both zero with an F-statistic of 10; weak instruments are not a concern (Stock and Watson 2007: 441). In the second stage, the size of the coefficient on partisan fragmentation is almost unchanged, and it achieves significance at the 5 percent level (column 3). Our instruments also pass a test of the over-identification restrictions, based on a comparison of the estimates obtained when using each instrument separately. While this is no guarantee that the instruments are indeed exogenous, the test does provide additional assurance.

Table 4: Partisan fragmentation and fiscal transparency

| | (1) Open Budget Index | (2) Partisan fragmentation | (3) Open Budget Index | (4) Open Budget Index | (5) Open Budget Index | (6) Partisan fragmentation |
|---|---|---|---|---|---|---|
| Partisan fragmentation | 41.79 (11.86)*** | | 42.21 (21.23)** | 71.53 (17.12)*** | | 88.22 (57.49) |
| Ethno-linguistic fractionalization | 3.35 (8.97) | 0.05 (0.10) | 3.29 (8.94) | 4.09 (10.55) | 0.06 (0.10) | 3.48 (10.35) |
| Civil law | -18.08 (4.49)*** | -0.02 (0.06) | -18.13 (4.91)*** | -18.00 (4.09)*** | -0.02 (0.05) | -19.18 (6.62)*** |
| GDP per capita | 7.92 (1.55)*** | -0.00 (0.02) | 7.92 (1.53)*** | 8.88 (1.71)*** | 0.01 (0.01) | 8.60 (1.75)*** |
| Latitude | 36.71 (11.20)*** | 0.21 (0.12)* | 36.64 (11.32)*** | 32.27 (11.87)*** | -0.02 (0.09) | 33.42 (10.69)*** |
| Proportional electoral system | | 0.22 (0.05)*** | | | 0.13 (0.06)** | |
| Mixed electoral system | | 0.20 (0.05)*** | | | 0.06 (0.05) | |
| Constant | -42.12 (13.00)*** | 0.42 (0.17)** | -42.23 (13.38)*** | -65.21 (18.50)*** | 0.48 (0.16)*** | -73.46 (32.18)** |
| Method | OLS | OLS | 2SLS | OLS | OLS | 2SLS |
| First-stage F (instruments = 0) | | 10.04 | | | 3.80 | |
| Over-identification: Wooldridge robust score test (df) | | | 1.33 (1) | | | 0.81 (1) |
| Sample | Full | Full | Full | Democratic | Democratic | Democratic |
| Observations | 83 | 83 | 83 | 53 | 53 | 53 |
| Adjusted R-squared | 0.52 | 0.24 | | 0.64 | 0.12 | |

Notes: Robust standard errors are in parentheses. * Significant at 10%; ** significant at 5%; *** significant at 1%.

Our sample includes a substantial number of countries where legislative representation is not based on free and fair elections, which makes the underlying mechanism less plausible. As a further robustness check, we exclude countries that Cheibub et al. (2010) classify as non-democratic in all years during the 2000 to 2006 period. The estimates with this restricted sample are very similar for all of the control variables, but not for the coefficient on partisan fragmentation, which nearly doubles in size (column 4). The effect of partisan fragmentation is greatest with free and fair elections. The corresponding results for the reduced sample tell a very similar story (columns 5 and 6), although in this case we have a weak instruments problem that may bias the estimator and affect the reliability of the confidence intervals. Finally, we obtained similar results (not reported) with alternative measures of political competition, including the 'effective number of parties' (Laakso and Taagepera 1979) and a measure of divided government.

# 5 Conclusions

Our analysis shows that domestic political factors play a crucial role in determining the level of fiscal transparency. Free and fair elections have a significant direct effect on budgetary disclosure (H1), and we find somewhat weaker evidence that democratic maturity also increases fiscal transparency (H2). Oil wealth has the expected negative effect on fiscal disclosure (H3), but the finding is rather weak. We obtain stronger evidence that recent experience with free and fair elections, but not democratic maturity, dampens the adverse effect on fiscal transparency of dependence on natural resource revenues (H4). Finally, we obtain very robust results that partisan fragmentation in the legislature is associated with higher levels of budgetary disclosure (H5). This last result, obtained with cross-national data, nicely complements work by Alt and colleagues (2006) based on panel data from US States, who find that political competition is one of the main causes of fiscal transparency. Overall, our findings suggest that citizens and legislators are important sources of demand for fiscal transparency.

Of course, these are initial results that should be built upon with follow-up work. Notably, further waves of the data collection on fiscal transparency practices will eventually allow the construction of a panel dataset with which the relevance of some of the factors identified here can be studied by exploiting within-country variation. It will take a few more years before such an analysis makes statistical sense, but each successive wave of the survey makes the approach more feasible. Until then, it could be useful to further explore the factors highlighted in our analysis using a more in-depth qualitative approach that tracks the evolution of fiscal transparency in a few carefully selected cases that have undergone substantial reform or backsliding, or both.

We conclude by highlighting two broader substantive implications of this analysis. First, our research highlights the potential of a more focused approach for research on the quality of governance. Fiscal transparency is a widely accepted feature of well-run governments, and we can assess its relative presence or absence more objectively than is possible with more abstract catch-all notions of 'good governance'. Moreover, our targeted inquiry allows clearer exposure of the possible causal mechanisms. The broader debate on the determinants of the quality of governance requires more work along these lines. In terms of policy implications, our results suggest that donors and other external partners who strive to improve governance should pay close attention to domestic politics. Given the fundamental importance of citizens and voters as sources of demand for disclosure, we have strong doubts that external initiatives can achieve progress by trying to impose fiscal accountability where internal demand is weak.

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# Appendix

## Appendix I: Variable definitions and sources

*Age (C):* Age of democracy, calculated as (2007 - first year of democratic rule) / 61, ranges from 0 to 1. The first year of democratic rule corresponds to the first year of a string of years classified as democratic in the Democracy-Dictatorship (DD) dataset. Source: Cheibub et al. (2010).

*Age (P):* Age of democracy, calculated as (2007 - first year of democratic rule) / 207, ranges from 0 to 1. The first year of democratic rule corresponds to the first year of a string of positive yearly values of Polity scores. Source: http://www.systemicpeace.org/polity/polity4.htm.

*Civil law:* Dummy variable, equal to 1 if the legal origin of a country is in French, German, Scandinavian or Socialist law, 0 otherwise (indicating countries with a common law legal origin). Source: La Porta et al. (1999).

*Democracy (C):* Democracy scores in the Democracy-Dictatorship (DD) dataset, averaged over the period 2000 to 2006. Scores range from 0 (always undemocratic) to 1 (always democratic). Source: Cheibub et al. (2010).

*Democracy (P):* Revised Combined Polity Scores in the 2008 dataset of the Polity IV project, averaged over the period 2000 to 2006. Rescaled to range from 0 (always completely undemocratic) to 1 (always completely democratic). Source: http://www.systemicpeace.org/polity/polity4.htm.

*Ethno-linguistic fractionalization:* The average of the available data for ethnic and linguistic fractionalization. Source: Alesina et al. (2003).

*GDP per capita:* Natural log of GDP per capita in constant US$, base year 2000, averaged over the period 2000 to 2006. Source: World Bank (2008).

*Latitude:* The absolute value of the latitude of a country's capital city, divided by 90 so as to take theoretical values between 0 and 1. Source: La Porta et al. (1999).

*Mixed electoral system:* Dummy variable, equal to 1 if the country uses a mixed electoral system combining proportional representation with plurality elections, 0 otherwise. Source: http://www.idea.int/esd/world.cfm.

*Oil and gas per capita:* Natural log of the value of oil and gas production per capita in constant US$, base year 2000, averaged over the period 2000 to 2006. Source: Personal correspondence from Michael Ross.

*Open Budget Index*: The degree of budget transparency in 2008, ranging from 0 (complete lack of transparency) to 100 (full transparency). Sources: International Budget Partnership (2009a), http://www.openbudgetindex.org.

*Partisan fragmentation:* One minus the sum of the squared seat shares of all parties in the legislature. Independents are counted as single-member political parties. Source: Beck et al. (2001; April 2008 update).

*Proportional electoral system:* Dummy variable, equal to 1 if the country uses a proportional representation electoral system, 0 otherwise. Source: http://www.idea.int/esd/world.cfm.

## Appendix II: Summary statistics

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| Age (C) | 85 | 0.25 | 0.32 | 0.00 | 1.00 |
| Age (P) | 85 | 0.13 | 0.20 | 0.00 | 1.00 |
| Civil law | 85 | 0.69 | 0.46 | 0.00 | 1.00 |
| Democracy (C) | 85 | 0.58 | 0.48 | 0.00 | 1.00 |
| Democracy (P) | 82 | 0.71 | 0.27 | 0.00 | 1.00 |
| Ethno-linguistic fractionalization | 85 | 0.43 | 0.26 | 0.00 | 0.93 |
| GDP per capita | 85 | 7.30 | 1.43 | 4.45 | 10.58 |
| Latitude | 85 | 0.27 | 0.19 | 0.00 | 0.69 |
| Mixed electoral system | 84 | 0.17 | 0.37 | 0.00 | 1.00 |
| Oil and gas per capita | 85 | 2.30 | 3.72 | -2.30 | 9.35 |
| Open Budget Index | 85 | 39.44 | 25.36 | 0.00 | 88.27 |
| Partisan fragmentation | 83 | 0.60 | 0.20 | 0.00 | 0.93 |
| Proportional electoral system | 84 | 0.44 | 0.50 | 0.00 | 1.00 |

Note: Refer to the data appendix in Appendix I for full variable definitions and sources.