Shades of red and blue: Government ideology and sustainable development

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Abstract

We study the effect of government ideology on sustainable development, measured as investment in genuine wealth, in a dynamic panel of 79 countries between 1981 and 2013. We find robust and statistically significant evidence that genuine investment grows faster under right-wing governments than under left-wing or center governments. In contrast, we find no indication of opportunistic cycles.

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1. Introduction

The macro development literature provides many important insights into the process of economic development, understood as growth in GDP per capita, and it points to political and legal institutions, human capital and natural resource endowments as some of the fundamental causal factors. While sustained growth in GDP per capita without doubt is important, it is recognized widely that economic growth needs not go hand in hand with sustainable development understood as expansion in the stocks of wealth required to sustain high levels of human wellbeing (Arrow et al. 2003). Understanding the determinants of sustainable development, as a consequence, becomes a top priority to move the macro development literature forward and we argue that a public choice perspective can offer new insights. In particular, the purpose of this paper is to study the effect of government ideology on sustainable development and to ask whether governmental turnover creates partisan cycles as well as to explore whether elections themselves induce opportunistic political cycles in genuine investment.

The value of doing that is two-fold. First, in the face of important social challenges, ranging from climate change to aging populations, the question of sustainable development has become a top priority for many observers and policy-makers (Arrow et al., 2004). Sustainability is closely related to investment in a society's capital stocks broadly conceived to include manufactured, human and natural capital[1], referred to as genuine wealth. A country that is running down its genuine wealth is on an unsustainable development path and will experience falling welfare levels even if in the short-term its GDP per capita is rising. More precisely, the intertemporal social welfare of a society is increasing if and only if net investment in its genuine wealth is positive (Dasgupta and

[1] Natural capital refers to physical stocks of renewable and non-renewable resources and to the physical receptor systems that can assimilate pollution (e.g., the seas and the atmosphere).

Mäler 2000; Arrow et al. 2003). Since these genuine investments can, in principle, be measured (Atkinson and Hamilton 2003; World Bank 2006), it is possible to study empirically the determinants of sustainable development and doing so is of first-order importance (Dasgupta 2010).

Second, sustainability intrinsically is linked to issues of governance. As noted, sustainable development requires investment in society's capital assets and decisions on these investments are the outcomes of a political process as well as market processes. Aspects of this nexus have been investigated previously. Aidt (2009, 2011), for example, shows that corruption has a robust negative effect on sustainable development, while legal institutions that govern the way disputes are settled make little difference. Venard (2013) investigates the impact of political institutions and corruption on sustainable development and shows, in a cross-country analysis, that institutional quality affects growth in genuine wealth both directly and indirectly by reducing corruption. We add to this literature by studying whether short-term fluctuations in government ideology (measured on a left-right scale) induce fluctuations in genuine investment. This is an important endeavor because it helps us understand what causes variations in these investments within a set of countries with basic democratic institutions (regular elections). It is also important because political polarization is on the rise in many countries and, thus, if government ideology plays a role in whether a country is on (or stays on) a sustainable path, that trend might magnify the effect of politics on sustainability.

Specifically, we use a panel of 79 countries between 1981 and 2013 to study the relationship between government ideology and growth in genuine investment. We find that right-wing governments are associated with improvements in genuine investment while genuine wealth tends to deteriorate under left-wing governments. Our result is new to the literature and remarkably robust.

The rest of the paper is organized as follows. Section 2 provides an introduction to the theory underlying the use of genuine investment as an index of sustainable development and develops hypotheses linking investment in genuine wealth to government ideology and the partisan cycle. Section 3 presents the data and the econometric approach. Section 4 reports the main results related to government ideology and genuine investment. Section 5 considers the issue of endogeneity. Section 6 investigates the interplay between the time a party has been in power, government ideology and genuine investment. Section 7 offers a broader discussion of the results and concludes. The online supplementary material includes an appendix with tables reporting robustness checks and the Stata code and data to replicate the results in the main text.

2. Theoretical background and hypotheses

The World Commission (1997) loosely defines sustainable development as a current economic path that does not compromise the well-being of future generations. Arrow et al. (2004) propose a more precise definition, which we adopt for the purpose of our study.[2] Their starting point is an index of intertemporal social welfare of an economy at a given time *t*. Intertemporal social welfare, denoted by V_t, is a measure of the present discounted value of social welfare attained at each future date along a given development path. An economy is, then, said to be on a sustainable development path if and only if V_t is not declining over time along that path. Clearly, that definition puts the emphasis on the intertemporal aspect of the change in social welfare, not on its level, and on the stock of

[2]This, of course, not the only definition of sustainable development. In fact, many different definitions have been proposed in the literature (see, e.g., Lawn 2003). The advantage of the World Commission's definition over alternatives is that it is firmly based on welfare economics considerations.

national wealth rather than on the flow of national income.[3] Such a conception of sustainable development makes it clear why commonly used indicators of human well-being, such as Gross National Product (GNP per capita), Net National Product (NNP per capita) or the Human Development Index (HDI), are unsatisfactory measures of sustainable development. First, the problem with GNP per capita, amongst others, is that it is a gross measure and thus does not take depreciation of capital assets into account. For that reason, it does not reflect what happens to a nation's wealth and cannot, therefore, be used as an indicator of sustainable development. Second, NNP is net of depreciation in a nation's physical capital stock and it may, with various environmentally friendly adjustments suggested in the literature on green national accounting, also include net investment in natural capital (see, e.g., Asheim 2000). That is a step in the right direction, but as pointed out many years ago by Hicks (1940), if a nation's wealth is to increase, the social value of consumption must not exceed NNP. The implication is that it is possible for NNP to grow while, at the same time, a nation's wealth is run down. Third, the United Nations Development Program promotes the HDI as an indicator of the quality of life. The index is constructed by measuring a nation's average performance gap – the normalized difference between the nation's performance on a given indicator and best practice.[4] The key constituents of the HDI are life expectancy at birth, GNP per capita, expected years of schooling and adult literacy. As pointed out by Dasgupta (2001, pp. 80-82), the fundamental problem with the HDI as a measure of sustainable development, besides the fact that it inherits the unsatisfactory features of GNP per capita, is that life expectancy

[3] One consequence of the intertemporal emphasis is that tradeoffs are allowed, in the sense that social welfare may be lower at some future date than it is today so long as the discounted present value is not declining. See Arrow et al. (2004, p. 150) for further discussion of the implications of this definition.

[4] Formally, let x_{ij} be a particular indicator of "development" i in country j. Then the preformance gap for that indicator for that country is $I_{ij} = \frac{\{max_j x_{ij} - x_{ij}\}}{\{max_j x_{ij} - min_j x_{ij}\}}$; the HDI for country j is $1 - \frac{1}{M}\sum_i I_{ij}$, where M is the number of indicators.

and years of schooling are measures of current, not intertemporal well-being. Only literacy reflects intertemporal concerns and so, at best, "one-fourth" of the index is about sustainable development.

2.1 Sustainable development and genuine investment

It is useful to develop a simple theoretical framework that, firstly, makes the logic underlying Arrow et al.'s (2004) conception of sustainable development clear and, secondly, allows us to examine more clearly how government ideology or the political business cycle (PBC) may influence the prospect of sustainable development. The framework builds on Dasgupta and Mäler (2000) and, in particular, Aidt (2011). We imagine a society populated by many identical individuals who live forever. Time (t) is continuous. For simplicity, we assume that the population size is fixed. The economy produces an all-purpose good (Y_t) from labor (L_t), manufactured capital (K_t), and the flow of natural resources (R_t). The production technology is represented as:

$$Y_t = F(L_t, K_t, R_t), \tag{1}$$

where F increases in each of the three arguments and is continuously differentiable. The production function need not be concave. As a consequence, the results regarding sustainable development, government ideology, and political business cycles apply to a wide class of economies with externalities and other market and government failures. Manufactured capital evolves over time according to the following law of motion:

$$\frac{dK_t}{dt} = F(L_t, K_t, R_t) - C_t \equiv I_t^K, \tag{2}$$

where C_t is aggregate consumption, I_t^K is investment in manufactured capital, and no depreciation (capital consumption) is assumed. The natural resource base (S_t) evolves according to the following law of motion:

$$\frac{dS_t}{dt} = M(S_t) - R_t \equiv I_t^S, \tag{3}$$

where $M(S_t)$ is the natural rate of regeneration of the resource and I_t^S can be interpreted as the net investment in the resource base. For non-renewable resources, the regeneration rate is zero for all S_t, while for renewable resources it is positive. Individuals derive utility from consumption and disutility from labor supply, which are represented by a concave utility function, $U(C_t, L_t)$. Intertemporal social welfare at time *t* can, then, be defined by a utilitarian social welfare function:

$$V_t = \int_t^{\infty} U(C_\tau, L_\tau)\, e^{\delta(\tau - t)} d\tau, \tag{4}$$

where δ>0 is the (utility) discount rate. A development path P_τ starting at time τ is a projection into the future of all relevant economic quantities, i.e., $P_\tau \equiv \{C_\tau, L_\tau, R_\tau, K_\tau, S_\tau\}_{\tau=t}^{\infty}$.

The economy's institutions and the policy choices made under those institutions govern which development path actually is chosen at any given point in time. We make a distinction between the institutions that in a persistent way define the framework under which private and public decisions are made and day-to-day policy making which will be affected by the ideology of the ruling government (and other temporary factors). Institutions are not presumed to be perfect. Economic institutions can be dysfunctional (distorted markets, unregulated monopolies, and so on) or not, rent seeking may be kept in check or not, and the legal system may be effective or not. For the purpose of our analysis, we do, however, assume that the underlying political institutions are democratic in the

limited sense that elections in which the incumbent may lose power take place at regular intervals. We also assume that institutions are persistent.[5] For simplicity, the ideology of the ruling government is either right-wing or left-wing (we return to what this means below) and we assume that elections induce (random) alternations between the two parties. At any given point in time, the "ideological state" of the society is Λ_t

$$\Lambda_t = \begin{cases} \Lambda_L \text{ with Prob } = \text{ p} \\ \Lambda_R \text{ with Prib= 1-p} \end{cases}, \tag{5}$$

where p is the probability that a left-wing party is in power at time t and 1-p is the probability that a right-wing party is in power. Society's institutions are defined formally as a function, α, that, given the state of the economy at each time t, $\{K_t, S_t\}$ and the ideology of the ruling government selects a development path ($\widehat{P}_t$) from the set of feasible paths. We can then write intertemporal social welfare explicitly as a function of institutions, the ideology of the current government, and the stocks of capital: $V_t = V(\alpha, \Lambda_t, K_t, S_t)$. As time unfolds, and power alternates between parties with different ideologies, the society jumps from one development path to another.

Given the framework above, we ask two key questions. The first question is how, in practice, we can judge whether the development path chosen by a society ($\widehat{P}_t$) is sustainable or not. The second question is how different ideological positions of the

[5] Persistence is a strong assumption as institutions do change. It can be justified by the so-called "critical junctions" theory of institutional development. According to that theory, institutional reform happens at critical junctions in history. Once the new institutions are in place, they persist for a long time - until the next critical junction. (See Acemoglu et al. 2001 for an example of this line of reasoning.) That view is, however, challenged by modernization theory, according to which democratic institutions emerge gradually as a consequence of economic development (see, e.g., Gundlach and Paldam 2009 and Guerriero 2016, who shows legal institutions also evolve gradually in response to socio-economic factors). In the statistical analysis, we do attempt to capture institutional changes, but for the logic of the theoretical analysis to go through, it is a convenient simplification to consider institutions as fixed and ideology as the aspect that fluctuates.

government affect that choice. Starting with the first question, we know that, by definition, sustainability requires that intertemporal social welfare not be declining over time. Since intertemporal social welfare is not something that can readily be observed, this is, in itself, not very helpful for evaluating development paths empirically. Fortunately, Dasgupta and Mäler (2000) prove two important equivalence results that provide the fuzzy concept of sustainability with real empirical content.[6] We shall focus on the most immediate of those results as it suffices for our present purpose. The social scarcity of the two capital assets can be measured by their accounting or shadow prices:

$$p_t(\alpha, \Lambda_t) \equiv \frac{\partial V(\alpha, \Lambda_t, K_t, S_t)}{\partial K_t}, \tag{6}$$

$$q_t(\alpha, \Lambda_t) \equiv \frac{\partial V(\alpha, \Lambda_t, K_t, S_t)}{\partial S_t}. \tag{7}$$

The shadow prices measure the change is intertemporal social welfare associated with a small increase in the relevant capital stock. Recall that intertemporal social welfare is a function of institutions, the ideological position of the ruling government and the capital stocks, i.e., $V_t = V(\alpha, \Lambda_t K_t, S_t)$. Calculation of the total derivative gives:

$$\frac{dV_t}{dt} = \frac{\partial V}{\partial K_t}\frac{dK_t}{dt} + \frac{\partial V}{\partial S_t}\frac{dS_t}{dt}. \tag{8}$$

Using the definitions of the accounting prices from above (equations (6) and (7)), along with equations (2) and (3), we can rewrite equation (8) as:

$$\frac{dV_t}{dt} = p_t(\alpha) I_t^K + q_t(\alpha) I_t^S \equiv GI, \tag{9}$$

where *GI* is short-hand for genuine investment. Genuine investment reflects the change in society's genuine wealth (*GW*), i.e., $GI_t \equiv \frac{dGW_t}{dt}$. Genuine investment is linked to the

[6] See also Dasgupta (2001, chapter 9) and Hamilton and Clemens (1999).

change in intertemporal social welfare through equation (9), which provides the fundamental link between theory and empirical implementation. Equation (9) says that the change in intertemporal social welfare at time t in a society governed by institutions α with a government of ideology Λ_t is increasing if, and only if, the net investment in its genuine wealth at that time is positive, i.e., if, and only if, genuine investment is positive. In other words, the main determinant of intertemporal social welfare is an economy's productive base. That base consists of all of the economy's capital assets, including manufactured and natural capital, as highlighted above, but, in general, the model also includes human and social capital. The change in the productive base can be expressed as the sum of the values of investment or disinvestment in the underlying capital assets, where the assets are priced at their social opportunity costs, i.e., at shadow prices. From an empirical point of view, some hope exists that genuine investment (*GI*) can be estimated, while intertemporal social welfare itself is much harder, if not impossible, to measure objectively. We return to the matter of how genuine investment can be measured empirically in section 3, but first we need to address the second question, i.e., how does ideology affect sustainability, as defined by the index of genuine investment, or put differently, why would partisan politics and elections induce cycles in genuine investment?

2.2. Sustainable development and government ideology

In democratic societies, the ideological position of the ruling government is likely to influence the scale, timing and composition of investments in the society's capital stocks. Elections provide citizens with a mechanism for selecting new governments and, as a consequence, parties with different ideologies gain and lose control of government at election times. Our general hypothesis is that governmental change induces partisan cycles

in genuine savings and that a society over time may move on and off a sustainable development path. The classical works by Hibbs (1977, 1987) and Alesina (1987) have shown how partisan cycles can emerge in macroeconomic aggregates because left-wing governments are more inclined than right-wing ones to pursue expansive policies designed to yield lower unemployment and faster growth, but also running the risk of extra inflation. A more recent literature establishes how party ideology influences the size and scope of government, with left-wing governments being more expansionary than right-wing governments (Pickering and Rockey 2011, 2013), while right-wing governments are more willing to deregulate labor markets (Bjørnskov and Potrafke 2012, 2013) and to promote deregulation of the energy, transport and communications industries (Potrafke 2010).[7]

We conjecture that the fiscal conservatism of right-wing parties and their greater willingness to deregulate the economy will positively influence investment into manufactured capital and concentrate public spending on provision of merit goods like education at the expense of welfare programs. The later effect is reinforced by the observation that right-wing parties are more willing to mobilize private funds to co-finance higher education (Kauder and Potrafke 2013). With respect to natural capital, which is preserved or accumulated through farsighted exploration of natural resources and through environmental regulations, it is less clear if right-wing parties will support policies that preserve and build-up the stock of natural resource capital to larger or smaller extents than left-wing parties. Right-wing parties' general willingness to deregulate markets may, for example, spill over into a specific unwillingness to regulate externalities.

[7] See also Reed (2006), Imbeau et al. (2001) and Frederiksson et al. (2013). Moreover, Folke (2014) shows that small political parties with a focus on specific issues such as the environment or immigration can influence policy on those margins. For a good survey of the relevance of government ideology, see Potrafke (2017).

It is, therefore, not a priori clear what the nature of the partisan cycle might be; the matter must be considered an open empirical question.

Besides setting the stage for partisan cycles, the election calendar may also induce opportunistic cycles. According to the literature on opportunistic political business cycles, in their quest for votes, parties from *across the ideological spectrum* use the fiscal and monetary tools available to them to expand economic activity before elections and to calm the economy subsequently to reduce inflationary pressures.[8] A by-product of such behavior could be a political business cycle in genuine investment. For example, the short-termism in macroeconomic management induced by such opportunistic behavior may divert attention away from investment in the economy's capital stocks and towards current consumption and in that way create a dip in genuine investment around elections. However, whether the unintended consequences of opportunistic attempts to manipulate the macroeconomy are sufficiently strong to create a political business cycle in genuine investment must also be considered an open empirical question.

3. Data and econometric specification

To investigate the interplay between ideology, elections and genuine investment, we use an unbalanced panel dataset of 79 countries between 1981 and 2013. To be included in the sample, a country must have democratic elections over the relevant period.[9]

[8] The theoretical foundation for the opportunistic political business cycle was laid by Nordhaus (1975) and integrated into rational expectations models by Rogoff and Sibert (1988) and Rogoff (1990) and applied in Aidt and Mooney (2014). The literature recently has been surveyed by Dubois (2016). Empirical studies suggest that favorable economic conditions in the lead-up to an election do benefit the incumbent government (Hibbs 2006).

[9] Specifically, we use the Legislative and Executive Indices of Electoral Competitiveness from the Database of Political Institutions (DPI) to define the sample. It scores countries on a 1 to 7 scale with higher values meaning more competitive elections. We excluded countries with values lower than 6, meaning that we

In order to test for partisan cycles in genuine investment, we need two primary inputs. Firstly, we need empirical estimates of genuine investment across time and space. The World Bank, as part of its World Development Indicators (WDI) project, publishes those estimates (in percentage of gross national income, or GNI). The World Bank's estimates of genuine investment are obtained by making four adjustments to gross national savings.[10] The first adjustment is to deduct an estimate of consumption of fixed capital to account for depreciation of manufactured capital. The second adjustment is to add an estimate of investment in human capital. Public expenditure on education is used as a proxy for that. The third adjustment relates to the social cost of environmental pollution.[11] The fourth adjustment also is environmentally motivated. It seeks to account for energy depletion, mineral depletion and net forest depletion by subtracting an estimate of the relevant resource rents from net national savings.[12] The result of these adjustments of gross national savings provides a rough estimate of genuine investment in terms of the percentage of gross national income (GNI). We follow Arrow et al. (2003) and convert those numbers into an estimate of growth in genuine wealth per capita (*GWgrowth*) by

include countries (during periods) in which they had competitive elections and when multiple parties did win seats. A score of 6 indicates that the largest party received more than 75% of the seats, while a score of 7 indicates that it won less than that (in some robustness checks, we restrict the sample to those countries with a score of 7). The countries in our sample are listed in the note to Table 2. It includes countries from Europe, the Americas, Africa, Oceania, the Middle East and Asia.

[10] For details on how it is computed, see Arrow el al. (2003). The WDI use the term "adjusted net savings" to describe what we refer as "genuine investment".

[11] It has two parts. The first is designed to capture the cost of global warming. An estimate of the social cost of carbon dioxide emissions is subtracted from national savings, with the assumption that the average social cost of a ton of carbon is US$30. The second part is designed to capture the impact of local environmental degradation. The World Bank makes a financial deduction for an estimate of the health damages caused by urban air pollution (particulate emissions) from gross savings.

[12] The rents are calculated as the market price of the resource minus average extraction cost for the two non-renewable resources (energy and mineral depletion). For renewable forest resources, the rent is estimated as the market price per unit of harvest in excess of the natural regeneration rate.

multiplying genuine investment as percentage of GNI by a presumed GNI-wealth ratio[13] and by subtracting the population growth rate from that product. Table 1 presents data on genuine investment from a selection of six countries and illustrates how they are calculated. We observe, in several cases, that countries with positive GDP per capita growth rates have at the same time experienced negative growth in genuine wealth per capita.

[Insert Table 1 around here]

Secondly, we need empirical measures of government ideology. Constructing indicators of government ideology is complicated by the fact that substantial differences exist in party and parliamentary systems across the countries in our sample and by the fact that coalition governments consisting of two or more parties with different ideologies can be coded in different ways. We use the classification (EXECRLC) proposed in the Database of Political Institutions (DPI) to characterize party ideology.[14] The DPI divides parties into three groups based on an evaluation of a party's stance on economic policy. We define the corresponding indicator variables: *Right*, *Left* or *Center*. For single-party majority governments, the indictor variable corresponding to its ideology takes the value one in years during which the party rules a given country. For coalition governments, the DPI classifies a coalition government as having the ideology of the largest coalition partner. The group of right-wing parties includes conservative, Christian democratic and other right-wing parties; the group of left-wing parties includes communist, socialist,

[13] In the baseline, we follow Arrow et al. (2004) and the ratios we use are 0.2 for industrialized countries and 0.15 for developing and oil-rich countries. We have investigated if the results are sensitive to this choice and Table A2 in the supplementary material shows that the results are not sensitive to variations within the range of plus/minus 25.

[14] For the subset of OECD countries and for individual countries (such as the United States and Canada), more refined classifications of party ideology exist (see Bjørnskov 2005, 2008; Bjørnskov and Potrafke 2012, 2013; Lamérisa et al. 2018).

social democratic and other left-wing parties; and the group of *Center* parties includes parties with positions that can best be described as centrist.[15]

To estimate the impact of government ideology on genuine investment, we consider the following dynamic panel specification:

$$(10) \qquad GWgrowth_{it} = \rho GWgrowth_{it-1} + \boldsymbol{\alpha Ideology}_{it} + \boldsymbol{\beta Pol}_{it} + \boldsymbol{\gamma Econ}_{it} + \gamma_t + \nu_i + e_{it}$$

where i = 1,…,79 and t = 1981,…,2013. The coefficient on the first lag of the dependent variable (ρ) measures persistence in the growth rate of genuine wealth per capita (*GWgrowth*). The error structure includes a country-specific fixed effect ν_i, a time fixed effect γ_t and the idiosyncratic error term e_{it}. The vector ***Ideology*** includes the indicator variables for the ideology of the government. The vectors ***Pol*** and ***Econ*** include, respectively, political and economic control variables. Table 2 describes the variables in detail.

[Insert Table 2 around here]

We include two main political control variables in all specifications. The variable *Election year* controls for the timing of elections and enables us to distinguish partisan cycles from election cycles. The variable *Party tenure* records the number of years that the government party has been in power. In some specifications, we replace that with the variable *Leader tenure*, which records the number of years that the current party leader has been in control. Those two covariates enable us to separate the effect of the incumbent

[15] For further information on how the party classification is constructed, see the DPI codebook (Keefer 2012).

party's ideology from the effect produced by time in office. In some specifications, we also include the *Polity IV index*, which captures the quality of political institutions, allowing us to isolate the short- to medium-term effect of government ideology on sustainability from the potential long-run effect of changes in underlying political institutions.

The theory underlying our use of genuine investment as an index of sustainability requires us to control for capital stocks and for the shadow prices associated with those stocks. Direct measures of the capital stocks are hard to come by; hence, we use the following imperfect proxies: *Government consumption*, *Years of schooling*, *GDP per capita* and *Urban population ratio.* It likewise is a challenge to find proxies for the relevant shadow prices. We note, however, that world market prices can in many cases be used as shadow prices for internationally traded goods. That observation suggests that we can use imports plus exports as a percentage of GDP (*Trade openness*) to proxy shadow prices.

Owing to the country-specific fixed effects, $v_{i,}$, the lagged dependent variable is correlated with the error terms in equation (10) even if the latter are not serially correlated. Random or fixed effects estimates are biased and inconsistent in the presence of serial correlation (Baltagi 2008). Estimators that take into account that bias include: (*i*) bias-corrected estimators; and (*ii*) instrumental variables estimators. Bias-corrected estimators, like the one proposed by Bruno (2005a, b) – the bias-corrected least squares dummy variable estimator (LSDVC) for dynamic panel data models – are suitable when the number of cross-sectional units (N) is small, which is not the case in our sample (N=82). For that reason, we estimate equation (10) with an instrumental variables estimator that is appropriate when, as in our case, the number of cross-sectional units dominate the number of time periods (Arellano and Bond 1991). Specifically, we adopt the one-step generalized

method of moments (GMM) estimator, which estimates equation (10) in first differences and uses the levels of the explanatory variables as instruments to avoid correlation between the lagged dependent variable and the country-specific effects. We show that our estimates are robust to using either the two-step estimator or the system GMM estimator.[16] A problem that we have to deal with is the "too many instruments problem" that can lead to over-fitting biases, i.e., even if individually valid, the instruments can be collectively invalid because they over-fit the endogenous variables (Doornik et al. 2002; Roodman 2009a, b). To minimize the over-fitting problem, we use the collapse alternative suggested by Roodman (2009b). The empirical results from our panel data analysis are presented and discussed in the next section. The online supplementary material reports on many robustness checks.

4. Main results

[16]Although the two-step estimator is asymptotically more efficient than the one-step estimator and relaxes the assumption of homoscedasticity, the efficiency gains are not that important even in the case of heteroscedastic errors. That result is supported by Judson and Owen (1999). They show empirically that the one-step estimator outperforms the two-step estimator, especially when the number of time periods is relatively large (T=30), which is the case in this study. Arellano and Bover (1995) and Blundel and Bond (1998) suggest another GMM estimator with additional moment conditions. If the conditions are valid, efficiency will increase. The system GMM estimator combines the moment conditions of the model in first differences with those of the model in levels. However, if the orthogonality conditions for the first-differenced equation are valid, but those for the level equation are not, then the system GMM estimator may not be better than first-differences GMM estimator. That can happen, for example, if the regressors used in the orthogonality conditions for the levels equation are correlated with the individual effects. Moreover, simulations suggest that the system GMM estimator is not necessarily superior to the standard GMM estimator in cases for which the autoregressive parameter is below 0.8 and the time-series observations are relatively large (Blundell and Bond 1998; Moshirian and Wu 2012). That is what we observe in our data. So, to sum up, the estimator that is most suitable for our empirical analysis is the one-step first-differences GMM estimator.

Table 3 reports the main results from the one-step difference-GMM estimator.[17] The instruments are valid according to the Hansen J-test and, as required, no second-order autocorrelation is found. The specification reported in column (1) includes separate indicator variables for left- and right-wing parties. The effect of government ideology is, therefore, measured relative to centrist governments. We see that growth in genuine wealth is systematically higher under right-wing governments and that no difference exists between left-wing and centrist governments, suggesting that we can be parsimonious and merge left-wing and centrist governments into one reference group; that is done in all subsequent specifications. From the specification reported in column (2), we observe that growth in genuine wealth is higher under right-wing governments than under either left-wing or centrist governments. In column (3), we report, for comparison, a specification estimated with a fixed effects estimator rather than with the difference-GMM estimator. We observe that the point estimate on *Right* is smaller than the GMM estimate reported in column (2), but statistically significant at the 1% level. The estimate of the persistence parameter is much larger, as one would expect in the presence of Nickell's bias.

The positive effect of right-wing parties on *GWgrowth* is not just statistically significant, it also is of economic importance. The average growth rate of genuine wealth per capita is 0.62 with a standard deviation of 1.8 (see Table 2). Accordingly, based on the estimate from Table 3, column (2), a switch from a left-wing or centrist to a right-wing government increases the growth rate of genuine wealth in the average country by 0.147 percentage points or by one-twelfth of a standard deviation. The long-run effect is an increase of 0.29 (= 0.147/(1-0.498)) percentage points. We interpret this as evidence that the fiscal conservatism of right-wing parties, their greater willingness to deregulate

[17] Table A6 in the supplementary material reports the results from a system-GMM estimator. The results are similar to those shown in Table 3.

markets,[18] and their focus on provision of merit goods pay off in terms of investments in the fundamental capital stocks and, moreover, that that difference is sufficient to compensate for any under-investment in natural capital.

[Insert Table 3 around here]

In contrast to the robust evidence on the partisan cycle, the timing of elections by itself does not appear to affect the growth rate of genuine wealth. The point estimate on *Election year* never is statistically different from zero, rejecting the idea of an opportunistic election cycle in genuine investment.[19] That finding is not entirely surprising. After all, it takes time to enact policies with substantive effects on genuine investment and, on top of that, it is hard for voters to observe and attribute short-term fluctuations in such investments to government policy. An implication, then, is that it is not elections per se that create cycles in genuine investment. Rather the cycles are created by underlying ideological differences with regard to economic policy that filter through to investments in genuine wealth.

The partisan cycles in genuine investment are short- to medium-run phenomena that can cause a country to move on or off a sustainable path. In contrast, the nature of the

[18] That conjecture is substantiated by the fact that the correlation between the Fraser Institute's Economic Freedom Index and the right-wing government indicator is positive (0.11) and significant at the 1% level. Moreover, the correlation between the right-wing government indicator and the regulation sub-component of the Freedom House index (capturing credit, labor and business regulations) is negative (-0.14) and also significant at the 1% level.

[19] In additional experiments, reported in Table A1 in the supplementary material , we investigate the existence of cycles in elections that result in a change in the political orientation of the government, if differences are observed in pre- and post-election years, or if it matters how long the interval between elections is. Apart from a weak positive effect of elections that result in a change in government ideology, we find no evidence of an election cycle.

underlying political institutions can have a longer-term effect on the investments that a society makes in its fundamental capital stocks. More importantly, it is likely that the nature of the partisan cycle is, at least in part, a function of the underlying institutions. If so, we run the risk of conflating the two. To investigate that issue, Table 3, column (4) reports a specification that controls for the *Polity IV index*. This index is a comprehensive summary measure of the quality of a country's political institutions at a given point in time. We observe that the point estimate on *Right* is a little smaller than before (0.126), but remains significant. In contrast, the point estimate on *Polity IV Index* is far from statistically significant. Similar results are obtained for other broad measures of institutions.[20] It, therefore, appears that the partisan cycle in genuine investment is separate from any effect that might come from variations in the broader institutional environment.[21]

Yet, the many important differences in party systems that clearly exist make it, as previously noted, a challenge to measure differences in government ideology consistently across time and space. One way to engage that challenge is to investigate potential heterogeneity across subsamples of countries with broadly similar party systems. In Table

[20] Specifically, we consider the democratization index proposed by Acemoglu et al. (2018) and the machine learning-based index proposed by Gründler and Krieger (2016) as alternatives to the *Polity IV index* and find similar results [available upon request]. We also have investigated the effect of controlling for specific (as opposed to general) features of the political system including controls for the type of political regime (presidential versus parliamentarian; plurality versus non-plurality), for the election system (majority versus proportional rules) and for various indicators of the quality of institutions from the International Country Risk Guide. Those results are reported in Tables A3 and A4 in the supplementary material. Very occasionally one of the institutional controls is significant, but in no case does it have more than a small effect on the size and significance of the estimated effect of right-wing government ideology.

[21] We have investigated if the effect of right-wing government ideology on sustainable development is conditional on the general quality of political institutions, on the regime type or on the election rule. We cannot find any evidence that it is contigent on the general quality of political institutions (results available upon request). Tables A3 and A4 in the supplementary material report that the effect is larger in plurality regimes and in countries with proportional election rules.

3, columns (5) and (6), we report specifications that split the overall sample into an OECD and a non-OECD sample. We observe a strong partisan cycle in both samples, but the point estimate on *Right* is larger for the sample of non-OECD countries.[22] The larger amplitude of the cycle outside the OECD democracies is likely explained by larger differences in the ideological stances of left- and right-wing governments with regard to economic policy in non-OECD democracies.[23] The main specification in equation (10) controls for country and time fixed effects and thus estimates the effect of government ideology from within country and year variations. In Table 3, column (7), we ask if the results are robust to controlling for continent-specific time trends. Those trends pick up regional movement of populism, the effect of the 1980s' debt crisis, and other time-varying and continent-specific heterogeneity. We see that the point estimate on *Right* is hardly affected by that re-specification.

We have, by splitting the sample, investigated if the relationship between government ideology and genuine investment was different during and after the cold war. Table A6, columns (1) and (2) in the supplementary material show that the answer is no: the positive impact of right-wing government ideology holds during and after the cold war. In addition, we have experimented with different time aggregations of the data. In the baseline specification, the data frequency is annual. We think this is the right frequency for a study of partisan and election cycles. However, in the macro development and growth literature, the data commonly are time averaged into five- or even ten-year periods. That is done to eliminate short-run fluctuations. To establish the robustness of our baseline

[22] While in the group of OECD countries the growth rate of genuine wealth per capita is, on average, 0.13 percentage points higher when a right-wing party is in office, in the non-OECD countries it is 0.24 percentage points higher, ceteris paribus.

[23] Besides dividing the sample between the OECD and non-OECD countries, we also investigated alternative sample splits. Those results, reported in Tables A3, A4 and A5 in the supplementary material, show that right-wing parties affect investment in genuine wealth in presidential, plurality and proportional representation regimes and are observed in both high- and low-income countries/democracies.

results to the choice of the temporal unit, Table A6, columns (10) and (11) in the supplementary material report two specifications with five-year averages. As such, we recode *Right* as the fraction of each five-year period that a country was governed by a right-wing party and we replace *Election Year* with the variable *Gov. changes*, which records the number of changes of government within each five-year period. We note that the fraction of years under right-wing rule is positively correlated with growth in genuine wealth, while the effect of frequent government changes is negatively related, but not significant.

Regarding the economic control variables, we observe from Table 3 that government consumption (*Gov. consumption*) have a negative impact on the growth rate of genuine wealth; *GDP per capita* is positively corrected with the growth rate of genuine wealth while *Years of schooling* is consistently insignificant; *Trade openness* and *Urban pop. ratio* are positive and significant only in the OECD subsample. [24]

In summary, we have uncovered a partisan cycle in the growth rate of genuine wealth: right-wing parties are associated with faster growth in genuine wealth than left-wing parties. The result is robust, economically important and new to the literature. Conceptually, we argue that it is important for the macro development literature to shift attention from a narrow focus on growth in GDP and to embrace a broader conception of sustainable development that reflects political effects of on social welfare. That is not just a matter of principle; it is also a matter of drawing the correct empirical inferences. The importance of the latter is illustrated by the fact that if we replace growth in genuine wealth with growth in GDP per capita in equation (10) and re-estimate, we find the *opposite* result, namely that right-wing governments are associated with *slower* economic

[24] Furthermore, the positive relationship between right-wing governments and genuine investment is robust to changes in the proxies for the economy's capital stocks, shadow prices (see Table A2 in the supplementary material), exclusion of some countries (with more populist reputations), and to the use of the Blundell-Bond system GMM estimator (see Tables A6 in the supplementary material).

(GDP) growth than left-wing parties (see Table A6, column (9) in the supplementary material).

5. Endogeneity concerns

Government ideology is not randomly assigned to the governing party. One may, therefore, be concerned that ideology could be correlated with unobserved time- and country-specific determinants of genuine investment. Reverse causality is unlikely to be a major concern, so the question is if the ideology of the elected government and genuine investment are jointly determined by unobserved, country-specific and time-varying shocks. For example, if an economic upturn (not captured by time fixed effects, by GDP movements, or by continent-specific trends) simultaneously increases investment in genuine wealth (say, by inducing more spending on schools) and makes the electorate favor a right-wing government, then the positive association between right-wing ideology and genuine investment could be spurious. In the estimations, we control for many observable determinants of genuine investment and for time and country fixed effects and in some specifications for continent-specific time trends; yet it is clear that we observe only a subset of the potential explanatory factors. It is encouraging that the coefficient on the ideology variable is stable across many different specifications, but that, by itself, does not rule out omitted variables bias.

Altonji et al. (2005) and Oster (2017), however, show that the observable control variables can be informative about the size of the potential bias in the estimate of the coefficient of interest (here, the effect of ideology on genuine investment). That conclusion requires that selection on the observable factors included in the model is proportional to selection on the unobserved factors that are not in the model. Under the assumption of proportional selection, the relationship between ideology and the vector of

control variables contains information about the relationship between ideology and the vector of omitted or unobserved factors. That information can be used to evaluate the size of the bias. In practice, one does that by comparing the estimate of $\boldsymbol{\alpha}$ and the R^2 from the panel equation (10) above with those obtained from a "short" regression without any of the control variables or fixed effects. We can then calculate the value of proportionality of selection that would result in the estimated effect of ideology on genuine investment being attributable entirely to bias. We find the value to be 20.18 and observe that the difference in the R^2 values is small (0.90 with controls and 0.81 without).[25] The unobserved, omitted factors – the source of the potential bias – would then have to be 20 times more important in explaining the variation in ideology than the observed factors included as control variables. Since we selected the controls based on theoretical considerations, it would not be unreasonable to assume that they are at least as important as the factors we could not observe and measure. Seen in this light, it appears unlikely that the positive effect of right-wing ideology on genuine investment is entirely or even mostly explained by omitted variables bias.

6. Ideology and tenure in office

It takes time for a government to change the package of economic policies and for these policies to filter through to investments in genuine wealth. A long period in power generally is necessary for a government to fully implement its medium-term policies. The more time a government spends in office, the more scope it has for ensuring consistency across different dimensions of its economic and social policies. Frequent changes in government, on the other hand, tend to see such efforts interrupted or reversed. It is,

[25] We use the Stata procedure PSACALC (Oster, 2017) to calculate the numbers.

therefore, reasonable, on the one hand, to expect that the number of years that a government rules could have an independent effect on genuine investment and, on the other, that it may interact with the partisan cycle we identified above.

In all of the specifications reported in Table 3, we entered the variable *Party tenure* to ask if time in office has an independent effect on *GWgrowth.* The answer there clearly was no. The point estimate on the variable is insignificant, with the one exception of a marginally significant and positive effect in the OECD sample (column (5)). It is, of course, possible that the impact of time in office is non-linear, reflecting the natural life cycles of governments. On the one hand, as already noted, more years in office enables a party to implement its policy agenda. On the other hand, the literature on vote and popularity functions documents that a government's popularity erodes the longer it is in office.[26] As this "cost of ruling" reduces a government's general popularity, it may switch to more populist policies. We may, therefore, observe a switch from medium-term policies that have a positive effect on genuine investment to short-term policies that have a negative effect as a government "ages" in office. Those considerations suggest that the relationship between time in office and investment in genuine wealth follows an inverted U-shaped relationship. Table 4, column (1) reports a specification with *Party tenure* and its square. We see that both coefficients are insignificant and that the point estimate on the indicator variable *Right* is unaffected by that change. In columns (3) and (4), we investigate the effect of the years that the party *leader* (rather than the party itself) has been in power. Again, we find no direct effect. Taken together, those findings reject the hypothesis that time in office exerts an independent (linear or non-linear) effect on genuine investment. It, however, does not rule out that time in office could interact with the partisan cycle in genuine investment. To test that hypothesis, we interact the indicator

[26] See, for example, the seminal papers by Mueller (1970) and Veiga and Veiga (2004).

variable for right-wing parties, *Right*, with *Party tenure* or with *Leader tenure*. Table 4, columns (2) and (5) report the results. We observe that the interaction terms are very far from being statistically significant and we conclude that the partisan cycle appears to be unaffected by length of tenure.

[Insert Table 4 around here]

7. Conclusions

The question of sustainable development increasingly has become important for policymakers in developing and developed countries. Climate change, aging populations and other important social and economic challenges have highlighted the importance of studying the subject. Sustainability is naturally linked to issues of governance in general and to policy decisions made by the governments in particular. Such policy decisions depend on government ideology and electoral concerns.

In this paper, we add to the substantial existing literature on the influence of government ideology and electoral politics on public policy by studying the effect of ideology on investment in an economy's capital stocks (its genuine wealth). We find strong evidence that the government's ideological color matters and that investment in genuine wealth rises when right-wing governments are in office. Economic conservatism attributed to right-wing parties and their greater willingness to deregulate the economy may be driving that effect. The results are robust. In contrast, our results clearly rule out the existence of opportunistic election cycles. The expansion/contraction cycle near elections (if it actually occurs) does not seem to affect genuine investment.

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Table 1: Genuine investment in selected countries, average figures 1996-2007

	1	2	3	4	5	6	7	8	9	10	11
	Gross saving	Consump-tion of fixed capital	Educa-tion expendi-ture	Damage from $C0_2$ emission	Particu-late emission damage	Energy deple-tion	Mineral deple-tion	Forest depletion	Genuine investment	Growth rate of per capita genuine wealth	Growth rate of per capita GDP (1970-2000)
	% of GNI	% of GNI	% of GNI	% of GNI	% of GNI	% of GNI	% of GNI	% of GNI	% of GNI	%	%
India	28.43	9.33	3.93	1.41	0.68	3.10	0.50	0.78	16.56	0.88	2.79
Brazil	15.48	11.37	4.30	0.31	0.28	2.19	1.24	0.00	4.39	-0.74	2.07
Thailand	31.24	13.64	4.62	1.04	0.30	3.09	0.01	0.26	17.50	1.53	4.68
Nigeria	27.85	8.85	0.85	0.66	0.78	45.57	0.00	0.06	-27.22	-6.78	0.79
USA	15.00	11.84	4.79	0.34	0.25	0.85	0.04	0.00	6.46	0.49	1.76
UK	15.13	10.58	5.33	0.20	0.05	1.66	0.00	0.00	7.97	1.39	1.98

Notes: The table illustrates how genuine investment as a percentage of GNI is constructed by making adjustments to gross savings. To obtain the growth rate of genuine wealth, we follow Arrow et al. (2003) and multiply genuine investment as percentage of GNI by the GNI-to-wealth ratios (0.2 for the USA and the UK and 0.15 for the rest) and subtract the annual population growth rate over the period 1996-2007. Damage from CO_2 emissions is based on a marginal cost of $30 per tonne.

Sources: Adopted from Aidt (2011) and based on World Development Indicators (several years).

Table2. Description of the variables and descriptive statistics

Variable	Description	Obs.	Mean	S.D.	Min.	Max
GWgrowth	Growth in genuine wealth per capita; it is equal to adjusted net savings (excluding particulate emissions) multiplied by the GNI-wealth ratio (0.15 for developing and 0.2 for industrialized countries) and subtracting the average population growth rate.	1817	0.62	1.80	-7.77	4.66
Left	Dummy variable that takes the value of 1 when a left-wing party is in office; and 0, otherwise (center or right-wing party).	2042	0.41	0.49	0	1
Right	Dummy variable that takes the value of 1 when a right-wing party is in office; and 0, otherwise (centre or left-wing party).	2042	0.45	0.50	0	1
Party tenure	The number of years a party is in office.	2029	7.54	9.45	1	71
Leader tenure	The number of years a chief executive is in office.	2037	4.10	3.66	1	31
Election year	Dummy variable that takes the value of 1 in the year of legislative elections; and 0, otherwise.	2042	0.27	0.44	0	1
Gov. consumption	General government final consumption expenditure (% of GDP).	1999	16.60	5.62	2.80	54.52
Years of schooling	Average years of schooling.	1864	8.14	2.87	0.70	13.10
GDP per capita	Real GDP per capita (thousands of USD).	2012	15.79	15.89	0.19	86.13
Trade openness	Trade (Imports plus Exports as % of GDP).	2027	71.88	39.95	9.10	352.90
Urban pop. ratio	Urban population over total population (%).	2042	63.81	21.48	7.83	97.73
Polity IV index	Autocracy-Democracy index; it describes how democratic a country is on a scale ranging from -10 (strongly autocratic) to +10 (strongly democratic).	1350	8.62	2.28	-8	10

***Sources*:** World Development Indicators (1970-2013), World Bank (http://data.worldbank.org/) for *GWgrowth* and for the economic and demographic covariates. Database of Political Institutions (1970-2012), World Bank (http://www.worldbank.org) for the political variables. *Polity IV index* comes from the Polity IV project (2013) database.
***Notes*:** The countries used in the estimations are: Albania, Algeria, Argentina, Australia, Austria, Belgium, Bolivia, Botswana, Brazil, Bulgaria, Canada, Chile, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Denmark, Dominican Republic, Ecuador, El Salvador, Estonia, Finland, France, Gambia, Germany, Ghana, Greece, Guatemala, Honduras, Hungary, Iceland, India, Ireland, Israel, Italy, Jamaica, Japan, Rep. Korea, Latvia, Luxembourg, Macedonia, Madagascar, Malawi, Mali, Mexico, Moldova, Mozambique, Nepal, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Pakistan, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Russian Federation, Senegal, Sierra Leone, Slovak Republic, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Thailand, Turkey, Uganda, Ukraine, United Kingdom, United States, Uruguay, and Venezuela.

Table 3. Baseline results: The effects of the government ideology on sustainable development (GWgrowth)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GWgrowth$_{t-1}$	0.497***	0.498***	0.665***	0.753***	0.555***	0.305**	0.471***
	(0.174)	(0.174)	(0.061)	(0.123)	(0.103)	(0.120)	(0.169)
Left	0.113						
	(0.083)						
Right	0.234***	0.147***	0.092***	0.126**	0.133***	0.241***	0.120***
	(0.070)	(0.049)	(0.033)	(0.049)	(0.049)	(0.093)	(0.044)
Party tenure	-0.001	-0.001	-0.001	0.006	0.007*	-0.009	0.002
	(0.006)	(0.006)	(0.002)	(0.004)	(0.004)	(0.010)	(0.006)
Election year	0.032	0.032	0.014	0.011	0.050	0.027	0.031
	(0.033)	(0.033)	(0.034)	(0.037)	(0.035)	(0.060)	(0.031)
Gov. consumption	-0.048**	-0.048**	-0.027***	-0.070***	-0.142***	-0.034**	-0.051**
	(0.022)	(0.022)	(0.008)	(0.021)	(0.022)	(0.016)	(0.025)
Years of schooling	-0.030	-0.034	-0.051	-0.023	0.117	-0.414	-0.057
	(0.138)	(0.138)	(0.053)	(0.142)	(0.127)	(0.287)	(0.094)
Ln(GDP per capita)	1.869***	1.853***	0.692**	1.642***	0.924	2.227**	2.117***
	(0.631)	(0.633)	(0.272)	(0.623)	(0.722)	(0.946)	(0.758)
Trade openness	-0.007	-0.007	0.001	-0.011	0.014**	-0.016**	-0.005
	(0.007)	(0.007)	(0.002)	(0.009)	(0.005)	(0.008)	(0.006)
Urban pop. ratio	0.037	0.036	0.011	0.025	0.057**	0.032	0.005
	(0.030)	(0.030)	(0.012)	(0.033)	(0.028)	(0.047)	(0.031)
Polity IV index				0.040			
				(0.067)			
# Observations	1533	1533	1637	1164	789	744	1533
# Countries	78	78	79	56	31	47	78
# Instruments	50	49		50	49	49	53
Continent trends	No	No	No	No	No	No	Yes
Sample	Full	Full	Full	Full	OECD	Non-OECD	Full
Hansen *J*-test	0.329	0.311		0.967	1.000	1.000	0.189
AR(1)	0.000	0.000		0.000	0.003	0.000	0.000
AR(2)	0.264	0.267		0.332	0.237	0.150	0.346
R^2			0.526				

Notes: The dependent variable is *GWgrowth*. See Table 2 for definitions of the variables. Robust standard errors are in parentheses; significance levels at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%. Year fixed effects included in all estimations. The one-step difference-GMM estimator is employed, except in regression (3) where a FE estimator is used instead; the lag of the dependent variable is treated as endogenous in the GMM estimations; the respective lagged values and the other explanatory variables are used as instruments in the first-difference equation; the instrument set is collapsed to avoid the problem of having too many instruments. The Hansen *J*-test reports the *p*-value for the null hypothesis of instrument validity. The values reported for AR(1) and AR(2) are the *p*-values for first and second order auto-correlated disturbances in the first differences equations. Separate estimations for OECD and non-OECD countries are reported in columns (5) and (6), respectively. Three OECD countries are dropped in these estimations: Estonia (due to few observations and lack of variability), Iceland (very few observations for the dependent variable) and Switzerland (no variability in the ideology; always right-wing governments). In column (7), we add continent-specific time trends.

Table 4. Ideology and time in office

	(1)	(2)	(3)	(4)	(5)
GWgrowth$_{t-1}$	0.496***	0.497***	0.500***	0.500***	0.490***
	(0.174)	(0.174)	(0.173)	(0.175)	(0.1773)
Right	0.143***	0.124*	0.151***	0.150***	0.149**
	(0.048)	(0.067)	(0.049)	(0.049)	(0.069)
Party tenure	0.009	-0.003			
	(0.010)	(0.010)			
(Party tenure)^2	-0.001				
	(0.000)				
*Right*Party tenure*		0.005			
		(0.012)			
Leader tenure			0.007	-0.005	0.053
			(0.009)	(0.019)	(0.061)
(Leader tenure)^2				0.001	
				(0.001)	
*Right*Leader tenure*					-0.033
					(0.063)
Election year	0.026	0.031	0.024	0.027	-0.007
	(0.034)	(0.033)	(0.032)	(0.032)	(0.038)
Gov. consumption	-0.048**	-0.048**	-0.048**	-0.048**	-0.047**
	(0.022)	(0.022)	(0.022)	(0.022)	(0.021)
Years of schooling	-0.032	-0.031	-0.036	-0.036	-0.021
	(0.138)	(0.136)	(0.141)	(0.140)	(0.140)
Ln(GDP per capita)	1.836***	1.852***	1.822***	1.860***	1.709***
	(0.629)	(0.631)	(0.633)	(0.638)	(0.635)
Trade openness	-0.007	-0.007	-0.007	-0.007	-0.007
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Urban pop. ratio	0.035	0.036	0.032	0.030	0.025
	(0.030)	(0.030)	(0.030)	(0.032)	(0.030)
# Observations	1533	1533	1534	1534	1534
# Countries	78	78	78	78	78
# Instruments	50	50	49	50	49
Hansen *J*-test	0.351	0.253	0.243	0.292	0.210
AR(1)	0.000	0.000	0.000	0.000	0.000
AR(2)	0.272	0.267	0.264	0.260	0.251

Notes: The dependent variable is *GWgrowth*. See Table 2 for definitions of the variables. Robust standard errors are in parentheses; significance levels at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%. Year fixed effects included in all estimations. The one-step difference-GMM estimator is employed, where the lag of the dependent variable is treated as endogenous in the GMM estimations; the respective lagged values and the other explanatory variables are used as instruments in the first-difference equation; they were collapsed to avoid the problem of having too many instruments.

Online Supplementary Material

to

Shades of red and blue: Government ideology and sustainable development

Table A1. Sensitivity Analysis I

	(1)	(2)	(3)	(4)	(5)	(6)
GWgrowth$_{t-1}$	0.5022***	0.5149***	0.4510***	0.5150***	0.4989***	0.4680***
	(0.1735)	(0.1887)	(0.1726)	(0.1989)	(0.1739)	(0.1726)
Right	0.1453***	0.1407***	0.1156**	0.1447***	0.1479***	0.1094**
	(0.0488)	(0.0507)	(0.0491)	(0.0510)	(0.0491)	(0.0479)
Party tenure	-0.0027	-0.0001	0.0067*	0.0016	0.0006	0.0062
	(0.0060)	(0.0064)	(0.0038)	(0.0076)	(0.0060)	(0.0039)
Election year		0.0155				0.0260
		(0.0370)				(0.0321)
Election Gov change	0.1026*					
	(0.0544)					
Before Election		-0.0254				
		(0.0346)				
After Election			0.0174			
			(0.0282)			
Election timing				0.0092		
				(0.0545)		
Election month					-0.0067	
					(0.0566)	
Majority						0.0561
						(0.0527)
Coalition						0.0807
						(0.0841)
Gov consumption	-0.0494**	-0.0483**	-0.0421**	-0.0462**	-0.0480**	-0.0429**
	(0.0221)	(0.0229)	(0.0195)	(0.0210)	(0.0217)	(0.0198)
Years Schooling	-0.0310	0.0200	-0.0267	-0.0377	-0.0309	-0.0204
	(0.1394)	(0.1359)	(0.1379)	(0.1452)	(0.1393)	(0.1347)
LnGDP per capita	1.9141***	1.9921***	1.9669***	1.9914***	1.8610***	1.7316***
	(0.6455)	(0.7023)	(0.6133)	(0.6814)	(0.6333)	(0.6228)
Trade openness	-0.0074	-0.0068	-0.0064	-0.0093	-0.0074	-0.0060
	(0.0068)	(0.0071)	(0.0070)	(0.0067)	(0.0067)	(0.0069)
Urban pop ratio	0.0370	0.0296	0.0213	0.0331	0.0354	0.0315
	(0.0308)	(0.0342)	(0.0300)	(0.0319)	(0.0306)	(0.0306)
# Observations	1533	1469	1504	1442	1533	1520
# Countries	78	78	78	78	78	78
# Instruments	49	48	49	49	49	51
Hansen *J*-test	0.1077	0.2891	0.2500	0.0818	0.3341	0.5029
AR(1)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AR(2)	0.2707	0.2434	0.3580	0.2139	0.2650	0.2968

Notes: See Tables 1 to 4 in the main text. Robust standard errors are in parentheses; significance levels at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%. Year fixed-effects are controlled for in all estimations. A one step difference-GMM estimator is employed in the estimations and the instruments are collapsed. *Election Gov change* is a dummy variable that takes the value of one when there are elections that result in the change of the political orientation of the government; 0 otherwise. *Before Election* is equal to one in the years before the elections; 0 otherwise. *After Election* is equal to one in the years after the elections; 0 otherwise. *Election timing* measures the passage of the time between election (it is equal to one in the election years). *Election month* accounts for the month of the election and it is computed as in Franzese (2000, pp 61-83). *Majority* is a dummy variable that takes the value of one when the government has majority in the parliament; 0 otherwise. *Coalition* is a dummy variable that takes the value of one when the government is formed by a coalition of parties; 0 otherwise.

Table A2. Sensitivity Analysis II

	(1)	(2)	(3)	(4)	(5)
GWgrowth$_{t-1}$	0.3860***	0.3912***	0.4921***	0.5529***	0.3850
	(0.1446)	(0.1461)	(0.1716)	(0.1390)	(0.2443)
Right	0.1323***	0.1302***	0.1446***	0.1851***	0.1044***
	(0.0459)	(0.0460)	(0.0481)	(0.0634)	(0.0355)
Party tenure	0.0008	0.0006	-0.0017	-0.0017	0.0002
	(0.0051)	(0.0054)	(0.0059)	(0.0078)	(0.0043)
Election year	0.0223	0.0250	0.0308	0.0314	0.0313
	(0.0307)	(0.0314)	(0.0323)	(0.0413)	(0.0240)
Gov consumption	-0.0414**	-0.0425**	-0.0467**	-0.0614**	-0.0352**
	(0.0201)	(0.0205)	(0.0208)	(0.0279)	(0.0159)
Years Schooling	-0.0063	-0.0046	-0.0071	-0.0390	-0.0303
	(0.1287)	(0.1290)	(0.1332)	(0.1785)	(0.0982)
LnGDP per capita			2.1922***	2.4916***	1.1978***
			(0.7258)	(0.8094)	(0.4565)
GDPpc growth	0.0406***				
	(0.0124)				
GDP growth		0.0299**			
		(0.0120)			
Trade openness	-0.0089	-0.0087	-0.0071	-0.0103	-0.0048
	(0.0070)	(0.0070)	(0.0067)	(0.0090)	(0.0049)
Urban pop ratio	0.0367	0.0380		0.0390	0.0357
	(0.0283)	(0.0290)		(0.0370)	(0.0261)
%Pop0-14			0.0408		
			(0.0460)		
%Pop65above			-0.1546		
			(0.0950)		
# Observations	1537	1537	1533	1533	1533
# Countries	79	79	78	78	78
# Instruments	49	49	50	49	49
Hansen *J*-test	0.1549	0.1723	0.3261	0.4044	0.1279
AR(1)	0.0000	0.0000	0.0000	0.0000	0.0000
AR(2)	0.3907	0.3700	0.2646	0.2901	0.2411

Notes: See Tables 1 to 4 in the paper. Robust standard errors are in parentheses; significance levels at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%. Year fixed-effects are controlled for in all estimations. A one step difference-GMM estimator is employed in the estimations and the instruments are collapsed. *GDPpc growth* is the real GDP per capita growth rate. *GDP growth* is the real GDP growth rate. *%Pop0-14* accounts for the percentage of population between 0 and 14 years old. *%Pop65above* accounts for the percentage of population with 65 years or more. Columns (5) and (6) report results considering different GNI wealth ratios in the construction of the dependent variable: in regression 5 (6), *GWgrowth* was computed considering 0.25 (0.15) for industrialized countries and 0.20 (0.10) for developing and oil-rich countries.

Table A3. Presidential *vs* non-Presidential regimes and Plurality *vs* non-Plurality regimes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GWgrowth$_{t-1}$	0.6085***	0.3989***	0.4970***	0.4970***	0.1746	0.7099***	0.4569***	0.4569***
	(0.1636)	(0.1262)	(0.1741)	(0.1741)	(0.2213)	(0.0954)	(0.1723)	(0.1723)
Right	0.0924	0.1717**	0.1996**		0.1242*	0.1216	0.1864**	
	(0.0814)	(0.0676)	(0.0944)		(0.0652)	(0.0893)	(0.0757)	
*Right*Presid*				0.1996**				
				(0.0944)				
*Right*NPresid*			-0.0861	0.1135*				
			(0.1225)	(0.0646)				
*Right*Plural*								0.1864**
								(0.0757)
*Right*NPural*							-0.0952	0.0912
							(0.1175)	(0.0762)
Party tenure	0.0044	-0.0055	-0.0010	-0.0010	-0.0007	-0.0062	-0.0006	-0.0006
	(0.0045)	(0.0126)	(0.0061)	(0.0061)	(0.0109)	(0.0071)	(0.0062)	(0.0062)
Election year	0.0486	0.0223	0.0319	0.0319	0.0234	0.0993**	0.0312	0.0312
	(0.0485)	(0.0409)	(0.0327)	(0.0327)	(0.0495)	(0.0506)	(0.0320)	(0.0320)
Gov consumption	-0.0341*	-0.1036***	-0.0481**	-0.0481**	-0.0541**	-0.0595***	-0.0459**	-0.0459**
	(0.0183)	(0.0162)	(0.0217)	(0.0217)	(0.0244)	(0.0230)	(0.0216)	(0.0216)
Years Schooling	-0.2022	0.2104	-0.0307	-0.0307	-0.2363	-0.0017	-0.0395	-0.0395
	(0.2466)	(0.1662)	(0.1375)	(0.1375)	(0.2799)	(0.2088)	(0.1380)	(0.1380)
LnGDP per capita	1.1932	0.8780	1.8501***	1.8501***	2.0856**	1.9007**	1.9648***	1.9648***
	(0.8839)	(0.7370)	(0.6308)	(0.6308)	(0.8811)	(0.9671)	(0.6498)	(0.6498)
Trade openness	-0.0119	0.0048	-0.0075	-0.0075	-0.0071**	-0.0074	-0.0069	-0.0069
	(0.0086)	(0.0061)	(0.0068)	(0.0068)	(0.0036)	(0.0129)	(0.0066)	(0.0066)
Urban pop ratio	-0.0236	0.0951*	0.0364	0.0364	0.0395	0.0608**	0.0392	0.0392
	(0.0413)	(0.0506)	(0.0305)	(0.0305)	(0.0588)	(0.0253)	(0.0313)	(0.0313)
# Observations	740	757	1533	1533	771	690	1525	1525
# Countries	40	36	78	78	38	35	77	77
# Instruments	49	49	50	49	49	49	50	50
Hansen *J*-test	1.0000	1.0000	0.2888	0.4154	1.0000	1.0000	0.8764	0.8764
AR(1)	0.0003	0.0045	0.0000	0.0000	0.0007	0.0043	0.0000	0.0000
AR(2)	0.3851	0.1573	0.2648	0.2648	0.0762	0.1515	0.3512	0.3512

Notes: See Tables 1 to 4 in the paper. Robust standard errors are in parentheses; significance levels at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%. Year fixed-effects are controlled for in all estimations. A one step difference-GMM estimator is employed in the estimations and the instruments are collapsed. *Presid* (*NPresid*) is a dummy variable that takes the value of 1 in countries with presidential (non-presidential) regimes; 0 otherwise. *Plural* (*NPlural*) is a dummy variable that takes the value of 1 in countries with plurality (non-plurality) regimes; 0 otherwise. A plurality vote (e.g., in North America) or a relative majority (e.g., in the United Kingdom) describe the circumstance when a candidate or proposition polls more votes than any other, but does not receive a majority.

Table A4. Proportional representation *vs* majority representation and the role of institutions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$GWgrowth_{t-1}$	0.5959***	0.2596*	0.4579***	0.4579***	0.4963***	0.5133***	0.5280***
	(0.2310)	(0.1502)	(0.1716)	(0.1716)	(0.1515)	(0.1451)	(0.1441)
Right	0.1675***	-0.1410	0.1710***		0.1469***	0.1423**	0.1422**
	(0.0505)	(0.1300)	(0.0558)		(0.0562)	(0.0581)	(0.0576)
*Right*PropR*				0.1710***			
				(0.0558)			
*Right*MajR*			-0.1505	0.0205			
			(0.1222)	(0.1030)			
Party tenure	-0.0015	0.0066	-0.0010	-0.0010	0.0001	0.0014	0.0020
	(0.0057)	(0.0166)	(0.0061)	(0.0061)	(0.0063)	(0.0068)	(0.0064)
Election year	0.0653**	-0.0233	0.0320	0.0320	0.0388	0.0294	0.0317
	(0.0315)	(0.0906)	(0.0322)	(0.0322)	(0.0364)	(0.0351)	(0.0362)
Gov consumption	-0.0689***	-0.0443***	-0.0459**	-0.0459**	-0.0788***	-0.0783***	-0.0810***
	(0.0248)	(0.0169)	(0.0215)	(0.0215)	(0.0262)	(0.0260)	(0.0248)
Years Schooling	0.0628	-0.1893	-0.0414	-0.0414	0.0194	0.0198	0.0300
	(0.1142)	(0.4116)	(0.1368)	(0.1368)	(0.1494)	(0.1519)	(0.1507)
LnGDP per capita	2.2846***	1.3845	1.9981***	1.9981***	2.2967***	2.6216***	2.4849***
	(0.7541)	(1.5153)	(0.6535)	(0.6535)	(0.6525)	(0.7519)	(0.7274)
Trade openness	-0.0076	-0.0072	-0.0070	-0.0070	-0.0041	-0.0044	-0.0042
	(0.0089)	(0.0061)	(0.0066)	(0.0066)	(0.0072)	(0.0071)	(0.0070)
Urban pop ratio	0.0484	0.0443	0.0380	0.0380	0.0425	0.0354	0.0415
	(0.0304)	(0.1318)	(0.0308)	(0.0308)	(0.0361)	(0.0387)	(0.0370)
FinRiskRating					0.0020		
					(0.0087)		
PolRiskRating					-0.0067		
					(0.0086)		
BureaucracyQual						-0.0584	
						(0.1016)	
Corruption						-0.0179	
						(0.0456)	
DemocAccountab						0.1072*	0.1116**
						(0.0586)	(0.0566)
EthnicTensions						-0.1501***	-0.1329**
						(0.0550)	(0.0553)
ExternalConflict						0.0628	
						(0.0480)	
GovStability						0.0031	
						(0.0185)	
InternalConflict						-0.0699***	-0.0597**
						(0.0241)	(0.0238)
InvestProfile						0.0109	
						(0.0211)	
LawOrder						-0.0129	
						(0.0415)	
ReligiousTensions						0.0767	
						(0.1116)	
SocEcoConditions						-0.0328	
						(0.0239)	
# Observations	1219	286	1525	1525	1394	1394	1394
# Countries	60	16	77	77	76	76	76
# Instruments	49	49	50	50	47	56	48
Hansen *J*-test	0.9956	1.0000	0.3773	0.3647	0.1751	0.9349	0.1588
AR(1)	0.0001	0.0217	0.0000	0.0000	0.0000	0.0001	0.0001
AR(2)	0.3848	0.3732	0.3505	0.3505	0.4881	0.5668	0.5330

Notes: See Tables 1 to 4 in the paper. Robust standard errors are in parentheses; significance levels at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%. Year fixed-effects are controlled for in all estimations. A one step difference-GMM estimator is employed in the estimations and the instruments are collapsed. *PropR* (*MajR*) is a dummy variable that takes the value of one in countries with proportional (majority) representation systems; 0 otherwise. Institutional variables data comes from the International Country Risk Guide (see https://www.prsgroup.com/about-us/our-two-methodologies/icrg).

Table A5. OECD *vs* non-OECD countries and High-income *vs* Low-income countries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	OECD	NOECD	All	All	HIC	NHIC	All	All
$GWgrowth_{t-1}$	0.5553***	0.3054	0.4992***	0.4992***	0.2137	0.5254***	0.5031***	0.5031***
	(0.1033)	(0.2098)	(0.1748)	(0.1748)	(0.2992)	(0.1330)	(0.1733)	(0.1733)
Right	0.1326***	0.2408***	0.1069*		0.1553***	0.2127**	0.1550**	
	(0.0491)	(0.0932)	(0.0546)		(0.0588)	(0.0927)	(0.0665)	
*Right*OECD*				0.1069*				
				(0.0546)				
*Right*NOECD*			0.1313	0.2382***				
			(0.0982)	(0.0834)				
Party tenure	0.0073*	-0.0092	0.0048		0.0093*	-0.0101	0.0081**	
	(0.0040)	(0.0104)	(0.0039)		(0.0048)	(0.0103)	(0.0041)	
*Party tenure *OECD*				0.0048				
				(0.0039)				
*Party tenure *NOECD*			-0.0139	-0.0090				
			(0.0122)	(0.0114)				
*Right*HIC*								0.1550**
								(0.0665)
*Right*NHIC*							0.0131	0.1681*
							(0.1215)	(0.0906)
*Party tenure * HIC*								0.0081**
								(0.0041)
*Party tenure *NHIC*							-0.0210*	-0.0129
							(0.0117)	(0.0113)
Election year	0.0503	0.0265	0.0307	0.0307	0.0418	-0.0098	0.0313	0.0313
	(0.0352)	(0.0601)	(0.0328)	(0.0328)	(0.0295)	(0.0619)	(0.0332)	(0.0332)
Gov consumption	-0.1416***	-0.0335**	-0.0478**	-0.0478**	-0.1022***	-0.0407**	-0.0477**	-0.0477**
	(0.0224)	(0.0158)	(0.0215)	(0.0215)	(0.0347)	(0.0170)	(0.0215)	(0.0215)
Years Schooling	0.1166	-0.4144	-0.0308	-0.0308	0.1581	-0.1263	-0.0358	-0.0358
	(0.1268)	(0.2873)	(0.1376)	(0.1376)	(0.1663)	(0.3069)	(0.1392)	(0.1392)
LnGDP per capita	0.9244	2.2268**	1.8512***	1.8512***	1.9955**	2.2239**	1.8511***	1.8511***
	(0.7219)	(0.9464)	(0.6307)	(0.6307)	(0.7832)	(1.0755)	(0.6333)	(0.6333)
Trade openness	0.0139**	-0.0161**	-0.0074	-0.0074	0.0002	-0.0146*	-0.0072	-0.0072
	(0.0055)	(0.0075)	(0.0068)	(0.0068)	(0.0086)	(0.0076)	(0.0067)	(0.0067)
Urban pop ratio	0.0569**	0.0320	0.0373	0.0373	0.0328	0.0188	0.0365	0.0365
	(0.0278)	(0.0466)	(0.0304)	(0.0304)	(0.0407)	(0.0507)	(0.0301)	(0.0301)
# Observations	789	744	1533	1533	870	663	1533	1533
# Countries	31	47	78	78	37	41	78	78
# Instruments	49	49	51	51	49	49	51	51
Hansen *J*-test	1.0000	1.0000	0.4214	0.4214	1.0000	1.0000	0.6091	0.6091
AR(1)	0.0026	0.0001	0.0000	0.0000	0.0006	0.0002	0.0000	0.0000
AR(2)	0.2367	0.1496	0.2706	0.2706	0.2693	0.4381	0.2738	0.2738

Notes: See Tables 1 to 4 in the paper. Robust standard errors are in parentheses; significance levels at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%. Year fixed-effects are controlled for in all estimations. A one step difference-GMM estimator is employed in the estimations and the instruments are collapsed. *OECD* (*NOECD*) is a dummy variable that takes the value of 1 for OECD countries (non-OECD countries); 0 otherwise. *HIC* (*NHIC*) is a dummy variable that takes the value of 1 for high-income countries (not high or low-income countries); 0 otherwise.

Table A6. Other robustness checks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Cold War(CW)	After CW	≥2000	Without Lat.Am.	% Seats <75%	% Seats <60%	Strongly Democratic	System GMM	GDPpc Regression	5-year Spans	5-year Spans
GWgrowth$_{t-1}$	0.723***	0.350*	0.222	0.363*	0.471***	0.450**	0.413**	0.669***		0.382***	0.383***
	(0.145)	(0.204)	(0.167)	(0.202)	(0.178)	(0.179)	(0.200)	(0.095)		(0.049)	(0.049)
Right	0.250*	0.114**	0.057	0.131**	0.160***	0.144***	0.123***	0.051**	-1.165**	0.114***	0.151***
	(0.132)	(0.056)	(0.080)	(0.058)	(0.053)	(0.046)	(0.044)	(0.026)	(0.593)	(0.041)	(0.041)
Party tenure	-0.001	0.010	0.007*	0.003	0.007	0.007**	0.002	0.002	-0.041		
	(0.012)	(0.006)	(0.004)	(0.010)	(0.006)	(0.003)	(0.006)	(0.003)	(0.067)		
Election year	-0.012	0.038	0.034	0.015	0.029	0.031	0.039	0.046	0.305*		
	(0.055)	(0.032)	(0.043)	(0.038)	(0.032)	(0.028)	(0.029)	(0.032)	(0.184)		
Gov changes											-0.021
											(0.062)
Gov consumption	-0.023	-0.085***	-0.089***	-0.062**	-0.061***	-0.079***	-0.060**	-0.027**	-0.052	-0.073***	-0.073***
	(0.020)	(0.024)	(0.035)	(0.027)	(0.019)	(0.020)	(0.028)	(0.012)	(0.050)	(0.015)	(0.015)
Years Schooling	-0.010	-0.116	0.058	-0.030	-0.055	-0.139	0.082	0.047	1.974*	-0.152**	-0.151**
	(0.441)	(0.149)	(0.211)	(0.176)	(0.142)	(0.208)	(0.106)	(0.038)	(1.189)	(0.067)	(0.067)
LnGDP per capita	1.210	2.353***	2.062**	2.093**	1.857***	1.127**	1.677***	0.168**		0.668**	0.655**
	(0.857)	(0.887)	(0.977)	(0.897)	(0.659)	(0.522)	(0.628)	(0.082)		(0.321)	(0.324)
Private Investment									0.305**		
									(1.45)		
Trade openness	-0.026	0.001	0.005	-0.002	-0.008	-0.006	-0.001	0.002	-0.001	0.003	0.003
	(0.017)	(0.005)	(0.006)	(0.005)	(0.008)	(0.004)	(0.005)	(0.002)	(0.035)	(0.004)	(0.004)
Urban pop ratio	0.119**	0.027	0.031	0.005	0.033	0.059*	0.037	-0.001	-0.464**	0.026*	0.027*
	(0.059)	(0.040)	(0.045)	(0.038)	(0.031)	(0.031)	(0.029)	(0.005)	(0.223)	(0.015)	(0.015)
GDPpc growth$_{t-1}$									0.245***		
									(0.071)		
# Observations	383	1150	743	1113	1429	1115	1356	1638	1622	382	382
# Countries	47	77	74	60	78	70	69	79	79	80	80
# Instruments	39	38	30	49	49	49	49	51	48	46	47
Hansen *J*-test	0.685	0.117	0.288	0.999	0.242	0.665	0.950	0.276	0.516	0.356	0.349
Diff-Hansen test								0.354		0.481	0.501
AR(1)	0.007	0.000	0.004	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000
AR(2)	0.773	0.148	0.536	0.174	0.250	0.300	0.491	0.349	0.207	0.317	0.311

Notes: See Tables 1 to 4 in the paper. Robust standard errors are in parentheses; significance levels at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%. Regressions controlling for year fixed-effects. A one step difference-GMM estimator is employed in the estimations and the instruments are collapsed. In columns 1 and 2 are considered the Cold War and after Cold War (>1991) periods. "*≥2000*" in column 2 indicates that the time period starts in 200. Latin America countries are excluded from the sample in regression 4 to avoid spells of populism. In regression 5 are only consider countries with a Legislative and Executive Index of Electoral Competitiveness equal to 7 (the largest party received less than 75% of the seats), while in regression 6 we adjust the measure to less than 60% of the seats. As an alternative way to control for electoral competitiveness and democracy, regression 7 only considers those highly democratic countries (*Polity IV Index* >= 8). In column 8 are reported the

results from a Blundell-Bond system GMM estimator (the difference-in-Hansen test assesses the validity of the GMM instruments of the levels equation). Finally, the results for a GDP per capita growth (*GDPpc growth*) equation are reported in column (9), where *LnGDP per capita* is replaced by private investment as percentage of GDP. In columns (10) and (11) are reported the results from a system-GMM estimator using 5-year time spans and considering only those variables for which it makes sense to run the regressions with these spans. *Right* in this case measures the proportion of time a right-wing government is in office in each 5-year span. *Election year* is replaced by *Gov changes* to account for the frequency of elections. It measures the number of government changes in each 5-year period.

Table A7. Description of the additional variables used in the sensitivity analysis

Variable	Description	Obs.	Mean	S.D.	Min.	Max
Election Gov change	Dummy variable that takes the value of 1 when there are elections that result in the change of the political orientation of the government; 0, otherwise..	2042	0.10	0.30	0	1
Gov changes	Account for the frequency of elections; it measures the number of government changes in each 5-year period.	1738	1.65	0.65	0	4
Election timing	Measures the passage of the time between elections (varies between 0 and 1; it is equal to 1 in the election years).	1941	0.64	0.28	0.09	1
Election month	Accounts for the month of the election and it is computed as in Franzese (2000, pp 61-83); varies between 0 and 1 and a higher value is assigned if elections are later in the year.	2042	0.08	0.22	0	0.96
Majority	Dummy variable that takes the value of 1 when the government has majority in the parliament, i.e. more than 50% of the seats; 0, otherwise	2028	0.73	0.44	0	1
Coalition	Dummy variable that takes the value of 1 when the government consists of a coalition of parties; 0, otherwise.	2038	0.54	0.50	0	1
GDPpc growth	Real GDP per capita growth rate.	2014	2.09	3.62	-22.55	30.34
GDP growth	Real GDP growth rate.	2014	3.25	3.66	-22.93	33.74
Private Investment	Private investment as percentage of GDP.	1722	14.73	5.34	1.15	41.05
%Pop0-14	The percentage of population between 0 and 14 years old.	2042	27.23	9.89	13.23	47.61
%Pop65above	The percentage of population with 65 years or more.	2042	9.75	5.01	2.12	22.22
Presid	Dummy variable that takes the value of 1 in countries with presidential regimes; 0, if non-presidential regime.	2041	0.45	0.50	0	1
Plural	Dummy variable that takes the value of 1 in countries with plurality regimes; 0, if non-plurality regime.	2021	0.51	0.50	0	1
PR	Dummy variable that takes the value of 1 in countries with proportional representation systems; 0, if majority system.	2020	0.79	0.41	0	1
OECD	Dummy variable that takes the value of 1 for OECD countries; 0, otherwise.	2042	0.52	0.50	0	1
HIC	Dummy variable that takes the value of 1 for high income countries (income > $12735 per annum, according to the World Bank); 0, otherwise.	2042	0.59	0.49	0	1
Institutional variables						50
FinRiskRating	Financial risk rating	1683	36.96	7.28	7	
PolRiskRating	Political risk rating	1683	71.27	13.44	27	97
BureaucracyQual	Bureaucracy quality	1683	2.74	1.13	0	4
Corruption	Corruption	1683	3.58	1.39	0	6
DemocAccountab	Democracy accountability	1683	4.87	1.16	1	6
EthnicTensions	Ethnic tensions	1683	4.31	1.39	0	6
ExternalConflict	External conflicts	1683	10.37	1.78	2	12
GovStability	Government Stability	1683	7.74	1.93	1	12
InternalConflict	Internal conflicts	1683	9.51	2.32	0	12
InvestProfile	Investment profile	1683	8.15	2.42	2	12
LawOrder	Law and order	1683	4.14	1.52	0	6
ReligiousTensions	Religious tensions	1683	5.02	1.17	0	6
SocEcoConditions	Socioeconomic conditions	1683	6.34	2.20	1	11

***Sources*:** World Development Indicators (1970-2013), World Bank (http://data.worldbank.org/) for the economic and demographic covariates. Database of Political Institutions (1970-2012), World Bank (http://www.worldbank.org) for the political variables. Institutional variables come from the International Country Risk Guide (ICRG – for details on how they are computed see https://www.prsgroup.com/about-us/our-two-methodologies/icrg).