Economic Effects of (Non-)Compliance with Constitutions

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Abstract

Constitutional non-compliance, understood as non-congruence between provisions written in countries' constitutions and the behavior of their governments, has recently become the focus of economic analysis. While other studies concentrate on the reasons behind this phenomenon, we are interested in its economic effects. We argue that non-compliance with constitutions is associated with lower GDP per capita and test our hypothesis empirically for more than 150 countries in the period 1960-2019 using the new Comparative Constitutional Compliance Database and a dynamic panel strategy. Our study confirms adverse economic effects of constitutional violations and this, in particular, in the area of property rights protection and the rule of law. In addition, we indicate groups of countries, where (non-)compliance with constitutions is of particular relevance, as well as identify the mechanisms behind these effects. Our findings contribute to several strands of literature at the nexus of constitutional political economy and development economics.

Keywords

constitutional compliance; constitutional economics; constitutional political economy; *de jure-de facto* gap; property rights; rule of law

JEL codes

E02; H11; K11; K38; K42; O43; O57; P14; P48

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1 Introduction

Recent decades have witnessed considerable progress in constitutional economics research. Studies in this field have systematically confirmed the significance of constitutional frameworks for policy decisions and various economic outcomes (see a survey of some of this literature by Voigt 2011). Some attention has also been devoted to analysis of constitutional change, as well as determinants of constitutional longevity (e.g. Elkins et al. 2009). Most recently, current developments around the globe, which involved documented cases of constitutional violations, gave rise to studies focusing on the problem of constitutional (non-) compliance (Law, Versteeg 2013; Chilton, Versteeg 2020; Voigt 2021).

Voigt (2021) offers a first systematic approach to economic analysis of constitutional (non-) compliance focusing on the so-called de jure-de facto gaps, which are defined as "non-congruence between provisions explicitly written down in the document called the constitution and the behavior of the top representatives of the various government branches such as cabinet members, legislators, and members of the country's top court(s)" (Voigt 2021, p. 1780). Following this conceptualization, recent works concentrate on identifying, one by one, the determinants of constitutional (non-)compliance. They focus, in particular, on: (1) design factors, such as constitutional provisions envisaging sanctions for such violations (e.g. Gutmann et al. 2023a); (2) environmental factors, such as the cultural background, the role of political conflict, and socio-economic country characteristics (e.g. Law, Versteeg 2013; Gutmann et al. 2023b; Lewkowicz et al. 2023); as well as (3) the role of non-state actors, such as the citizens at large, in imposing constraints on the government (e.g. Lewkowicz, Lewczuk 2023; Kantorowicz, Metelska-Szaniawska 2023).

In this paper we turn the focus to the effects of constitutional (non-)compliance. Constitutional economics emphasizes several important functions of the constitution (e.g. Hayek 1960; Buchanan, Tullock 1962; Brennan, Buchanan 1985; North, Weingast 1989; Weingast 1993, 1997; Buchanan 1999; Sunstein 2001; Hadfield, Weingast 2012, 2014), including its role: (1) as a credible commitment mechanism allowing to counteract time-inconsistency problems that arise when short-sighted politicians draft and implement economic policy, (2) as a conflict-solving and coordination device; (3) in providing governments with legitimacy for exercising its functions. De jure-de facto gaps that emerge in constitutional implementation undermine the effectiveness of the commitment mechanism, as well as hamper coordination and lead to legitimacy losses, increasing thereby the transaction costs of governing. All of these consequences are expected to translate into adverse economic effects. Specifically, in this first

attempt to tackle the problem, we argue that non-compliance with constitutions is associated with lower economic development levels, as measured by GDP per capita.

Empirical studies of constitutional (non-)compliance have till recently been significantly constrained by the measurement challenges that researchers interested in this topic faced, and the resulting limited availability of data for cross-country analyses. With the publication of the new Comparative Constitutional Compliance Database (CCCD – Gutmann et al. 2023a), which measures – on a yearly basis – governments' compliance with national constitutions for nearly all countries in the world since 1900, such studies became feasible. This database matches information on de jure constitutional rules with data on their de facto implementation in four areas – property rights and the rule of law, political rights, civil rights, and basic human rights.

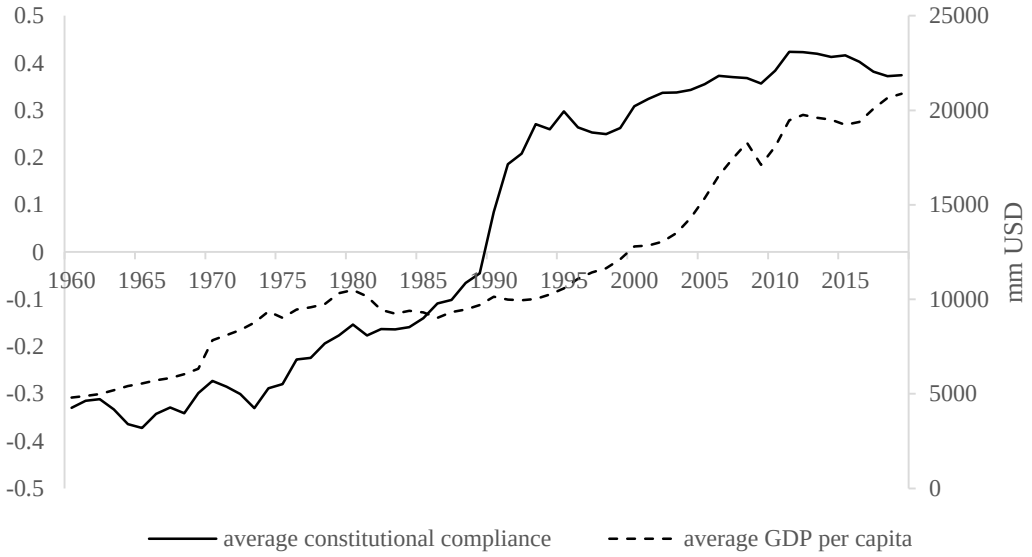
Figure 1 presents a first glance at the trends in average constitutional compliance aggregated over all four areas mentioned above, calculated using the CCCD data (Gutmann et al. 2023a), as well as average GDP per capita levels, in a global setting for the last 60 years (1960-2019[3]). While constitutional compliance exhibits a relatively sharp increase around the year 1990 (attributed, in particular, to constitutional developments during early post-socialist transition in Central and Eastern Europe) and some decrease in the most recent decade, overall this indicator follows a similar increasing trend to that of average GDP per capita calculated for the global sample for the same period. This potential co-relationship merits a more in-depth investigation, which we undertake in this study concerning the economic effects of constitutional (non-) compliance and the conditions and mechanisms behind it.

We base our empirical study on the CCCD data (Gutmann et al. 2023a) and a dynamic panel strategy following Acemoglu et al. (2019), whose study on the economic effects of democracy offers a comprehensive methodological approach to analyze the impact of political-institutional factors on economic performance, allowing to address issues of causality and endogeneity that typically arise in such research. Our empirical study covers a global sample of up to 153 countries for the period 1960-2019 and delivers a first confirmation of adverse economic consequences when countries fail to comply with their written constitutions. Specifically, we provide evidence that higher levels of constitutional compliance (i.e. lower de jure-de facto gaps) contribute, *ceteris paribus*, to higher levels of GDP per capita. In addition, we identify groups of countries and areas of constitutional regulation, where (non-)compliance with

[3] The final year – 2019 – is the most recent year for which data on GDP per capita is available from Feenstra et al. (2015, updt. 2021).

constitutions is of particular relevance, as well as identify the mechanisms behind these effects. With our findings we contribute to several strands of literature at the nexus of constitutional political economy, new institutional economics, and development economics, advancing the understanding of the role of constitutions for the functioning of the economy.

Figure 1. Global trends in average levels of constitutional compliance and GDP per capita



Source: Author's graph based on Gutmann et al. (2023a) and Feenstra (2015, updt. 2021).

The paper is structured as follows. In Section 2 we provide a literature survey allowing to sketch the background for the analysis of economic effects of (non-)compliance with constitutions. Section 3 puts forward our hypotheses and research questions. In Section 4 we introduce the empirical model, describe its construction, the data sources and applied econometric techniques, as well as present and discuss the obtained estimation results. The paper finishes with conclusions.

2 Literature background

Economists have accepted the fundamental importance of constitutions for the organization of societies and for various economic outcomes at the least since the seminal works of Persson and Tabellini (2000; 2003), who have shown that economic theory can account for specific constitutional rules that structure the political process. This approach has its foundations in public choice theory, and in particular in James Buchanan's constitutional economics (Buchanan, Tullock 1962; Buchanan 1987). Since the works of Persson and Tabellini

mentioned above, numerous studies on the effects of specific constitutional rules have been published, e.g., relating to electoral systems, forms of government, constitutional rights and freedoms, constitutional enforcement mechanisms, etc. and these constitutional rules have been found to affect economic growth, public spending, budget deficits, the kinds of public goods provided by government, government effectiveness, corruption, and other performance indicators of government (see the survey by Voigt 2011). This approach views the constitution, primarily, as a mechanism to counteract time-inconsistency problems that are connected with drafting and implementing economic policy by short-sighted politicians. Containing rules that impose constraints on state authorities (e.g., separation of powers, bill of rights, an independent judiciary, budgetary limits), the constitution can enable representatives of the state to turn promises into credible commitments. This, in turn, brings predictability and a favorable environment for the economy to develop – hence generating positive economic effects.

The constitution's role as a pre-commitment device is, however, not the sole function of the constitution viewed from an economic perspective. In the context of the analysis conducted in this paper, its role as a coordination device and source of government's legitimacy vis-à-vis the citizens is also of relevance. This relates, in part, to the conceptualization of the constitution as a bundle of conventions accepted by most members of a society in a general and unconscious way, serving, primarily, to solve a coordination game (e.g., Hardin 1989; Ordeshook 1992). De jure-de facto gaps that emerge when constitutional provisions are not followed put the effectiveness of this coordination mechanism in question and lead to legitimacy losses, increasing thereby the transaction costs of governing the state. This, in turn, is likely to translate into adverse economic effects.

Empirical studies primarily indicate that it is the constitutional practice, i.e. de facto rules, that matter for economic outcomes, not merely the de jure content of constitutions. This has, for example, been shown for judicial and prosecutorial independence (Feld, Voigt 2003; Aaken et al. 2010; Voigt et al. 2015), as well as for central bank independence (Hayo, Voigt 2008). In this paper it is, however, not de facto constitutional rules themselves that we inquire about, but to what degree de jure constitutional rules are complied with in practice, i.e. we specifically turn the focus to the gap between de jure constitution text and its de facto implementation[4].

Recently constitutional economics has put the problem of constitutional compliance in the spotlight. Works in this area draw on Law and Versteeg's (2013) seminal analysis of sham

[4] The difference between these two approaches will be most evident when we present the constitution of the measure of constitutional (non-)compliance in the subsequent section.

constitutions, which are unable to deliver what they promise. Law and Versteeg (2013) coin the term 'constitutional underperformance' and propose a measure thereof based on the share of rights and freedoms envisaged in a country's constitution that were de facto respected by this country in a given time period.[5] In their analysis, they ask whether socioeconomic and political country characteristics can explain the extent of constitutional underperformance with regard to all rights or specific groups of rights in a global sample of countries and provide mixed results. Gutmann and Voigt (2015) use Law and Versteeg's (2013) indicator to show that countries, where Islam dominates the political system, are particularly prone to violate their constitutional promises, what might be explained by the fact that they are often lacking an independent judiciary to enforce these rules (Gutmann, Voigt 2015; Voigt, Gutmann 2013). Chilton and Versteeg (2016, 2020) argue that there is a systematic difference between the enforcement costs of individual rights and organizational rights, because the latter favor the emergence of organizations with the incentives and means to protect these rights. Hence, organizational rights are more likely to be self-enforcing and the gap between de jure and de facto should be relatively small for such rights.

Most recently, Voigt (2021) provides the ground for more systematic research on the determinants of constitutional compliance from an economic perspective. His approach focuses on the incentives of government actors, which constitutions are meant to constrain. Specifically, the behavior of actors in compliance with the constitution text, or diverging from it, takes place within several types of constraints – the design factors (substantive or procedural) relating to the content or structure of the constitution, environmental factors stemming from the conditions, in which a given constitution operates (e.g. a country's constitutional history, its geographical/climate conditions, shared values and norms, trust within a society), as well as constraints stemming from the existence of other actors, such as veto-players, foreign actors, and citizens at large in the system. Given these constraints, the choices of the crucial government actors may be analyzed in a cost-benefit framework. Following this

[5] Specifically, they refer to 15 constitutional rights and the de jure-de facto gap, or constitutional underperformance, is calculated as the ratio of the total number of points a country scores on its de facto protection of each de jure protected right by the number of points that could have been reached if all de jure promised rights were de facto fully protected. Therefore, the resulting indicator reflects the share of de jure promises in the constitution that are de facto upheld. The main shortcoming of Law and Versteeg's (2013) indicator is the limited availability of de facto information at the time of its production, which forced the authors to draw on information from different data sources and to sometimes use arbitrary coding rules. This makes the individual rights indicators difficult to compare with each other and to aggregate them in an overall indicator of constitutional compliance.
Another interesting phenomenon studied by Law and Versteeg (2013) is 'constitutional overperformance', reflecting the extent to which countries respect rights and freedoms that are not found in their de jure constitutions. Metelska-Szaniawska and Lewczuk (2022) provide an empirical study of factors conducive to constitutional overperformance, including spatial diffusion effects, for the global sample.

conceptualization and available data, further works aim at testing the possible determinants of constitutional compliance in empirical studies and bring promising results (e.g. Gutmann et al. 2023a,b,c; Lewkowicz et al. 2023; Lewkowicz, Lewczuk 2023; Kantorowicz, Metelska-Szaniawska 2023).

While recent years have witnessed an intensive development of studies interested in identifying the factors inclining government actors towards violating the constitution, or deterring them from it, the effects of this common phenomenon have not been given much attention. The theoretical approach to studying economic effects of constitutional (non)compliance can draw on the very foundations of constitutional economics, viewing the constitution as a credible commitment mechanism, a coordination device, and as the basis for government's legitimacy. De jure-de facto gaps, indicating less consistency between constitutional practice and de jure constitutional rules, undermine the effectiveness of the commitment mechanism, hamper coordination and lead to legitimacy losses, increasing thereby the transaction costs of governing, and ultimately resulting in less successful economic performance.

Metelska-Szaniawska (2021) is a first empirical attempt at measuring the consequences of constitutional non-compliance. The focus is on protection of seven civil and political rights in post-socialist countries of Central-Eastern Europe and Asia. In principle, all post-socialist countries demonstrate positive de jure-de facto gaps throughout their transition period, confirming that their constitutional practice diverges from the de jure rules coded in their constitutions. Using various econometric techniques for panel data, including three-stage least squares and the synthetic control method, this study finds that the size of the gap matters for successful economic transition, while its determinants include countries' democratization process, presence of political conflict, as well as the constitutions' age and level of comprehensiveness. For several reasons, these findings can, however, only be treated as a first step in studying the problem of economic effects of constitutional (non-)compliance. Firstly, the coverage is limited to post-socialist countries and spans only up to 2012, while crucial developments related to the problem of constitutional violations have taken place in this area in more recent years. Secondly, the gap measure is a very simple one (relating solely to seven constitutional rights) and bears an important caveat as it conflates constitutional compliance and constitutional overperformance, demonstrating, in fact, only whether more de jure or more de facto rights are protected and not precisely the degree of (non)compliance with the constitution. Finally, mechanisms behind the negative effect of the de jure-de facto gap on economic reforms are not studied.

In our paper we undertake a global study of economic effects of constitutional compliance encompassing the period 1960-2019 and this using a new more refined measure of constitutional compliance, with additional focus on the mechanisms behind these effects. As such, our study also clearly falls within the broader research program of political economy and new institutional economics in as far as they are concerned with political-institutional factors affecting economic performance, in particular GDP per capita levels around the globe (e.g. Scully 1988; North 1990; Boettke 1994; Leblang 1996; Hall and Jones 1999; Acemoglu et al. 2001; Rodrik et al. 2004). Specifically, there is considerable overlap with the literature on the distinction between de jure and de facto institutions (e.g. Voigt 2013), the role of different institutional structures and arrangements for economic performance (e.g. Boettke et al. 2008, Williamson 2009), as well as the complex linkages between state capacity and economic development (e.g. Geloso, Salter 2020). Last but not least, this research is linked to a substantial body of literature on the empirical relationships between democracy and economic outcomes (e.g. Barro 1996; Doucouliagos, Ulubasoglu 2008; Acemoglu et al. 2019). The latter is also where we draw our inspiration for the empirical approach employed in this paper.

3 Hypotheses and research questions

While our study, being a first attempt at confirming the existence of economic effects of constitutional (non-)compliance, is primarily explorative in nature, based on the conclusions from the literature discussed in the previous section, we formulate several tentative hypotheses, which are further tested in our empirical analysis.

The main hypothesis that we strive to test in this paper pertains directly to the significance of constitutional (non-)compliance for economic performance of countries. Given the role of the constitution as a mechanism to counteract time-inconsistency problems connected with drafting and implementing economic policy, i.e. in enhancing credible commitment of government agents, one should expect that non-congruence between constitutional practice and de jure constitutional provisions (i.e. the existence of de jure-de facto gaps) undermines the effectiveness of this mechanism and hampers the predictability of government's actions, which economic actors desire. Therefore, constitutional non-compliance brings adverse economic consequences reflected in decreased pro-development activity of economic agents and lower GDP per capita levels. In addition, such de jure-de facto gaps weaken the constitution's role in resolving conflict and coordinating collective action around a focal solution, which is an equilibrium in a game between the sovereign and citizens, as well as erode governments'

legitimacy, contributing to increased transaction costs of governing. Restated, the main hypothesis takes the following form: *Higher levels of constitutional compliance (i.e. lower de jure-de facto gaps) contribute, ceteris paribus, to better economic performance of countries, reflected in higher levels of GDP per capita.*

We further supplement the main hypothesis with three additional research questions.

Firstly, we ask: *For which groups of countries is constitutional compliance a significant determinant of GDP per capita?* (Q1) In this respect we are, in particular, interested whether any difference can be identified between countries of democratic and non-democratic regimes, between countries of differing income levels, as well as for an overlap of both classifications. With regard to income levels, it seems particularly interesting whether poor countries could benefit economically and increase thereby their chances to catch up if they maintained higher levels of constitutional compliance.

Secondly, we inquire: *Constitutional compliance in which areas is a significant determinant of GDP per capita?* (Q2) As already mentioned, there is a vast literature regarding the impact of various *de facto* constitutional rules on economic performance. With regard to the protection of rights themselves, Blume and Voigt (2007) identify different growth effects for four different groups of rights, i.e. property rights, civil rights, social rights, and basic human rights. The empirical model that we construct in this paper and the available data on constitutional compliance allow us to consider this question for four areas of constitutional regulation: (1) property rights and the rule of law; (2) political rights; (3) civil liberties; and (4) basic and human rights.

Thirdly, we pose the question: *Through which channels does constitutional compliance affect GDP per capita?* (Q3) In this regard we consider potential growth mechanisms including investment (in general, as well as foreign direct investment), total factor productivity, trade, tax revenue, government expenditure, and social unrest[6]. Non-compliance of government actors with their country's constitution reduces their credibility and, in turn, the predictability of the economic environment, hindering the propensity to invest in general, as well as – more specifically – by foreign entities (affecting FDI) and in innovative endeavours (influencing

[6] We leave out some channels studied, for instance, in the literature on the relationships between democracy and economic outcomes (e.g. child mortality, education), as we either do not find their convincing association with constitutional compliance, or the relationship is at best expected to run in the reverse direction. Obviously, we cannot rule out that there also exist other mechanisms at play, one of which could be trust in government that certainly contributes to a predicable economic environment and is likely to be significantly eroded by constitutional non-compliance.

productivity). States with lower levels of constitutional compliance may also constitute less credible and, therefore, less attractive trade partners. Lower levels of economic activity will further be reflected in lower tax revenues. The latter are also expected as a result of a lower propensity of citizens to cooperate with the government and increased tax evasion following government's loss in legitimacy resulting from constitutional non-compliance. Higher transaction costs of governing in such circumstances are also likely to be reflected in higher government expenditure (however, compliance with constitutions, e.g. where de jure protection of positive rights is broad, may in itself need increased levels of government spending). Finally, cases of overstepping the constitution by governments may bring rise to social unrest, demonstrating itself in riots and other forms of citizens' protest, leading to destabilization and bringing adverse economic consequences. Testing these detailed hypotheses, accompanying question Q3, in our empirical study will allow to draw conclusions on the mechanisms behind the role of constitutional (non-)compliance for economic outcomes.

4 Empirical model and results

Our empirical approach is inspired by the broadly recognized investigation of the effects of democracy on GDP per capita by Acemoglu et al. (2019). Their comprehensive methodological approach allows to address issues of causality and endogeneity that typically arise in studies of the impact of political-institutional factors on economic performance and also pose a challenge for disentangling the relationship between constitutional (non-)compliance and economic outcomes.

We concentrate on a global sample of 153 countries, for which data is available, for the period 1960-2019. In principle, the tested specifications involve explaining the level of GDP per capita in a given country for a given year (in logs; variable name: *gdp_pc*) by the level of constitutional compliance (in logs[7]; *constitutional_compliance*) and various sets of control variables, as well as for various subsamples.

As already mentioned, the first attempts at measurement of constitutional compliance have been offered by Law and Versteeg (2013) and Metelska-Szaniawska (2021). In yet another approach, the Varieties of Democracy (V-Dem) project (Coppedge et al. 2022) puts forward an 'executive respects constitution' indicator based on expert evaluations of governments behavior in the area of constitutional compliance in general, ranked on a five-point scale and aggregated across

[7] The original variable from the source dataset (Gutmann et al. 2023a) is defined on a [-2, 2] interval. We monotonically transformed this variable by first increasing all values by 2, and then applying the natural logarithm.

experts using an item response theory model (see Pemstein et al. 2021). This indicator should, however, be treated with caution due to the subjectivity of expert evaluations of abstract concepts and the black box character of the evaluation process.

In the most recent attempt to measure constitutional compliance, in reply to the criticisms formulated with regard to the previous proposals, Gutmann et al. (2023a) introduce the Comparative Constitutional Compliance Database, which includes indicators for governments' compliance with 14 constitutional rules grouped into four legal areas: (1) property rights and the rule of law (encompassing indicators for property rights, judicial independence, equality before the law, and rule of law); (2) political rights (freedom of association, freedom of assembly, and the right to form parties); (3) civil rights (free media, free speech, free movement, and religious freedom); and (4) basic human rights (the right to life, freedom from slavery, and protection from torture). The construction of these indicators follows Voigt's (2021) conceptualization of constitutional (non-)compliance and involves matching information on de jure constitutional rules from the Comparative Constitutions Project (CCP – Elkins et al. 2021) with data on these rules' de facto implementation according to the Varieties of Democracy project (Coppedge et al. 2022). Compliance with a constitutional rule is coded 1 if the given rule is protected both de jure and de facto, 0 if the right is protected de jure, but not de facto (i.e. there exists a de jure-de facto gap), and 0.5 if a constitutional right is not protected de jure, irrespective of the de facto indicator[8]. Individual scores for these 14 compliance indicators, as well as aggregated measures for the four above-mentioned categories of constitutional rules and an overall compliance indicator across all rules, are calculated using factor analysis for 175 countries over the time period 1900 to 2020. Wide country and time coverage are not the only advantages of this dataset. A major asset of this indicator construction is that all de jure and all de facto data, respectively, come from the same data source, avoiding problems of comparability due to differing coding rules and measurement strategies for compliance with different rights.

In this study of the effects of constitutional (non-)compliance we use the aggregate constitutional compliance indicator from the Comparative Constitutional Compliance Database (Gutmann et al. 2023a). What is more, we deepen our analysis by focusing separately on each

[8] The logic behind such a coding rule is that countries start from a value of 0.5 and they can deviate from this value upwards or downwards only if they enter constitutional commitments (Gutmann et al. 2023a). Examining the effects of constitutional (non-)compliance coded in this way, we manage to limit the focus precisely to de jure-de facto gaps, avoiding confounding them with constitutional overperformance.

of the four components of constitutional compliance (*property_rights*, *political_rights*, *civil_rights*, and *basic_rights*).

The following subsections present the empirical approach in more detail, as well as discuss the obtained results, with regard to the main hypothesis and the accompanying research questions. A list of all variables employed in this study, together with data sources, as well as descriptive statistics, are included in the Appendix. All included variables are time-varying.

4.1. Is constitutional compliance a significant determinant of GDP per capita?

Our baseline specification aimed at testing the main hypothesis is a dynamic linear panel data model estimating the effects of the lagged constitutional compliance variable[9] on GDP per capita:

$$gdp\_pc_{it} = \beta constitutional\_compliance_{it-1} + \sum_{j=1}^{\rho} \gamma gdp\_pc_{it} + \alpha_i + \delta_t + \varepsilon_{it}, \qquad (1)$$

where α denotes the set of country fixed effects absorbing the impact of any time-invariant country characteristics and δ denotes the full set of year fixed effects or constitution-systems fixed effects[10] (depending on specification). The error term ε captures all other time-varying unobservable shocks to GDP per capita. What is more, our specification includes ρ lags of *gdp_pc* on the right-hand side of the equation to control for the dynamics of GDP per capita.[11]

We use two econometric techniques to estimate the above equation – dynamic panel data model with the standard within estimator and dynamic panel GMM model with the Arellano-Bond estimator. The within estimates have an asymptotic bias of order 1/T (the Nickell bias) resulting from the failure of strict exogeneity in dynamic panel models (Nickell 1981; Alvarez, Arellano 2003). The Nickell bias shall, however, be small in our econometric setting, as T is relatively large in our panel, i.e., on average each country is observed 42.52 times. That is why we use the model with within estimates as a starting point of our research.

[9] We use the first lag of constitutional compliance expecting effects of the latter on economic performance to be delayed in time. A study focusing on long-run effects of constitutional compliance is beyond the scope of this paper.

[10] We use constitution-systems fixed effects so as to control for changes of national constitutions affecting de jure content of constitutions.

[11] Following the approach of Acemoglu et al. (2019) we also tested specifications with spatial components of constitutional compliance and GDP per capita, however we found them insignificant. Therefore, we do not perform any spatial analysis within the scope of this paper. Given that our constitutional compliance indicator is not dichotomous in nature, we also do not employ estimation techniques used in the study by Acemoglu et al. (2019) tailored to such type of data (constructing dichotomous measures of constitutional compliance aggregated across several constitutional rules is feasible, however would be based on arbitrary assumptions).

Table 1 presents the estimation results for the baseline specification. Columns I-II report the within estimates, while columns III-IV – GMM estimates mitigating the problem of the Nickell bias. We include four lags of GDP per capita, as suggested by the results of the joint significance test for lags 5-8 (its *p*-value is reported in Table 1). Following Acemoglu et al. (2019), for all specifications we also calculate the persistence in GDP per capita (defined as a sum of estimated coefficients for all time lags of *GDP_pc* variable) to verify whether its value is close to the unit root.

Table 1. Baseline results. Dependent variable: *GDP_pc*

	WITHIN ESTIMATES		ARELLANO-BOND ESTIMATES	
	country & year FE	country & constitution-systems FE	country & year FE	country & constitution-systems FE
	I	II	III	IV
constitutional_compliance, lag 1	0.002* (1.80)	0.004*** (2.28)	0.004*** (2.00)	0.004*** (2.15)
GDP_pc, lag 1	1.159*** (29.24)	1.164*** (32.11)	1.114*** (23.37)	1.156*** (33.21)
GDP_pc, lag 2	-0.103*** (-3.93)	-0.123*** (-4.67)	-0.097*** (-3.83)	-0.122*** (-4.71)
GDP_pc, lag 3	-0.023*** (-5.20)	-0.008 (-0.20)	-0.019 (-0.51)	-0.009 (-0.23)
GDP_pc, lag 4	-0.075* (-5.20)	-0.062*** (-4.03)	-0.071*** (-5.12)	-0.059*** (-3.89)
p-value, *GDP_pc* lags 5-8	0.325	0.384	0.259	0.337
persistence of the *GDP_pc* process	0.958*** (182.83)	0.970*** (237.66)	0.926*** (63.33)	0.966*** (199.63)
unit root test *t*-statistics	-3.94	-3.94		
p-value (reject unit root)	0.000	0.000		
AR2 test *p*-value			0.083	0.104
# of observations	6,632	6,632	6,418	6,418
# of countries	153	153	153	153

Notes: Values of the *t*-statistic in brackets. *** Significant at a 5% level. * Significant at a 10% level.
Source: Authors' calculations.

The bottom rows of Table 1 present the results of several tests performed for our baseline specification. Firstly, we test for the robustness of our findings to unit root levels of persistence in the GDP process. Specifically, for the within estimates presented in columns I-II we calculate Levin et al.'s (2002) test for the presence of unit root in the GDP. For all specifications the presence of unit root is rejected (*t*-statistics from the test together with *p*-values are reported in Table 1). Secondly, columns III and IV with GMM estimates report the *p*-value of a test for AR2 correlation in the first-differenced residuals. The absence of serial correlation is a requirement for consistent estimation. The outcomes of the test suggest that we cannot reject the assumption of no serial correlation for any of our GMM specifications.

Most importantly, the obtained baseline results indicate a positive and significant effect of constitutional compliance on GDP per capita. The values of the obtained coefficients are not high, however this is expected given the way constitutional compliance is measured.

Next we propose several robustness checks in order to verify whether the results obtained in the baseline specification were not driven by time-varying political or economic factors that simultaneously impact constitutional compliance and GDP per capita (time-invariant factors are consumed by fixed effects). Specifically, we estimate six robustness check specifications.

In the first one, we investigate whether our results were not driven by transition to democracy that was accompanied by the introduction of new constitutions in Soviet and Soviet-satellite countries. Therefore, we add to our specification interactions between a dummy for Soviet and Soviet satellite countries and dummies for the years 1989, 1990, 1991, and post-1992 (*soviets_post_1989*, *soviets_post_1990*, *soviets_post_1991*, *soviets_post_1992*). Secondly, we account for the possible effect of social unrest (*social_unrest*), which may precede the changes in constitutional compliance and exert long-term impact on economic development. Thirdly, we test whether the estimated effect of constitutional compliance on GDP per capita was not driven by external economic shocks related to trade or financial flows. In order to control for such possibility, we propose two specifications: one with four lags of the trade exposure variable (in logs; *trade_gdp*) and the other with four lags of net financial flows variable (*net_fin_flows*). Fifthly, we account for the impact of population structure on GDP per capita by controlling for four lags of the share of the population below 15 and above 64 years old (*population_0_15*, *population_64_+*, respectively). Finally, country's leaders in power could affect both economic development and the measure of constitutional compliance. To address this issue we include, as controls, dummy variables representing the political leader being in power in a given country in a given year (*leader*).

In subsequent columns, Table 2 presents the obtained results for all these robustness checks and all applied estimation techniques. The overall picture is clear – the inclusion of these control variables does not have a considerable impact on the baseline conclusions pertaining to the significance of constitutional compliance for GDP per capita[12].

[12] Minor exceptions for the specifications with country and year fixed effects involve controlling for the population structure (in the within estimations) and leaders (in both models), however these doubts are dispelled when one collates these results with the ones obtained for the respective models with country and constitution-systems fixed effects. On the contrary, we obtain insignificant coefficients for constitutional compliance when net financial flows are controlled in estimations including country and constitution-systems fixed effects (in both models), but with year fixed effects significance of this variable is retained throughout all estimations.

Table 2. Results of robustness checks. Dependent variable: *GDP_pc*

	COVARIATES INCLUDED											
	soviet dummies	social unrest	trade openness	net financial flows	population structure	leaders	soviet dummies	social unrest	trade openness	net financial flows	population structure	leaders
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	country & year FE						country & constitution-systems FE					
	WITHIN ESTIMATES											
constitutional_compliance, lag 1	0.002* (1.78)	0.002* (1.77)	0.002* (1.86)	0.002* (1.65)	0.001 (1.33)	0.002 (0.74)	0.004*** (2.22)	0.004*** (2.29)	0.004*** (2.80)	0.002 (1.14)	0.003* (1.94)	0.004* (1.68)
GDP_pc, lag 1	1.159*** (29.23)	1.157*** (28.77)	1.169*** (41.75)	1.067*** (36.53)	1.154*** (27.72)	0.978*** (32.08)	1.163*** (32.09)	1.164*** (32.19)	1.176*** (39.96)	1.095*** (34.55)	1.134*** (26.64)	0.996*** (34.11)
GDP_pc, lag 2	-0.103*** (-3.92)	-0.103*** (-3.93)	-0.159*** (-4.77)	-0.111*** (-2.06)	-0.102*** (-3.86)	-0.068*** (-2.08)	-0.123*** (-4.65)	-0.124*** (-4.72)	-0.188*** (-5.58)	-0.137*** (-2.55)	-0.118*** (-4.46)	-0.088*** (-2.69)
GDP_pc, lag 3	-0.023 (-0.57)	-0.022 (-0.56)	0.014 (0.52)	0.079 (1.44)	-0.021 (-0.54)	0.022 (0.69)	-0.008 (-0.20)	-0.007 (-0.17)	0.028 (1.07)	0.085 (1.61)	-0.006 (-0.17)	0.033 (1.05)
GDP_pc, lag 4	-0.075*** (-5.21)	-0.075*** (-5.08)	-0.068*** (-3.33)	-0.098*** (-3.55)	-0.076*** (-5.41)	-0.041*** (-2.19)	-0.062*** (-4.04)	-0.063*** (-3.98)	-0.051*** (-2.42)	-0.078*** (-2.99)	-0.075*** (-5.01)	-0.026 (-1.41)
persistence of the *GDP_pc* process	0.959*** (183.20)	0.957*** (175.61)	0.954*** (213.26)	0.937*** (128.29)	0.954*** (133.35)	0.891*** (55.30)	0.970*** (237.31)	0.970*** (236.80)	0.964*** (208.96)	0.964*** (121.20)	0.933*** (110.28)	0.915*** (87.74)
# of observations	6,632	6,524	5,489	2,978	6,632	5,982	6,632	6,524	5,489	2,978	6,632	5,982
# of countries	153	153	148	101	153	144	153	153	148	101	153	144
	ARELLANO-BOND ESTIMATES											
constitutional_compliance, lag 1	0.004* (1.91)	0.005*** (2.14)	0.003* (1.82)	0.003* (1.65)	0.004* (1.85)	0.003 (1.50)	0.004*** (2.10)	0.004*** (2.20)	0.004*** (2.76)	0.002 (0.94)	0.003* (1.84)	0.006*** (2.37)
GDP_pc, lag 1	1.113*** (23.47)	1.115*** (23.25)	1.109*** (36.74)	1.039*** (38.67)	1.110*** (22.81)	0.962*** (30.84)	1.156*** (33.21)	1.157*** (33.27)	1.167*** (42.35)	1.091*** (35.13)	1.118*** (25.91)	0.988*** (35.88)
GDP_pc, lag 2	-0.096*** (-3.80)	-0.098*** (-3.88)	-0.147*** (-4.47)	-0.111*** (-2.13)	-0.097*** (-3.75)	-0.063*** (-2.14)	-0.121*** (-4.70)	-0.123*** (-4.78)	-0.185*** (-5.70)	-0.141*** (-2.71)	-0.114*** (-4.39)	-0.088*** (-2.97)
GDP_pc, lag 3	-0.019 (-0.51)	-0.019 (-0.50)	0.017 (0.69)	0.078 (1.49)	-0.018 (-0.50)	0.022 (0.75)	-0.008 (-0.22)	-0.007 (-0.19)	0.028 (1.10)	0.087* (1.70)	-0.007 (-0.20)	0.032 (1.11)
GDP_pc, lag 4	-0.072*** (-5.25)	-0.071*** (-4.95)	-0.058*** (-2.90)	-0.085*** (-3.41)	-0.072*** (-5.27)	-0.036*** (-2.11)	-0.059*** (-3.91)	-0.061*** (-3.84)	-0.051*** (-2.45)	-0.073*** (-2.86)	-0.073*** (-4.86)	-0.024 (-1.42)
persistence of the *GDP_pc* process	0.925*** (62.79)	0.927*** (62.95)	0.921*** (11.19)	0.922*** (96.16)	0.921*** (56.79)	0.884*** (55.03)	0.966*** (199.65)	0.967*** (197.95)	0.958*** (183.84)	0.964*** (116.92)	0.921*** (90.54)	0.908*** (91.97)
AR2 test *p*-value	0.074	0.126	0.935	0.566	0.081	0.056	0.100	0.141	0.867	0.417	0.114	0.203
# of observations	6,418	6,314	5,288	2,839	6,418	5,785	6,418	6,314	5,288	2,839	6,418	5,785
# of countries	153	153	148	99	153	144	153	153	148	99	153	144

Notes: Values of the *t*-statistic in brackets. *** Significant at a 5% level. * Significant at a 10% level. Source: Authors' calculations.

4.2. For which groups of countries is constitutional compliance a significant determinant of GDP per capita?

In the next step we extend our analysis and study the relationship between constitutional compliance and GDP per capita in groups of countries classified by income levels and regime types. We adopt the income-level classification from the World Bank (2021), i.e. countries are classified as high income, upper-middle income, lower-middle income, and low income, while the regime classification – democracy / autocracy – is drawn from Bjørnskov and Rode (2020).

Table 3 displays the most interesting results obtained from these estimations (for the sake of clarity we focus on the Arellano-Bond estimations only). Firstly, with regard to income groups, we observe a positive and significant relationship between constitutional compliance and GDP per capita for the extremes, i.e. low-income and high-income economies (for the latter only in the more reliable specification with constitution-system fixed effects). Secondly, with regime types overlaid with the income-group classification, the effect of constitutional compliance on GDP per capita is found to be significant and positive only in low- and lower-middle-income democracies, as well as high-income autocracies (for the latter, as well as for low-income democracies, only in the more reliable specification with constitution-system fixed effects, what might be connected with relatively small sample sizes included in these estimations).

Our results, therefore, provide a tentative confirmation that low- and lower-middle-income countries can benefit economically from increased government credibility and legitimacy, when these governments act in compliance with their constitutions. However, this is the case only for democracies. For autocracies, on the contrary, significant negative effects of de jure-de facto gaps are expected where income levels are high. Before we further interpret these findings, we supplement them with the analysis of constitutional compliance in different areas of law.

Table 3. Estimation results for country groups. Dependent variable: *GDP_pc*

	INCOME GROUPS							
	low income	lower-middle income	upper-middle income	high income	low income	lower-middle income	upper-middle income	high income
	I	II	III	IV	V	VI	VII	VIII
	country & year FE				country & constitution-systems FE			
	FULL SAMPLE							
constitutional_compliance, lag 1	0.006*** (2.45)	0.002 (1.22)	-0.001 (-0.53)	0.001 (0.26)	0.012*** (1.98)	0.001 (0.42)	0.003 (1.14)	0.003*** (1.74)
GDP_pc, lag 1	1.026*** (26.07)	1.037*** (29.48)	1.139*** (19.78)	1.161*** (36.03)	1.073*** (24.37)	1.070*** (30.22)	1.176*** (19.37)	1.192*** (39.37)
GDP_pc, lag 2	-0.016 (-0.32)	-0.044 (-0.69)	-0.144*** (-3.40)	-0.180*** (-5.17)	-0.032 (-0.52)	-0.055 (-0.88)	-0.184*** (-4.36)	-0.221*** (-7.21)
GDP_pc, lag 3	0.020 (0.25)	0.032 (0.63)	-0.026 (-0.72)	0.008 (0.24)	0.002 (0.03)	0.037 (0.67)	0.019 (0.41)	0.014 (0.38)
GDP_pc, lag 4	-0.137*** (-3.31)	-0.087*** (-2.91)	-0.03 (-1.60)	-0.038 (-1.49)	-0.139*** (-3.64)	-0.080*** (-2.57)	-0.044* (-1.71)	-0.006 (-0.24)
persistence of the *GDP_pc* process	0.892*** (41.79)	0.937*** (71.66)	0.938*** (97.69)	0.951*** (84.21)	0.904*** (35.98)	0.971*** (97.68)	0.966*** (140.49)	0.978*** (218.04)
AR2 test *p*-value	0.921	0.124	0.242	0.897	0.354	0.1	0.631	0.531
# of observations	874	1,887	1,546	2,056	874	1,887	1,546	2,056
# of countries	22	45	39	46	22	45	39	46
	DEMOCRACIES							
constitutional_compliance, lag 1	0.0002 (0.04)	0.011*** (2.87)	-0.0004 (-0.16)	-0.003 (-1.52)	0.011*** (2.44)	0.009* (1.90)	0.001 (0.22)	0.0004 (0.21)
GDP_pc, lag 1	0.838*** (12.13)	1.017*** (18.45)	1.180*** (32.99)	1.211*** (28.49)	0.931*** (8.03)	1.165*** (16.49)	1.217*** (34.06)	1.248*** (33.81)
GDP_pc, lag 2	0.0004 (0.01)	-0.006 (-0.09)	-0.221*** (-2.79)	-0.188*** (-2.91)	-0.029 (-0.32)	-0.086 (-1.01)	-0.226*** (-3.25)	-0.258*** (-4.96)
GDP_pc, lag 3	0.013 (0.15)	-0.014 (-0.16)	-0.002 (-0.03)	-0.015 (-0.32)	-0.016 (-0.20)	-0.019 (-0.20)	0.001 (0.02)	0.003 (0.08)
GDP_pc, lag 4	-0.069 (-0.99)	-0.093 (-1.61)	-0.008 (-0.27)	-0.046 (-1.44)	-0.037 (-0.53)	-0.084 (-1.21)	-0.019 (-0.70)	-0.009 (-0.30)
persistence of the *GDP_pc* process	0.783*** (15.7)	0.903*** (34.57)	0.947*** (106.65)	0.959*** (101.64)	0.846*** (13.83)	0.975*** (56.11)	0.973*** (259.93)	0.983*** (258.80)
AR2 test *p*-value	0.466	0.236	0.667	0.048	0.663	0.226	0.804	0.034
# of observations	167	612	828	1,718	167	612	828	1,718
# of countries	14	28	27	41	14	28	27	41
	AUTOCRACIES							
constitutional_compliance, lag 1	0.007 (1.62)	0.001 (0.23)	-0.001 (-0.20)	0.0002 (0.02)	0.010 (1.25)	-0.004 (-1.34)	0.005 (0.93)	0.018*** (3.13)
GDP_pc, lag 1	0.983*** (20.95)	1.002*** (24.17)	1.084*** (14.26)	1.022*** (18.72)	1.053*** (19.20)	1.010*** (25.94)	1.146*** (14.67)	1.069*** (19.95)
GDP_pc, lag 2	0.047 (0.97)	-0.036 (-0.49)	-0.101* (-1.87)	-0.135*** (-2.71)	0.003 (0.05)	-0.035 (-0.46)	-0.171*** (-3.53)	-0.177*** (-4.56)
GDP_pc, lag 3	0.015 (0.18)	0.051 (1.01)	-0.037 (-1.00)	0.020 (0.55)	-0.005 (-0.07)	0.062 (1.19)	0.035 (0.67)	0.023 (0.41)
GDP_pc, lag 4	-0.175*** (-4.11)	-0.084*** (-2.00)	-0.023 (-0.98)	-0.041 (-1.23)	-0.155*** (-3.69)	-0.077*** (-1.79)	-0.059* (-1.70)	-0.003 (-0.11)
persistence of the *GDP_pc* process	0.871*** (29.17)	0.933*** (53.10)	0.922*** (66.29)	0.865*** (20.94)	0.895*** (27.91)	0.959*** (73.69)	0.951*** (80.71)	0.911*** (25.44)
AR2 test *p*-value	0.81	0.711	0.109	0.057	0.42	0.634	0.838	0.766
# of observations	685	1,269	712	325	685	1,269	712	325
# of countries	22	43	31	17	22	43	31	17

Notes: Values of the *t*-statistic in brackets. *** Significant at a 5% level. * Significant at a 10% level.

Source: Authors' calculations.

4.3. Constitutional compliance in which areas is a significant determinant of GDP per capita?

As mentioned earlier, Gutmann et al. (2023a) measure constitutional compliance within four areas: (1) property rights and the rule of law; (2) political rights; (3) civil rights; and (4) basic human rights. In this part of the study we ask about the impact of constitutional compliance in these areas, viewed separately, on economic performance. Table 4 presents the obtained results (for the sake of clarity for the Arellano-Bond estimations only). The outcomes suggest that countries with higher levels of constitutional compliance in the area of property rights protection and the rule of law experience higher levels of GDP per capita. The effect is also partially observed for constitutional compliance in the area of civil rights (however, only for the specification with constitution-system fixed effects). For the remaining components we do not find convincing evidence of significant influence on GDP per capita.

Table 4. Estimation results for areas of constitutional compliance.
Dependent variable: *GDP_pc*

	AREAS OF CONSTITUTIONAL COMPLIANCE							
	property rights	political rights	civil rights	basic rights	property rights	political rights	civil rights	basic rights
	I	II	III	IV	V	VI	VII	VIII
	country & year FE				country & constitution-system FE			
constitutional_compliance, lag 1	0.018*** (2.03)	0.003 (0.55)	0.004 (0.73)	0.001 (0.48)	0.021*** (2.44)	0.008 (1.34)	0.012*** (2.14)	0.003 (1.44)
GDP_pc, lag 1	1.125*** (21.95)	1.120*** (25.69)	1.109*** (23.77)	1.103*** (31.61)	1.160*** (31.64)	1.158*** (33.51)	1.149*** (33.59)	1.149*** (35.15)
GDP_pc, lag 2	-0.101*** (-3.85)	-0.100*** (-3.88)	-0.094*** (-3.68)	-0.094*** (-3.97)	-0.123*** (-4.74)	-0.122*** (-4.56)	-0.120*** (-4.62)	-0.119*** (-4.63)
GDP_pc, lag 3	-0.024 (-0.62)	-0.018 (-0.47)	-0.017 (-0.47)	-0.014 (-0.40)	-0.013 (-0.35)	-0.009 (-0.25)	-0.005 (-0.15)	-0.005 (-0.16)
GDP_pc, lag 4	-0.068*** (-4.93)	-0.071*** (-5.09)	-0.071*** (-5.16)	-0.068*** (-4.99)	-0.056*** (-3.70)	-0.059*** (-3.82)	-0.058*** (-3.82)	-0.058*** (-3.83)
persistence of the *GDP_pc* process	0.931*** (60.20)	0.931*** (66.42)	0.926*** (64.12)	0.925*** (90.19)	0.966*** (205.78)	0.967*** (191.68)	0.964*** (192.72)	0.965*** (183.59)
AR2 test *p*-value	0.083	0.077	0.084	0.108	0.094	0.086	0.127	0.099
# of observations	6,418	6,418	6,418	6,418	6,418	6,418	6,418	6,418
# of countries	153	153	153	153	153	153	153	153

Notes: Values of the *t*-statistic in brackets. *** Significant at a 5% level.
Source: Authors' calculations.

Table 5 supplements the above observations by demonstrating that the effects of constitutional compliance in the area of property rights and the rule of law vary across groups of countries classified by income levels and regime types. Significant positive effects are identified in upper-middle-income democracies and in low-income autocracies. On the other hand, the effect for upper-middle-income autocracies is negative.

Table 5. Estimation results for constitutional compliance in the area of property rights and the rule of law by income/regime type groups. Dependent variable: *GDP_pc*

	INCOME GROUPS							
	low income	lower-middle income	upper-middle income	high income	low income	lower-middle income	upper-middle income	high income
	I	II	III	IV	V	VI	VII	VIII
	country & year FE				country & constitution-systems FE			
	DEMOCRACIES							
constitutional_compliance, lag 1	-0.016 (-0.71)	0.015 (1.42)	0.014*** (2.02)	0.0001 (0.02)	0.017 (0.82)	0.013 (1.11)	0.035*** (3.03)	-0.002 (-0.25)
GDP_pc, lag 1	0.835*** (11.95)	1.026*** (17.92)	1.176*** (32.20)	1.213*** (28.34)	0.930*** (8.60)	1.168*** (16.12)	1.204*** (33.21)	1.248*** (33.75)
GDP_pc, lag 2	0.004 (0.05)	-0.007 (-0.09)	-0.221*** (-2.74)	-0.189*** (-2.91)	-0.038 (-0.41)	-0.085 (-0.99)	-0.229*** (-3.23)	-0.258*** (-4.97)
GDP_pc, lag 3	0.017 (0.19)	-0.018 (-0.22)	-0.001 (-0.01)	-0.017 (-0.35)	-0.01 (-0.12)	-0.021 (-0.23)	0.007 (0.10)	0.003 (0.08)
GDP_pc, lag 4	-0.084 (-1.11)	-0.097* (-1.66)	-0.007 (-0.22)	-0.047 (-1.45)	-0.027 (-0.33)	-0.087 (-1.25)	-0.014 (-0.43)	-0.009 (-0.28)
persistence of the *GDP_pc* process	0.772*** (16.72)	0.903*** (34.55)	0.946*** (122.20)	0.959*** (103.57)	0.854*** (13.87)	0.974*** (56.28)	0.968*** (262.45)	0.984*** (270.43)
AR2 test *p*-value	0.366	0.219	0.683	0.049	0.985	0.22	0.868	0.033
# of observations	167	612	828	1,718	167	612	828	1,718
# of countries	14	28	27	41	14	28	27	41
	AUTOCRACIES							
constitutional_compliance, lag 1	0.055*** (3.06)	0.0067 (0.39)	-0.081*** (-4.57)	-0.036 (-1.06)	0.098*** (3.61)	0.001 (0.05)	-0.061*** (-2.88)	-0.027 (-0.54)
GDP_pc, lag 1	0.975*** (19.98)	1.002*** (24.06)	1.047*** (14.50)	1.012*** (13.79)	1.039*** (20.24)	1.011*** (25.94)	1.138*** (14.94)	1.096*** (19.74)
GDP_pc, lag 2	0.052 (1.06)	-0.036 (-0.48)	-0.091* (-1.94)	-0.118*** (-2.04)	0.001 (0.03)	-0.035 (-0.47)	-0.169*** (-3.67)	-0.182*** (-4.07)
GDP_pc, lag 3	0.019 (0.21)	0.050 (0.99)	-0.032 (-0.91)	0.003 (0.10)	-0.0008 (-0.01)	0.061 (1.17)	0.039 (0.74)	-0.006 (-0.14)
GDP_pc, lag 4	-0.181*** (-4.16)	-0.083*** (-2.02)	-0.019 (-0.79)	-0.041 (-1.45)	-0.152*** (-3.60)	-0.076* (-1.78)	-0.054 (-1.55)	0.013 (0.52)
persistence of the *GDP_pc* process	0.865*** (28.59)	0.932*** (53.07)	0.904*** (78.13)	0.856*** (19.00)	0.888*** (29.00)	0.961*** (70.18)	0.952*** (88.84)	0.921*** (24.61)
AR2 test *p*-value	0.771	0.683	0.12	0.141	0.379	0.64	0.86	0.859
# of observations	685	1,269	712	293	685	1,269	712	293
# of countries	22	43	31	17	12	43	31	17

Notes: Values of the *t*-statistic in brackets. *** Significant at a 5% level. * Significant at a 10% level.
Source: Authors' calculations.

Property rights and the rule of law are components of constitutional frameworks which are at the foremost connected with constitutions' role for the economy as a mechanism enhancing credible commitment. Not surprisingly, therefore, we confirm a significant negative effect for GDP per capita levels of de jure-de facto gaps in this area, which undermine the functioning of the commitment mechanism. In particular, this is the case in upper-middle-income democracies, where successful functioning of the economy can be expected to hinge strongly upon governments' credibility (contrarily to autocracies at similar income levels, where other mechanisms, not governments' credibility, spur economic development), as well as in low-

income autocracies, where any degree of government's credibility presumably facilitates the functioning of the economy, given its generally repressed character). On the other hand, with regard to political and civil rights, which are more closely connected with legitimacy aspects of the constitution, we do not find similar conclusions (except for a weak result for civil rights, mentioned above).

4.4. Through which mechanisms does constitutional compliance influence GDP per capita?

Finally, we explore the potential mechanisms whereby constitutional compliance affects GDP per capita. Our expectations, spelled out in section 3, suggest to consider the following channels: investment (measured as share in GDP in logs; *investment_gdp*); foreign direct investment (*fdi*); total factor productivity (in logs; *tfp*); trade (share in GDP in logs; *trade_gdp*); tax revenue (share in GDP in logs; *tax_revenue_gdp*); government expenditure (share in GDP in logs; *gov_expenditure_gdp*); and social unrest (*social_unrest*). To test these expectations, we use an analogous methodology to the one in the baseline specification and estimate a set of models, where each takes the following form:

$$X_{it} = \beta constitutional\ compliance_{it} + \sum_{j=1}^{\rho} X_{it} + \alpha_i + \delta_t + \varepsilon_{it} \quad (2)$$

for y_{it} being one of subsequent potential channels listed above.

Table 6 presents the estimates for the above specification using dynamic panel GMM approach with the Arellano-Bond estimators. The obtained results clearly suggest one particularly strong channel how constitutional compliance impacts GDP per capita, namely foreign direct investment. We also partially confirm the functioning of three other mechanisms – through tax revenue, government expenditure and social unrest – however significant effects for these channels are only found in regressions with country and year fixed effects (i.e. the less reliable ones that do not control for changing de jure content of constitutions).

The results presented in the previous subsection indicate particular significance of constitutional compliance in the area of property rights protection and the rule of law for explaining GDP per capita levels. In order to understand through which mechanisms this effect operates, we repeat the analysis presented in Table 6 exclusively for this component of the constitutional compliance indicator. The obtained results suggest that constitutional compliance in the area of property rights protection and the rule of law operates not only through the foreign direct investment channel, but also via general investments and total factor productivity (see

Table 7). Such findings are fully in line with the presuppositions, given the economic function of property rights protection and the rule of law as crucial components of a favorable framework for investors of any kind – in general, by foreign actors and in innovative sectors, affecting productivity. We do not consider the effect of constitutional compliance on mechanisms defined above for different groups of countries, which we previously identified as sensitive in terms of their economic performance to the level of constitutional compliance, as the sample sizes in such analyses would be considerably small, putting in question the reliability of the obtained conclusions.

Table 6. Estimation results for mechanisms

	MECHANISMS (*X*)						
	investment_gdp	*fdi*	*tfp*	*trade_gdp*	*tax_revenue_ gdp*	*gov_ expenditure_gdp*	*social unrest*
	I	II	III	IV	V	VI	VII
	country & year FE						
constitutional_compliance, lag 1	0.001 (0.12)	0.364*** (1.96)	-0.072 (-0.69)	-0.001 (-0.27)	0.013* (1.73)	0.008*** (2.09)	-0.017* (-1.78)
X, lag 1	0.727*** (19.17)	0.541*** (3.46)	1.126*** (24.81)	0.733*** (10.75)	0.583*** (10.16)	0.871*** (22.17)	0.193*** (9.15)
X, lag 2	0.001 (0.04)	0.073 (0.56)	-0.157*** (-3.28)	0.056* (1.75)	0.043 (1.11)	0.046 (0.89)	0.062*** (3.16)
X, lag 3	0.035* (1.66)	0.038 (0.38)	0.003 (0.18)	0.057*** (1.99)	-0.028 (-0.40)	0.018 (0.66)	0.048*** (3.46)
X, lag 4	0.034*** (2.17)	-0.094 (-1.09)	-0.022 (-1.20)	-0.016 (-1.04)	0.0008 (0.02)	-0.077*** (-3.77)	0.014 (1.12)
persistence of the *X* process	0.799*** (34.57)	0.557*** (22.43)	0.951*** (102.16)	0.830*** (27.75)	0.599*** (8.15)	0.859*** (84.06)	0.317*** (9.99)
AR2 test *p*-value	0.165	0.159	0.342	0.816	0.022	0.106	0.551
# of observations	6,411	6,418	4,598	6,418	3,981	6,418	6,418
# of countries	153	153	110	153	128	153	153
	country & constitution-systems FE						
constitutional_compliance, lag 1	0.001 (0.21)	0.569*** (2.10)	-0.046 (-0.39)	0.008 (1.12)	0.009 (1.22)	0.007 (1.63)	-0.001 (-0.16)
X, lag 1	0.747*** (24.03)	0.585*** (3.58)	1.157*** (29.36)	0.687*** (10.87)	0.625*** (15.03)	0.866*** (22.04)	0.226*** (12.32)
X, lag 2	-0.023 (-0.62)	0.091 (0.59)	-0.190*** (-4.22)	0.052 (1.54)	0.050 (1.53)	0.039 (0.75)	0.091*** (5.68)
X, lag 3	0.035 (1.49)	0.005 (0.06)	0.004 (0.19)	0.043*** (2.33)	-0.038 (-0.64)	0.019 (0.69)	0.060*** (4.05)
X, lag 4	0.027* (1.79)	-0.089 (-1.02)	-0.021 (-1.28)	-0.010 (-0.76)	0.035 (1.24)	-0.078*** (-4.05)	0.017 (1.41)
persistence of the *X* process	0.786*** (50.40)	0.593*** (25.51)	0.950*** (136.54)	0.772*** (25.47)	0.672*** (12.33)	0.846*** (70.12)	0.395*** (12.55)
AR2 test *p*-value	0.599	0.483	0.445	0.863	0.067	0.085	0.569
# of observations	6,411	6,418	4,598	6,418	3,981	6,418	6,418
# of countries	153	153	110	153	128	153	153

Notes: Values of the *t*-statistic in brackets. *** Significant at a 5% level. * Significant at a 10% level.
Source: Authors' calculations.

Table 7. Estimation results for mechanisms for constitutional compliance in the area of property rights and the rule of law

	MECHANISMS (*X*)						
	investment_gdp	*fdi*	*tfp*	*trade_gdp*	*tax_revenue_ gdp*	*gov_expenditure_ gdp*	*social_unrest*
	I	II	III	IV	V	VI	VII
	country & year FE						
constitutional_compliance, lag 1	0.038* (1.69)	1.933* (1.76)	0.794*** (1.97)	0.021 (0.86)	-0.004 (-0.15)	0.016 (1.44)	-0.077* (-1.90)
X, lag 1	0.729*** (19.49)	0.552*** (3.01)	1.131*** (24.72)	0.742*** (11.31)	0.594*** (10.92)	0.873*** (22.12)	0.210*** (10.34)
X, lag 2	0.003 (0.10)	0.053 (0.42)	-0.157*** (-3.20)	0.055* (1.80)	0.058 (1.47)	0.046 (0.89)	0.045*** (2.44)
X, lag 3	0.036* (1.66)	0.032 (0.33)	-0.0002 (-0.01)	0.061*** (2.06)	-0.034 (-0.48)	0.018 (0.65)	0.041*** (2.97)
X, lag 4	0.038*** (2.39)	-0.108 (-1.09)	-0.018 (-0.97)	-0.015 (-0.94)	0.008 (0.21)	-0.074*** (-3.63)	0.004 (0.41)
persistence of the *X* process	0.807*** (45.76)	0.530*** (10.12)	0.954*** (121.85)	0.843*** (32.35)	0.627*** (8.97)	0.863*** (85.38)	0.302*** (10.33)
AR2 test *p*-value	0.148	0.422	0.345	0.717	0.001	0.126	0.048
# of observations	6,379	6,386	4,570	6,386	3,950	6,386	6,386
# of countries	153	153	110	153	127	153	153
	country & constitution-systems FE						
constitutional compliance, lag 1	0.042*** (2.40)	2.756* (1.77)	1.041*** (1.99)	0.026 (1.10)	0.022 (0.68)	0.023 (1.60)	0.00004 (0.00)
X, lag 1	0.739*** (23.34)	0.602*** (3.24)	1.152*** (28.59)	0.685*** (10.85)	0.629*** (15.61)	0.869*** (21.64)	0.222*** (12.29)
X, lag 2	-0.024 (-0.62)	0.077 (0.48)	-0.189*** (-4.19)	0.053 (1.59)	0.064*** (1.96)	0.038 (0.75)	0.088*** (5.53)
X, lag 3	0.033 (1.40)	-0.001 (-0.02)	0.003 (0.16)	0.043*** (2.30)	-0.047 (-0.79)	0.017 (0.64)	0.057*** (3.83)
X, lag 4	0.027* (1.81)	-0.098 (-1.01)	-0.021 (-1.22)	-0.008 (-0.62)	0.044 (1.58)	-0.077*** (-3.95)	0.012 (0.99)
persistence of the *X* process	0.776*** (48.79)	0.580*** (14.18)	0.945*** (123.03)	0.774*** (26.40)	0.691*** (13.37)	0.849*** (70.68)	0.381*** (12.26)
AR2 test *p*-value	0.543	0.963	0.412	0.878	0.013	0.095	0.558
# of observations	6,379	6,386	4,570	6,386	3,950	6,386	6,386
# of countries	153	153	110	153	127	153	153

Notes: Values of the *t*-statistic in brackets. *** Significant at a 5% level. * Significant at a 10% level.
Source: Authors' calculations.

Conclusions

In this paper we take a first systematic approach to study the economic effects of constitutional non-compliance of government actors and confirm the expected adverse consequences of this relatively common phenomenon. Specifically, in a series of empirical tests employing newly available data on compliance with constitutions from Gutmann et al. (2023a) and methodological approaches inspired by Acemoglu et al. (2019), we provide evidence that higher levels of constitutional compliance (i.e. lower de jure-de facto gaps) contribute, *ceteris paribus*, to better economic performance of countries, reflected in higher levels of GDP per capita. In addition, we formulate a tentative conclusion that low- and lower-middle-income economies

benefit, in particular, from increased government credibility and legitimacy achieved when governments act in compliance with their countries' constitutions. However, this holds only for democratic states, while in autocracies, on the contrary, significant negative effects of de jure-de facto gaps are expected where income levels are high. Further, we also find that protection of property rights and the rule of law is the one area where constitutional compliance is particularly crucial for economic performance, as well as that the mechanism behind the significance of (non-)compliance with constitutions for economic outcomes primarily involves investment-related channels. Non-compliance of government actors with their country's constitution reduces their credibility and, in turn, the predictability of the economic environment, hindering foreign actors' propensity to invest in these countries. On top of that, if property rights and the rule of law are not complied with, incentives for general investment, as well as investment in innovative ventures, at the national level, are also reduced, affecting GDP per capita negatively both via the investment and the productivity channels. We find no consistent evidence of other mechanisms at play behind the adverse role of (non-)compliance with constitutions for economic outcomes.

Understanding the causes and consequences of de jure-de facto gaps concerning constitutions is of significant policy relevance, as it helps to design better legal institutions and creates awareness of the limits of what constitutional reform can achieve. The results of our study suggest that from the point of view of economic performance, countries should exercise particular caution not to aim to include in their constitutions extensive de jure guarantees in the area of property rights and the rule of law, if it is not likely that constitutional practice will follow, as it is not only (de facto) functioning of these constitutional rules that matters for economic outcomes but also the potential existence of de jure-de facto gaps, which can undermine the effectiveness of the constitutional credible commitment mechanism. Such prudence is not as crucial in so far as other areas of constitutional regulation are concerned, such as political, civil, and basic human rights, violation of which does not affect economic outcomes directly, nor via the main channels studied in this paper. This, obviously, does not rule out other possible consequences of constitutional (non-)compliance, which have not been studied in our first attempt at analyzing this problem, such as e.g. deterioration of trust in government or other political effects.

The findings of this paper open the grounds for a highly stimulating research agenda for scholars at the nexus of constitutional political economy, new institutional economics and

development economics, which promises to bring significant contributions to understanding the role of constitutions for the economy and society.

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Appendix

Table A1. List of variables and data sources

Variable name	Description	Source
constitutional_compliance *cc_property_rights* *cc_political_rights* *cc_civil_rights* *cc_basic_rights*	An indicator of government's compliance with the constitution (de jure-de facto gap) aggregated using factor analysis for 14 constitutional rules grouped in four areas, as well as area indicators for: (1) property rights and the rule of law; (2) political rights; (3) civil rights; and (4) basic human rights [in logs]. The original variable from the source dataset (Gutmann et al. 2023a) is defined on a [-2, 2] interval. We monotonically transformed this variable by first increasing all values by 2, and then applying the natural logarithm.	Gutmann et al. (2023a)
fdi_gdp	Foreign direct investment, net inflows (% of GDP)	World Bank (2022)
gdp_pc	Expenditure-side real GDP at chained PPPs (in mil. 2017US$) / Population (in millions) [in logs]	Feenstra et al. (2015, updt. 2021)
gov_expenditure_gdp	Share of government consumption at current PPPs in the output-side real GDP at current PPPs (in mil. 2017US$) [in logs]	Feenstra et al. (2015, updt. 2021)
investment_gdp	Share of gross capital formation at current PPPs in the output-side real GDP at current PPPs (in mil. 2017US$) [in logs]	Feenstra et al. (2015, updt. 2021)
leader	A dummy variable representing the political leader in a given year	Bell et al. (2021)
net_fin_flows	Net financial flows, others (NFL, current US$)	World Bank (2022)
population_0_15	Population for ages 0-14 (% of total population)	World Bank (2022)
population_64_+	Population for ages 65 and above (% of total population)	World Bank (2022)
social_unrest	The occurrence of riot or revolution in a given year	Banks and Wilson (2022)
soviets_post_1989 *soviets_post_1990* *soviets_post_1991* *soviets_post_1992*	Interaction between a dummy for Soviet and Soviet-satellite countries and dummies for the years 1989, 1990, 1991, and post-1992	Acemoglu et al. (2019)
tax_revenue_gdp	Tax revenue (% of GDP) [in logs]	World Bank (2022)
tfp	Total factor productivity at constant national prices (2017=1) [in logs]	Feenstra et al. (2015, updt. 2021)
trade_gdp	Share of merchandise exports at current PPPs + share of merchandise imports at current PPPs [in logs]	Feenstra et al. (2015, updt. 2021)

Source: Authors' table.

Table A2. Descriptive statistics

Variable	No. of observations	Mean	Std. Dev.	Min	Max
constitutional_compliance	7,822	0.148	1.004	-5.412	1.383
cc_basic_rights	7,822	0.475	1.026	-4.531	1.277
cc_civil_rights	7,822	0.537	0.718	-1.112	1.223
cc_political_rights	7,671	0.607	0.574	-0.522	1.338
cc_property_rights	7,790	0.576	0.551	-0.528	1.389
fdi_gdp	7,695	3.541	12.104	-57.532	449.081
gdp_pc	8,784	8.726	1.195	5.499	12.084
gov_expenditure_gdp	8,784	-1.765	0.542	-5.257	0.747
investment_gdp	8,781	-1.715	0.611	-6.952	1.152
net_fin_flows	4,598	16.064	1.881	6.649	22.331
population_0_15	8,784	34.801	10.512	11.773	52.388
population_64_+	8,784	6.381	4.530	0.845	29.787
social_unrest	9,707	0.299	.457	0	1
soviets_post_1989	8,784	0.061	0.240	0	1
soviets_post_1990	8,784	0.059	0.237	0	1
soviets_post_1991	8,784	0.057	0.233	0	1
soviets_post_1992	8,784	0.056	0.230	0	1
tax_revenue_gdp	6,047	-1.886	0.622	-6.259	-0.351
tfp	5,737	-6.723	28.987	-160.811	209.445
trade_gdp	8,784	-1.129	1.052	-13.555	2.931

Source: Authors' calculations.