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Factor income taxation and the governance dividend

Tania Masi,¹ Antonio Savoia,² and Kunal Sen³

March 2026

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Abstract: An influential literature suggests that the rise of taxation should come with a ‘governance dividend’: the quality of government should improve, because the taxpaying citizenry will subject the ruler to increased scrutiny. While this fits the history of nowadays advanced economies, it is less clear whether a governance dividend can materialize in less developed economies and, above all, which taxes are more likely to produce it. This paper contributes to address this lacuna by investigating whether factor income taxation may affect governance quality in low- and middle-income countries, using panel data for 102 countries from 1965 to 2018, new measures of effective tax rates on capital and labour, and four key governance dimensions: electoral democracy, vertical accountability, egalitarian democracy, and rule of law. Our baseline estimates suggest a generalized positive association between capital income taxation and governance. By contrast, the association between labour income taxation and governance appears concentrated on egalitarian democracy. To address endogeneity, we implement an instrumental variables strategy based on shift-share instruments. Instrumental variable (IV) estimates suggest that capital taxation has a positive causal effect on the rule of law, with no clear effect on other dimensions of governance. Instead, labour income taxation exerts a positive effect on egalitarian democracy. These findings are consistent with the view that the nature of the fiscal contract may be different for capital and labour owners, and they suggest that designing tax systems may also lead countries to different paths of political and institutional development, depending on which factor of production one chooses to tax.

Keywords: factor income taxation, governance dividend, institutions, economic development

JEL classification: P5, N4, D7, O2, P4, F6

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1 Introduction

Taxation plays a central role in building states, sustaining their power, and shaping their ties to society. And developing effective tax systems is also an important part of what governments of less developed economies try to do, since it is essential for financing development goals, as recognized in Sustainable Development Goal 17. But does it also lead to significant governance improvements in these countries?

A body of influential research indicates that taxation may produce a "governance dividend," because the taxpaying citizenry will react to taxation by subjecting the ruler to increased scrutiny. The hypothesis that taxation may improve governance quality hinges on the idea of a fiscal social contract based on a tax bargain between the citizens and the state, involving an exchange of tax revenues for services. A substantial part of what we know about the governance effects of taxation comes from research that has traditionally focused on advanced economies. But this is an area of research that is increasingly focussing on less developed economies (e.g., Bräutigam et al. 2008). In such countries, where the extent of domestic revenues mobilization is typically lower than advanced economies and where the dependence on external assistance and natural resource revenues may undermine the fiscal relationship between governments and citizens, it is still not clear whether and how the alleged governance benefits of taxation can materialize.¹

This paper revisits the governance dividend hypothesis and contributes to the literature by systematically analysing the role of factor income taxation in low- and middle-income countries. The relationship between taxation and governance may depend not only on how much revenue states collect, but also on what and who is taxed and on how taxes are administered. Here, we argue that improvements in governance quality can vary depending on which factor of production, labour or capital, is taxed. The governance effects of taxation are expected to be stronger when taxes are salient to payers. Taxes on income are typically more 'visible' than other forms of taxation (such as trade or indirect taxes) and therefore more likely to heighten public scrutiny of government actions, foster political engagement on the part of the citizenry, and enhance the quality of government.² However, capital and labour income taxation may stimulate improvement in different governance dimensions because capital and labour differ in their degrees of mobility and because owners of labour and capital may have different interests and hence different expectations with respect to the fiscal social contract. Empirically, focussing on capital and income taxation is important because changes in factor taxation have been an essential part of the expansion of tax systems and tax base, which occurred as a result of structural transformation and the ensuing changes in employment. For example, Jensen (2022) documents that the expansion of the income tax base, in the course of economic development, is driven by the transition from self-employment to employee-employment. And the enforcement of taxes on employees is vastly superior to enforcement on self-employed, due

¹ See Martin and Prasad (2014) for a review of this research area. See Moore (2008), Pritchard (2015) and Moore, Prichard, and Fjeldstad (2018, Ch. 8), for discussions of the key ideas and their relevance for developing economies, and on Africa in particular.

² See Dom, Morrissey, and Tagem (2023, pp. 4-5), for a discussion of the perceived burden of taxation; Moore (2008, pp. 37-39), for a discussion of tax bargaining; and Blackmore and Fjeldstad (2025), for a discussion of the conditions affecting a tax bargain between citizens and the state.

to the existence of third-party agents and information trails, and bears lower administrative and compliance costs.

Using panel data for 102 countries between 1965 and 2018, we examine how effective tax rates on capital and labour may affect four key governance outcomes: *electoral democracy*, *vertical accountability*, *egalitarian democracy*, and *rule of law*. Our baseline estimates suggest a generalized positive association between capital taxation and governance. By contrast, the association between labour taxation and governance appears concentrated on *egalitarian democracy*: higher effective tax rates on labour are positively correlated only with this indicator. To address endogeneity concerns, we implement an instrumental variables strategy with two shift–share instruments: a) the interaction of OECD countries’ capital tax rates with domestic capital intensity, for capital taxation; and b) the interaction of neighbouring countries’ labour tax rates with domestic labour intensity, for labour taxation. The IV results suggest that capital taxation has a positive causal effect on the *rule of law*, with no clear effect on more participatory dimensions of governance. Conversely, labour taxation exerts a positive effect on *egalitarian democracy*. This is consistent with the view that the fiscal contract differs across capital and labour owners and may be important when designing tax reforms, as the long-run effects on governance quality may be quite different. The rest of the paper is structured as follows: Section 2 reviews the literature; Section 3 describes the empirical strategy and data; Section 4 presents the results; Section 5 concludes.

2 Taxation and governance quality in less developed economies

Does taxation improve governance? The fiscal sociology literature, which derives its empirical foundation from European history, suggests that the rise of fiscal states should come with a ‘governance dividend’: the quality of government should improve, as a result greater taxation. The basic idea underlying the governance dividend hypothesis is that citizens trade taxes for better government. A ruler that demands more tax revenues will get them in exchange for providing certain services to groups of taxpaying citizens. This requires the emergence of institutions representing the interest of different groups of citizens so that taxes can be bargained, and taxpayers have some control on the use of revenues.³ The governance dividend works through at least three channels: (i) Political accountability and representation: when governments rely on citizens for revenue rather than external rents (like oil or aid), citizens who feel the direct cost of taxation are more likely to mobilize and demand public service improvements and political representation (e.g., Pritchard 2015); (ii) Information and Legibility: the process of tax collection forces the state to map the economy and, by documenting assets and transactions, the state builds the data infrastructure necessary for evidence-based policymaking and more effective regulation of the private sector (Moore 2015); (iii) Institutional Strengthening: building a functional revenue authority requires advanced skills in auditing, data management, and law enforcement. The need to collect taxes efficiently forces states to strengthen

³ See North (1990, Ch. 6, p. 49). Ross (2004) provides theory and evidence (partially) supporting the hypothesis that taxation leads to democratisation. Timmons (2005) provides theory and evidence that taxation improves the provision of public goods and services. Hoem Sjursen (2023) presents experimental evidence that taxation increases the demand for accountability on the ruler.

their bureaucracies. These improvements, such as better record-keeping and legal frameworks, often modernize other government sectors, enhancing overall state capacity (Besley and Persson 2011).

But do we see the emergence of a governance dividend in less developed economies? A growing body of research is assessing whether, and in which form, this is happening in less developed economies and largely finds that taxation is linked to governance improvements.⁴ At the macro level, Dom, Morrissey, and Tagem (2023) examine the effect on taxation on accountability in a panel of 47 African economies, finding that tax revenues have a positive effect on measures of vertical accountability. At the micro level, Weigel (2020) finds that a property tax in a large city in the Democratic Republic of Congo induced greater political participation by citizens that, in turn, improved governance. Similarly, Pritchard, Jibao, and Orgeira Pillai (2025) present empirical evidence from a quasi-randomized property tax reform in Sierra Leone that such tax reform had a positive effect on both citizens' political engagement and perceived quality of public services. Gadenne (2017) finds that in Brazilian municipalities an increase in local taxes, unlike grants, improved both the quantity and quality of education infrastructure. Finally, Persson and Rothstein (2015) argue and offer qualitative evidence from Uganda supporting the idea that taxation leads to greater administrative capacity (i.e., less corruption) because citizens develop a "sense of ownership of the state". The debate on developing economies is far from settled, because it is not entirely clear yet how general the possibility of a governance dividend is in such economies, when it arises, which governance dimensions are affected, and which taxes are more likely to produce a governance dividend. Here we focus on this latter aspect and, specifically, on factor taxation: is it taxation on labour or taxation on capital that leads to a governance dividend?

Let's discuss what guidance the literature offers. The consensus is that the governance effects of taxation are expected to be stronger when taxes are salient to taxpayers. And taxes on income are typically more 'visible' than other forms of taxation (such as trade or indirect taxes) and therefore more likely to heighten public scrutiny of government actions, foster political engagement on the part of the citizenry, and enhance the quality of government.⁵ Therefore, in principle, both labour and capital taxation could be linked to governance improvements, as they are forms of direct taxation where income is that tax base for each. This implies that they could be equally likely to heighten public scrutiny of government actions on the part of the citizenry and so explain the variation in less developed economies of measures of political representation and accountability, which are typically used in cross-country regressions to capture the idea of a governance dividend (e.g., Ross 2004; Dom, Morrissey, and Tagem 2023). There are, however, two arguments suggesting that governance effects of capital and labour taxation may not be symmetrical.

⁴ Pritchard (2015) is one the first studies to present systematic evidence. See the collection of studies in Kjær, Ulriksen, and Bak (2024) on revenue bargaining in Africa.

⁵ 'Visibility' is commonly understood as taxpayers' knowledge and perceptions of the amount of tax they pay determine attitudes towards taxes (see Gemmell, Morrissey, and Pinar 2004). When assessing individual components of taxation (income taxes, taxes on goods and services, and trade taxes), Dom, Morrissey, and Tagem (2023) find that direct (income) taxation is most robust predictor of improvements in accountability. Total indirect tax revenue, but not individual components, is also positively associated with accountability. Similarly, in a lab-in-the-field experiment in Uganda, de la Cuesta et al. (2023) show that (less visible) indirect taxes have a much lower effect than (visible) direct taxes on the willingness of citizens to hold leaders accountable.

First, owners of labour and capital may have different bargaining power and, hence, different capacity to negotiate with governments over taxation.⁶ Labour and capital differ in their degree of mobility (i.e., how easily the base can escape). As Bates and Lien (1985, p. 59) show, a rational ruler will trade off concessions in policies for increases in the tax rate to a greater degree the higher the elasticity of the tax base. The implication is that those sectors or citizens that possess more mobile factors will have greater bargaining power over taxation. In open economies, capital is more mobile across borders than labour. Hence, concerns about capital flight can make the ruler more inclined to make concessions to capital owners. On the contrary, labour is less internationally mobile than capital, so its specific ability to bargain taxes may be weaker given its lower tax base elasticity. This implies that governance improvements are more likely to materialize in response to capital taxation, over labour taxation.

Second, owners of labour and capital may have different interests and hence different expectations with respect to the fiscal social contract. As collecting tax revenues is costly, Timmons (2005) argues that it is efficient on the part of the ruler to negotiate taxes with individual groups of citizens and provide, in return for taxation, public goods and service that appeal to the interests and needs of each of them. Empirically, Timmons (2005) finds support for this idea, showing that taxes salient to poorer parts of the population are associated with increased provision of public goods and services on health and education, while taxation that is salient to the rich is associated with improved provision of law and order. This implies that both labour and capital taxation can lead to governance improvements, but they may stimulate improvement in different governance dimensions because owners of labour and capital may have different policy preferences. Hence, to appeal to owners of capital, rulers may invest in reforms promoting property rights protection, impartial courts, and predictable regulation, which are core components of the rule of law. And they may be also likely to invest in governance reforms appealing owners of labour, such as political systems that may guarantee a greater provision of public goods and services and a fairer distribution of resources.

The literature on the governance dividend hypothesis has not looked at factor income taxation yet. And recent data innovations help in this respect. The Globalization and Taxation Dataset (Bachas et al. 2024) provide effective tax rates (ETRs) on capital and labour by country-year, enabling analyses of tax composition rather than aggregates. This is what we shall discuss next.

3 Data and methods

Our analysis relies on the Globalization and Taxation Dataset (Bachas et al. 2024), which provides estimates of disaggregated tax revenue and national income components, for more than 150 countries from 1965 to 2018. Crucially, it provides new measures of macroeconomic effective tax rates (ETRs): (i) the effective tax rate on labour (ETR_L), which is the total amount of taxes effectively collected on labour divided by total labour income in the economy; and (ii) the effective tax rate on capital (ETR_K), which is the total amount of taxes effectively collected on capital divided by total capital income. Because these measures focus on the amount effectively levied on factors of production, they are in line with the ‘governance dividend’ hypothesis.

⁶ The possibility that the outcome of tax bargaining may depend on the bargaining power of different social groups is also in North (1990, Ch. 6, p. 48-49).

Labour-tax revenues include payroll taxes; social security payments; personal income taxes on labour, while capital-tax revenues include corporate income taxes, wealth taxes, property taxes; personal income taxes on capital. Indirect taxes are treated as a separate category (i.e., they are assigned neither to labour nor to capital). A key challenge is allocating personal income tax (PIT) to factors of production, because not all labour and capital income is subject to personal income taxation (e.g., individuals are not required to file an income tax return, legal exemptions for some forms of income) and because labour and capital income are not necessarily subject to the same tax rate (e.g., dual systems, labour and capital incomes are subject to different schedules). Bachas et al. (2024) resolve this in three steps. They start by assuming as a baseline, that 15% of PIT revenues derive from capital and 85% from labour. Then they use data from Jensen (2022), which documents the location of the PIT threshold across countries, to adjust for the share of capital income in the PIT at the country-year level (since richer taxpayers derive a larger share of their income from capital, countries with a high PIT exemption threshold—and thus more exempted taxpayers—have a larger capital share of PIT revenue). Finally, they use data from the OECD to account for dual income tax systems. Specifically, when dividends face a lower tax rate than ordinary income, they compute the ratio of the statutory rate on dividends to that of the top rate on labour income and adjust the capital share of PIT revenue down when this ratio is below one.

Figure 1: Effective tax rate on capital and labour income in different income groups

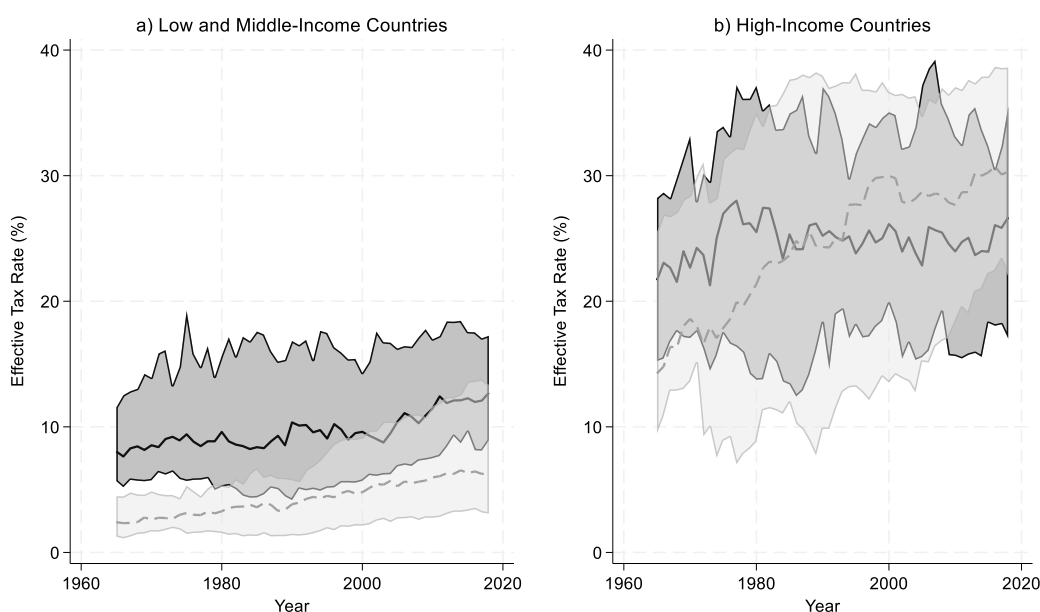


Figure 1 shows the trends in factor taxation in low- and middle-income countries (panel a) and in High-income countries (panel b). The thick line shows the median value of the ERT_K , while the dashed line indicates the median ERT_L . The corresponding shaded areas represent the interquartile ranges. There is a notable difference between high-income countries and low- and middle-income countries, for which there is a rise in the effective tax rate starting from the nineties, leading to a divergence from the effective tax rate on labour, while in High-income countries the median ERT_L has overcome the ERT_K .⁷ These patterns suggest that the extent and reliance on labour and capital taxation is structurally different in low- and middle-income countries compared to High-income

⁷ See Bachas et al. (2024) for further details on the differences between developing and high-income countries.

countries and motivate us to focus on a sample of low- and middle-income countries, yielding a panel of up to 102 countries.

As proxies for governance quality, we consider four different indicators from the V-Dem Dataset (Coppedge et al. 2025).⁸ First, we examine the impact of factor income taxation on *electoral democracy*, which captures the extent to which the ideal of electoral democracy is achieved. This index incorporates measures of freedom of association, clean elections, freedom of expression, elected officials, and suffrage.⁹ Second, we consider *vertical accountability*, which refers to the population's ability to hold the government accountable through elections. It is composed of two main components: the quality of elections and the independence of political parties. Third, we analyse the impact on *egalitarian democracy*, which is achieved when: a) rights and freedoms of individuals are protected equally across all social groups; b) resources are distributed equally across all social groups; and c) groups and individuals enjoy equal access to power. Fourth, we use the *rule of law*, which measures the extent to which laws are enforced transparently, independently, predictably, impartially, and equally, and the degree to which government officials comply with the law.¹⁰ The first two variables have often used in earlier studies on the governance dividend (e.g., Ross 2004; Dom, Morrissey, and Tagem 2023). Instead, *egalitarian democracy* and *rule of law* are selected to reflect the possibility that labour and capital may have different interests or different capacities to bargain with governments over taxation.

Figure 2 summarizes the distribution of our core variables per decade. The median effective tax rate on capital (panel *a*) and the median effective tax rate on labour (panel *b*) increase, especially after the 1990s. In both cases, dispersion remains wide, with frequent upper-tail outliers. On governance measures (panels *c*, *d* and *e*), electoral democracy, vertical accountability, and egalitarian democracy

⁸ V-Dem measures have substantial time series variation (as well as covering a large sample of countries), while presenting higher degrees of internal consistency (as shown in Boese 2019) and hence greater reliability in terms of cross-country and temporal comparisons. For example, one of the major advantages of the V-Dem dataset is that it typically uses 25 experts per country and 5 experts per topic. This addresses a common criticism of institutional quality measures that they are affected by 'coder bias', i.e. one expert coding many or all institutions of a country may have negative or positive views of institutional functioning and so artificially under- or over-rate institutions in different areas.

⁹ The electoral principle of democracy seeks to embody the core value of making rulers responsive to citizens, achieved through electoral competition for the electorate's approval under circumstances when suffrage is extensive; political and civil society organizations can operate freely; elections are clean and not marred by fraud or systematic irregularities; and elections affect the composition of the chief executive of the country. In between elections, there should be freedom of expression and an independent media capable of presenting alternative views on matters of political relevance. In the V-Dem conceptual scheme, electoral democracy is understood as an essential element of any other conception of representative democracy, including liberal, participatory, deliberative, and egalitarian.

¹⁰ The *rule of law* index in V-DEM addresses the following question: 'to what extent are laws transparently, independently, predictably, impartially, and equally enforced, and to what extent do the actions of government officials comply with the law?'. The index is formed by taking the point estimates from a Bayesian factor analysis model of the indicators for: compliance with high court, compliance with judiciary, high court independence, lower court independence, executive respects constitution, rigorous and impartial public administration, transparent laws with predictable enforcement, access to justice for men, access to justice for women, judicial accountability, judicial corruption decision, public sector corrupt exchanges, public sector theft, executive bribery and corrupt exchanges, executive embezzlement and theft. The index ranges from 0 to 1, with a higher value indicating a better rule of law.

all shift upward over time, indicating broad improvements. Rule of law (panel *f*) is comparatively flat, with only modest gains and near-stable dispersion. Overall, the plots suggest that there is variation across decades.

Figure 2: Box plots of factor income taxation and governance variables per decade

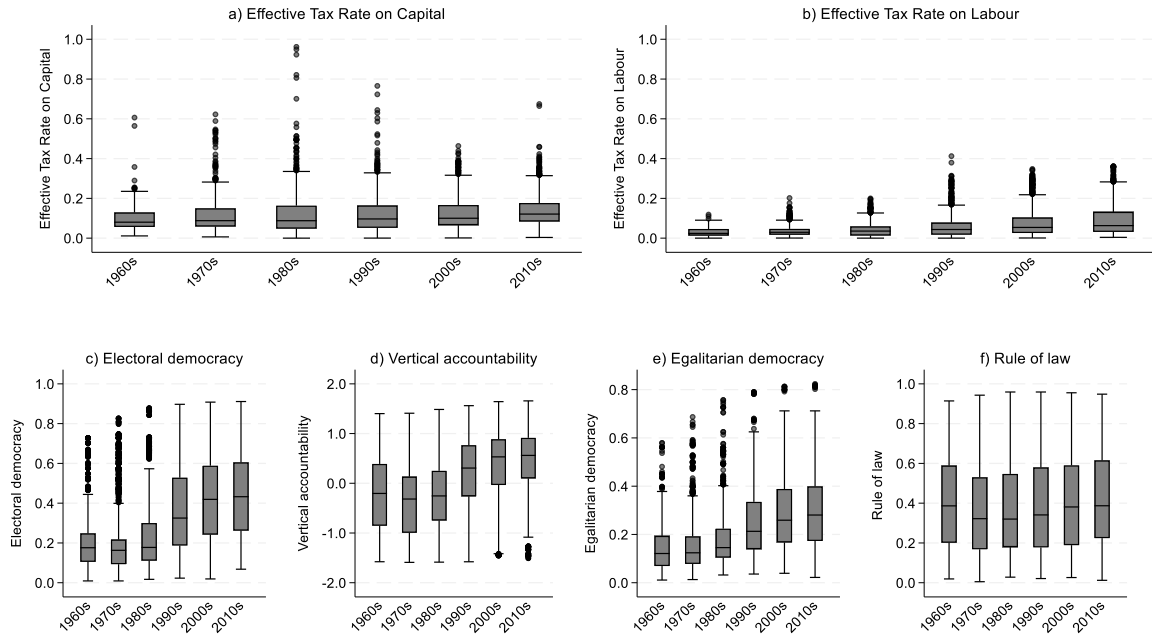
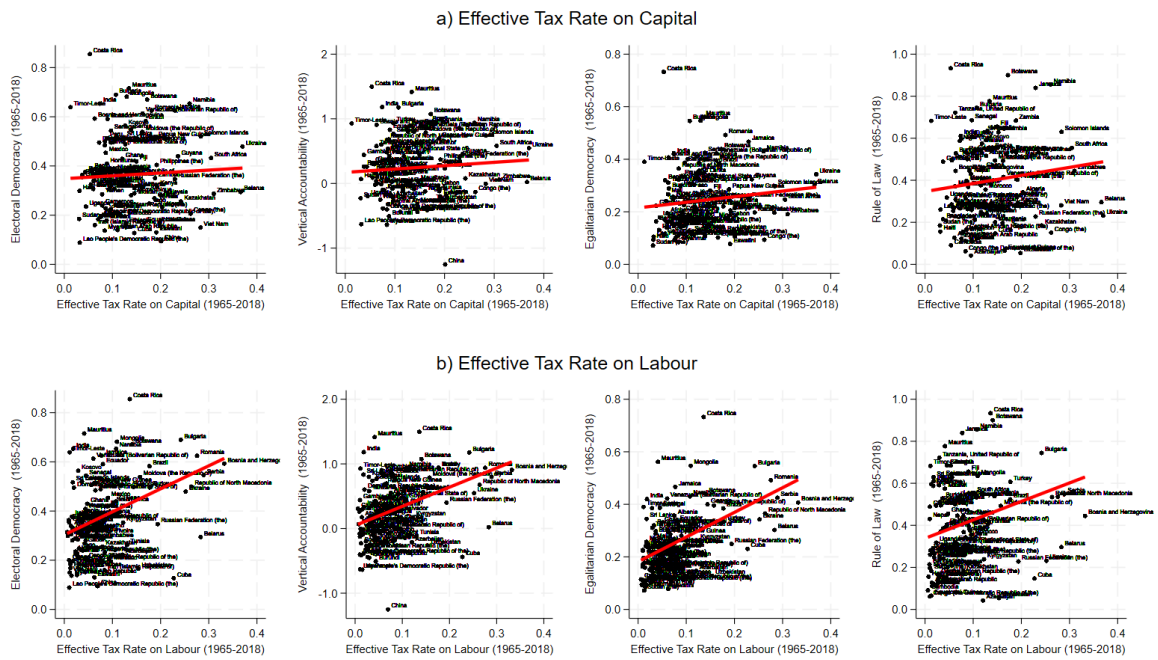


Figure 3 presents scatter plots of the long-run averages in factor income taxation and governance quality indicators. ETR_L is positively correlated with all four governance indicators, while ETR_K is positively correlated with *rule of law*, and mildly correlated with *egalitarian democracy*, *electoral democracy*, and *vertical accountability*.

Figure 3: Scatter plots of factor income taxation and governance quality



While informative on the association between variables, these plots are purely descriptive and do not account for confounding factors or establish causality. To account for confounding factors between factor income taxation and governance quality, we estimate the following panel specification:

$$GOV_{i,t} = \beta_0 + \beta_1 ETR_{i,t} + \beta_2 X_{i,t} + \alpha_i + \delta_t + \varepsilon_{i,t} \quad (1)$$

where $GOV_{i,t}$ denotes governance quality in country i at time t , measured using the four V-Dem indicators described above: *electoral democracy*, *vertical accountability*, *egalitarian democracy* and *rule of law*. $ETR_{i,t}$ is the *effective tax rate* on either capital or labour. $X_{i,t}$ is a vector of control variables, including *GDP per capita*, and *population density*.¹¹ All regressions include country fixed effects (α_i) and year fixed effects (δ_t) to control for unobserved heterogeneity and common shocks, respectively. Standard errors are clustered at the country level to allow for unknown forms of heteroskedasticity and serial correlation. We use annual data and the descriptive statistics, presented in Table 1, confirm that our key dependent and explanatory variables vary both across countries and over time, although in most cases the cross-sectional variation is larger and in the specific case of the *effective tax rate on labour* there is significantly more cross-sectional than within-country variation. This perhaps should not be too surprising, as the ‘governance dividend’ hypothesis is about relationships whose mechanisms have long-run characteristics and it can be suitably tested with panel methods that use (also) cross-sectional variation. Here we first estimate (1) by fixed effects regressions, which have the important advantage of addressing endogeneity due to time-invariant unobservables (and capture short-run effects, allowing to assess whether the cross-sectional relationship between the variables of interests still holds *within* statistical units). This will come at the significant cost of removing most of the variation in our variables of interest, as fixed effects regressions use only *within* variation. And this may be particularly concerning for the *effective tax rate on labour*, since it varies relatively little over

¹¹ We estimate parsimonious specifications to maximise sample size. Table A3 shows that our results do not hinge on this choice and remain robust under richer specifications.

time and fixed effect regressions could artificially shoehorning it into a spurious relationship with the governance measures. Hence, we present also random effects regressions, as they efficiently use both *within* and *between* variation and are more likely to pick up the long-run characteristics of the 'governance dividend' hypothesis.

Table 1: Summary statistics: 102 low- and middle-income countries

	Mean	Std. dev.			Min	Max
		overall	between	within		
Electoral democracy	0.364	0.207	0.159	0.139	0.032	0.911
Vertical accountability	0.244	0.686	0.481	0.498	-1.571	1.657
Egalitarian democracy	0.242	0.147	0.123	0.085	0.025	0.824
Rule of law	0.398	0.232	0.209	0.110	0.018	0.955
Effective tax rate on capital	0.126	0.096	0.074	0.067	0.000	0.962
Effective tax rate on labour	0.065	0.066	0.072	0.028	0.000	0.412
GDP per capita (log)	7.418	0.950	0.872	0.357	4.809	9.603
Population density	90.618	133.706	127.689	37.117	1.025	1256.227

4 Results

This section presents and assesses panel evidence on whether capital and labour taxation have different impacts on governance quality. First, we present our baseline results. Second, we address potential endogeneity using an instrumental variables (IV) strategy. We also present robustness checks along the way.

4.1 Baseline estimates

Table 2 presents fixed effects estimates. They suggest that the taxation of capital income is significantly and positively associated with governance outcomes, while there seems to be weaker association in the case of labour taxation. Specifically, the *effective tax rate on capital* (ETR_K) shows consistent and statistically significant positive coefficients across the four governance indicators. This suggests that higher levels of capital taxation are associated with improved governance, in line with expectations that taxation can foster state accountability by reinforcing the fiscal contract between citizens and the state. By contrast, the coefficients for the *effective tax rate on labour* (ETR_L) are generally statistically insignificant, although ETR_L is positively and significantly associated with *Egalitarian Democracy*. The estimates in Table 2 imply that (ceteris paribus) an increase of one standard deviation (i.e., 0.067) in the ETR_K would be associated to an increase in the quality of *Rule of Law* of 0.012 (on average), which is equivalent to approximately one tenth of a standard deviation. The same illustration produces similar results with respect to other governance variables and to ETR_L . For comparison, Table 3 reports random effects estimates. They are similar. Are the estimates quantitatively significant? As there are no directly comparable estimates, this question has no straightforward answer. However, they do not seem implausibly large, if one compares them to earlier studies, such as Timmons (2005).

These results are confirmed by a series of robustness checks. First, adding further control variables leaves the results unchanged (Table A3). Second, including both capital and labour effective tax rates in the same specification yields similar results (Table A4). Third, using the capital and labour tax revenues as a share of net domestic product (NDP) at factor prices as alternative independent variables, confirms the positive association between capital taxation and the governance measures, while labour taxation continues to be associated with Egalitarian Democracy (Tables A5 and A6). Next, introducing region-by-time fixed effects to absorb region-specific shocks across different periods leaves the main results consistent (Table A7). Finally, probing further into the robustness of the results, Table A8 implements a leave-one-region-out exercise: we re-estimate the baseline excluding, in turn, all countries from a) Africa, b) Asia, and c) Latin America and the Caribbean, to assess whether the results are driven by any single region. We find that the significance is attenuated in some cases (e.g., when African countries are excluded). But this is not surprising, as all the regressions are now estimated with significantly less observations. Overall, the positive association of capital taxation persists and as it does the association of labour taxation with Egalitarian Democracy. And this points to the robustness of the baseline findings. Next subsection tries to go beyond statistical association by using instrumental variables.

Table 2: Effective tax rate and the governance dividend: fixed effects estimates

	<i>Electoral democracy</i>		<i>Vertical accountability</i>		<i>Egalitarian democracy</i>		<i>Rule of law</i>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Effective tax rate on capital</i>	0.229*** (0.066)		0.554** (0.218)		0.175*** (0.049)		0.184** (0.089)	
<i>Effective tax rate on labour</i>		0.323 (0.284)		0.400 (0.792)		0.484** (0.191)		0.472 (0.300)
GDP per capita (log)	-0.047*** (0.017)	-0.045** (0.017)	-0.058 (0.062)	-0.047 (0.063)	-0.028*** (0.011)	-0.033*** (0.012)	0.005 (0.023)	0.001 (0.024)
Population density	-0.000** (0.000)	-0.000** (0.000)	-0.001** (0.001)	-0.001* (0.001)	-0.000*** (0.000)	-0.000** (0.000)	-0.001** (0.000)	-0.000* (0.000)
Constant	0.552*** (0.119)	0.554*** (0.124)	0.348 (0.459)	0.311 (0.470)	0.344*** (0.077)	0.372*** (0.082)	0.363** (0.160)	0.388** (0.168)
Observations	4,349	4,349	4,349	4,349	4,349	4,349	4,349	4,349
R-squared	0.471	0.462	0.369	0.364	0.485	0.485	0.090	0.088
Number of countries	102	102	102	102	102	102	102	102
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3: Effective tax rate and the governance dividend: random effects estimates

	Electoral democracy		Vertical accountability		Egalitarian democracy		Rule of law	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Effective tax rate on capital	0.215*** (0.065)		0.491** (0.211)		0.171*** (0.048)		0.180** (0.089)	
Effective tax rate on labour		0.354 (0.262)		0.553 (0.686)		0.502*** (0.184)		0.479* (0.287)
GDP per capita (log)	-0.037** (0.015)	-0.038** (0.016)	-0.020 (0.056)	-0.016 (0.058)	-0.025** (0.010)	-0.030*** (0.011)	0.007 (0.021)	0.002 (0.023)
Population density	-0.000** (0.000)	-0.000* (0.000)	-0.001* (0.000)	-0.001 (0.000)	-0.000*** (0.000)	-0.000** (0.000)	-0.000** (0.000)	-0.000* (0.000)
Constant	0.468*** (0.114)	0.481*** (0.119)	0.029 (0.426)	0.034 (0.437)	0.313*** (0.077)	0.344*** (0.081)	0.335** (0.155)	0.363** (0.162)
Observations	4,349	4,349	4,349	4,349	4,349	4,349	4,349	4,349
R-squared	0.0786	0.108	0.129	0.148	0.0650	0.139	0.00319	0.0156
Number of countries	102	102	102	102	102	102	102	102
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	NO	NO	NO	NO	NO	NO	NO	NO

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

4.2 Instrumental variables (IV) results

Our baseline results document a robust and generalized positive association between capital taxation and governance quality, and a positive association between labour taxation and electoral democracy. However, endogeneity concerns may still compromise their ‘causal’ interpretation. For example, the estimates presented so far may still suffer from potential reverse causality (e.g., countries with better quality of government may adopt more effective tax systems) To address this, we implement an instrumental variable (IV) strategy using two shift-share instruments that isolate plausibly exogenous variation in capital and labour taxation. Shift-share instruments combine external shocks with country-specific exposure shares that reflect how much a given country is likely to be affected by these global changes, based on its economic structure. This approach builds on Bartik (1991), who used national industry trends interacted with local industry shares to generate exogenous local labour demand shocks. Shift-share instruments have since become widely used in labour (e.g., Autor et al. 2013), conflict (e.g., Nunn and Qian 2014), and economic development (e.g., Dreher and Langlotz 2020) research to identify causal effects in the presence of endogenous policies or outcomes.¹²

We construct one instrument for capital and one for labour: a) the interaction of the average OECD capital effective tax rate with domestic capital intensity; and b) the interaction of neighbouring countries’ average labour effective tax rate with domestic labour intensity. For capital taxation, the shift-share instrument captures international pressure on domestic capital tax policy driven by external tax competition. As capital is mobile internationally, increases in OECD capital taxation can incentivize low- and middle-income countries to lower their own capital tax burdens to attract investments, in line with the “race to the bottom” hypothesis.¹³ For labour taxation, we rely on the hypothesis that fiscal policies may follow regional waves of diffusion: neighbour states, connected through historical legacies, political culture, and informational ties, exhibit similar movement in labour-tax burdens over time.¹⁴ In both cases, the identifying assumption is that changes in OECD or neighbouring countries’ tax policy are exogenous to governance dynamics in low- and middle-income countries. At the same time, differential exposure to these shocks is driven by observable economic characteristics, specifically, a country’s factor (capital or labour) intensity. Countries with larger factor-intensive economy are more exposed to global trends, and thus more likely to adjust their tax systems in response to external shocks.

Formally, the instruments are defined as:

$$IV_{K_{it}} = Ksh_ndp_{i,t} \times OECD_ETR_{K,t} \quad (2)$$

$$IV_{L_{it}} = Lsh_ndp_{i,t} \times neighbours_ETR_{L,t} \quad (3)$$

where Ksh_ndp_{it} is the capital share of NDP in country i at time t , and $OECD_ETR_{K,t}$ is the average capital tax rate across OECD countries in year t , whereas Lsh_ndp_{it} is the labour share of NDP in

¹² See Borusyak, Hull, and Jaravel (2025), for a review.

¹³ See, among others, Devereux et al. (2002), Steinmüller et al. (2019).

¹⁴ Acemoglu et al. (2019) exploit regional waves of democratization as a source of exogenous variation in democracy.

country i at time t , and $neighbours_ETR_{k,t}$ is the average labour tax rate in year t among countries sharing a land border with country i .

We implement the IV strategy by estimating, separately for capital and labour, the following first-stage equation:

$$ETR_{it} = \pi_0 + \pi_1 IV_{i,t} + \pi_2 X_{i,t} + \alpha_i + \delta_t + \varepsilon_{i,t} \quad (4)$$

Then we estimate the following second stage equation:

$$GOV_{i,t} = \beta_0 + \beta_1 \widehat{ETR}_{i,t} + \beta_2 X_{i,t} + \alpha_i + \delta_t + \varepsilon_{i,t} \quad (5)$$

where $\widehat{ETR}_{i,t}$ is the predicted value of the effective tax rate on capital and labour, separately, from the first stage. Standard errors are clustered at the country level.

We estimate (5) using our IVs in both fixed and random effects regressions. Table A9 in the Appendix reports the first stage for fixed and random effects IV estimates. The first-stage coefficients on the capital and labour instruments are significant at the 1% level. Consistent with tax competition, increases in OECD capital-tax burdens predict reductions in capital taxation among LMICs; and consistent with regional diffusion, domestic labour taxation increases as neighbours' labour-tax burdens rise. The fixed effects first-stage F-statistic is 34.79 for capital, comfortably above conventional weak-instrument thresholds, and 9.88 for labour, which is instead borderline.¹⁵ To account for potential instrument weakness, the fixed effects IV results in Table 4 are estimated by Limited Information Maximum Likelihood (LIML), using Fuller's version (Fuller 1977; Baum et al. 2007).¹⁶ As FE IV estimates use only the within-country variation, Table 5 produces also random effects estimates, which use all the variation in the data and show stronger first-stage F-stats. We find a positive and statistically significant effect of capital taxation on *Rule of Law*, while labour taxation has a positive and significant effect on *Egalitarian Democracy*. Point estimates exceed those in the baseline specification, suggesting that accounting for endogeneity strengthens the observed relationships. Substantively, the governance dividend from capital taxation appears to operate primarily through legal and administrative dimensions of governance, whereas labour taxation is more closely linked to improvements in egalitarian-democratic features. The estimates in Table 5 imply that (on average) an increase of one standard deviation (i.e., 0.096) in the ETR_k would lead to an increase in the quality of *Rule of Law* of 0.046, which is equivalent to approximately one fifth of a standard deviation. And an increase of one standard deviation (i.e., 0.066) in the ETR_L would lead to an

¹⁵ This signals potential weak instrumentation, as the F-statistics for the first stage regressions should be (ideally much) greater 10, following a rule of thumb suggested by Staiger and Stock (1997). These specifications pass the Stock–Yogo (2005) test for weak instruments for 15% maximal relative bias at the 5% significance level, but not for 10% maximal relative bias. With weak instruments, the estimated coefficient of interest could be biased towards OLS even if the instrument is weakly correlated with the error term, and especially in small samples. As a remedy, there is a broad consensus in the literature on using the LIML estimation (e.g. Cameron and Trivedi 2005, pp. 190–192).

¹⁶ This is more robust than Two-Stage Least Squares (2SLS) in the presence of weak instruments, as shown in Hahn et al. (2004), and it has lower small-sample variability. We set the user-specified constant (denoted by α in Fuller (1977)) to a value of four. While the Fuller 1 version yields the most unbiased estimator, the Fuller 4 version minimises the mean squared error of the estimator (Fuller 1977).

increase in the quality of *Egalitarian Democracy* of 0.098, which is equivalent to approximately two thirds of a standard deviation. We see no robust effects for measures political democracy and accountability. Why? Regarding capital taxation, this may be explained by the relatively weaker appeal to capital owners of such reforms, as democratization may be seen as expropriative (e.g., Bardhan 1999; Przeworski and Limongi 1993). Also, capital is relatively mobile, and its tax base can more easily escape in response to lack of accountability reforms. Regarding labour taxation, the lack of robust effects for other dimensions of governance suggests that labour owners may prioritize improvements in the distributions of resources in the context of less developed economies.

A plausible concern about our instruments is that we use the current (time-varying) levels of income factors rather than a predetermined value. Therefore, they may respond to domestic governance or country-specific shocks, possibly violating the exclusion restriction. Due to data limitations, we cannot construct the instruments using a predetermined base year. However, Tables A10 and A11 in the Appendix demonstrate that our results hold when we construct the shift part with either lagged or five-year averages of capital and labour intensity, respectively. These specifications maintain the core logic of exposure to international tax competition or diffusion while mitigating concerns over contemporaneous endogeneity.

Table 4: IV estimates: fixed effects

	Electoral democracy		Vertical accountability		Egalitarian democracy		Rule of law	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Effective tax rate on capital	0.158 (0.288)		0.262 (1.304)		0.237 (0.183)		0.478** (0.242)	
Effective tax rate on labour		1.483 (1.474)		-1.063 (4.802)		1.674* (0.976)		1.239 (1.752)
GDP per capita (log)	-0.044** (0.020)	-0.066* (0.036)	-0.048 (0.084)	-0.000 (0.125)	-0.031** (0.012)	-0.056** (0.025)	-0.005 (0.023)	-0.015 (0.048)
Population density	-0.000** (0.000)	-0.000 (0.000)	-0.001** (0.001)	-0.001 (0.001)	-0.000*** (0.000)	-0.000 (0.000)	-0.001** (0.000)	-0.000 (0.000)
Observations	4,349	3,962	4,349	3,962	4,349	3,962	4,349	3,962
Number of countries	102	94	102	94	102	94	102	94
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Excl. instruments F-statistics	34.79	9.876	34.79	9.876	34.79	9.876	34.79	9.876

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: IV estimates: random effects

	Electoral democracy		Vertical accountability		Egalitarian democracy		Rule of law	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Effective tax rate on capital	0.186 (0.290)		0.355 (1.277)		0.248 (0.187)		0.480** (0.244)	
Effective tax rate on labour		1.231 (0.920)		0.375 (2.488)		1.486** (0.722)		1.058 (1.366)
GDP per capita (log)	-0.036* (0.019)	-0.053* (0.027)	-0.013 (0.079)	0.005 (0.089)	-0.028** (0.012)	-0.050** (0.020)	-0.004 (0.023)	-0.011 (0.042)
Population density	-0.000** (0.000)	-0.000 (0.000)	-0.001* (0.000)	-0.001 (0.000)	-0.000*** (0.000)	-0.000 (0.000)	-0.000** (0.000)	-0.000 (0.000)
Constant	0.749*** (0.135)	0.762*** (0.144)	0.679 (0.509)	0.518 (0.513)	0.520*** (0.089)	0.555*** (0.107)	0.456*** (0.163)	0.452** (0.214)
Observations	4,349	3,962	4,349	3,962	4,349	3,962	4,349	3,962
Number of countries	102	94	102	94	102	94	102	94
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Excl. instruments F-statistics	39.15	20.19	39.15	20.19	39.15	20.19	39.15	20.19

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

5 Conclusions

Using a panel of 102 low- and middle-income countries, this paper has revisited the ‘governance dividend’ hypothesis, arguing that (also) the tax structure—and not just tax level—may affect governance outcomes, depending on which factor of production is taxed. Specifically, we analyse how effective tax rates on capital and labour income correlate with four key governance outcomes: *electoral democracy*, *vertical accountability*, *egalitarian democracy* and *rule of law*.

Our baseline estimates suggest a generalized positive association between capital income taxation and governance. By contrast, the association between labour income taxation and governance appears concentrated on *egalitarian democracy*: higher effective tax rates on labour are positively correlated with higher level of this indicator. To address endogeneity concerns, we implement an instrumental-variables strategy with two shift–share instruments, one for capital and one for labour: a) the interaction of OECD countries’ capital tax rates with domestic capital intensity; and b) the interaction of neighbouring countries’ labour tax rates with domestic labour intensity. The IV results suggest that capital taxation has a positive causal effect on the *rule of law*, with no clear effect on more participatory dimensions of governance. Conversely, IV estimates confirm that labour taxation exerts a positive effect on *egalitarian democracy*.¹⁷

Overall, these findings are consistent with the view that the nature of the fiscal contract may be different for capital and labour owners. And future research should systematically explore the potential channels through which factor income taxation may affect governance. Finally, these results carry implications for fiscal reform strategies in low- and middle-income countries. They suggest that designing tax systems may also lead countries to different paths of political and institutional development, depending on which factor of production one chooses to tax.

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¹⁷ A stylised fact of recent trends in inequality is the falling share of labour income in total income (and concomitantly, the rise in the share of capital income) in both advanced and developing economies (Karabarounis and Neiman 2014; Piketty 2014; Bergholt et al. 2022; Kheng et al. 2024). One important implication of our finding is that with falling share of labour income, the ‘governance dividend’ may be more reflected in improvements in the rule of law than in egalitarian democracy for many countries.

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Appendix

Table A1: Countries

Low-income: Guinea, Ethiopia, Nepal, Malawi, Burkina Faso, Mali, Liberia, Yemen, Togo, Haiti, Sierra Leone, Tanzania, Benin, Afghanistan, Central African Republic, Madagascar, Syria, Chad, Democratic Republic of the Congo, Uganda, Niger, Rwanda, Mozambique, Burundi, The Gambia.

Lower middle-income: Honduras, Indonesia, Pakistan, Kenya, Cameroon, El Salvador, Zambia, Ivory Coast, Morocco, Nicaragua, Eswatini, Papua New Guinea, Republic of the Congo, Laos, Egypt, Sudan, Timor-Leste, Ghana, Mauritania, Senegal, Vietnam, Lesotho, Solomon Islands, India, Kyrgyzstan, Mongolia, Burma/Myanmar, Bangladesh, Bolivia, Moldova, Philippines, Uzbekistan, Ukraine, Nigeria, Cambodia, Tunisia, Zimbabwe.

Upper middle-income: Iran, Armenia, Fiji, Albania, Ecuador, Türkiye, North Macedonia, Cuba, Botswana, Mauritius, Guatemala, Lebanon, Brazil, Colombia, Romania, Equatorial Guinea, Mexico, Malaysia, Peru, Namibia, China, South Africa, Gabon, Bulgaria, Belarus, Serbia, Dominican Republic, Georgia, Thailand, Sri Lanka, Bosnia and Herzegovina, Costa Rica, Azerbaijan, Guyana, Jordan, Jamaica, Paraguay, Algeria, Kazakhstan, Russia

Table A2: Variables

Variable name	Definition
ETR _k	Total amount of taxes effectively collected on capital divided by total capital income in the economy. Capital-tax revenues include corporate income taxes, wealth taxes, property taxes, personal income taxes on capital. Capital income equals mixed income, plus corporate firms' profits net of depreciation (operating surplus of corporations), plus actual and imputed rental income (operating surplus of households), plus a share of mixed income computed at the country-year level. Source: Bachas et al. 2024
ETR _L	Total amount of taxes effectively collected on labour divided by total labour income in the economy. Labour-tax revenues include payroll taxes; social security payments; personal income taxes on labour. Labour income equals compensation of employees plus a share of mixed income computed at the country-year level. Source: Bachas et al. 2024
Vertical accountability index	Question: "To what extent is the ideal of vertical government accountability achieved?" Definition. Vertical accountability captures the extent to which citizens have the power to hold the government accountable. The mechanisms of vertical accountability include formal political participation on part of the citizens — such as being able to freely organize in political parties — and participate in free and fair elections, including for the chief executive. Aggregation. Vertical accountability consists of two main components: elections and political parties. We operationalize electoral accountability with three components: 1) an aggregate measure the quality of elections; 2) the per cent of enfranchised population and 3) whether the chief executive is directly or indirectly elected. We model non-electoral regimes as having no suffrage and the quality of elections as a function of having an electoral regime (v2x_elecreg). Quality of elections consists of seven variables measuring different aspects of national elections for the executive and legislature. Specifically, we include autonomy and capacity of the electoral management body (v2elembaut) and (v2elembcap); accuracy of the voter registry (v2elrgstry), intentional irregularities conducted by the government and opposition (v2elirreg); intimidation and harassment by the government and its agents (v2elintim); to what extent the elections were multi-party in practice (v2elmulpar); and an overall measure for the freedom and fairness of elections (v2elfrfair). This is a modified version of the V-Dem Clean elections index (v2xel_frfair). We added the variable v2elmulpar, which is theoretically important for accountability, and we removed v2elvtobuy and v2elpeace, as they have low loadings. We measure suffrage as the percentage of people that have the legal right to vote (v2x_suffr) to proxy the inclusivity of the exercise of electoral accountability. To account for the differences between states which have an executive subject to elections, we include a dichotomous indicator of whether or not the head of the executive either the head of state or head of government — whoever has more relative power over the appointment and dismissal of cabinet ministers as measured by v2ex_hosw is subjected to direct or indirect elections (v2expathhs v2ex_legconhos v2expathhg v2exaphogp). The second form of vertical accountability focuses on political parties, which we model as a hierarchical node. This node includes variables that capture whether there are barriers to forming a party and how restrictive they are (v2psparban) and (v2psbars), as well as the degree to which opposition parties are independent of the ruling regime (v2psoppaut). Source: Coppedge et al. (2025).

Electoral democracy index	<p>Question: 'To what extent is the ideal of electoral democracy in its fullest sense achieved?'</p> <p>Definition. The electoral principle of democracy seeks to embody the core value of making rulers responsive to citizens, achieved through electoral competition for the electorate's approval under circumstances when suffrage is extensive, political and civil society organizations can operate freely, elections are clean and not marred by fraud or systematic irregularities, and elections affect the composition of the chief executive of the country. In between elections, there is freedom of expression and an independent media capable of presenting alternative views on matters of political relevance. In the V-Dem conceptual scheme, electoral democracy is understood as an essential element of any other conception of representative democracy—liberal, participatory, deliberative, egalitarian, or some other.</p> <p>Aggregation. The index is formed by taking the average of, on the one hand, the weighted average of the indices measuring freedom of association thick (<i>v2x_frassoc_thick</i>), clean elections (<i>v2xel_frefair</i>), freedom of expression (<i>v2x_freexp_altinf</i>), elected officials (<i>v2x_elecoff</i>), and suffrage (<i>v2x_suffr</i>) and, on the other, the five-way multiplicative interaction between those indices. This is halfway between a straight average and strict multiplication, meaning the average of the two. It is thus a compromise between the two best-known aggregation formulas in the literature, both allowing partial 'compensation' in one sub-component for lack of polyarchy in the others, but also punishing countries not strong in one sub-component according to the 'weakest link' argument. The aggregation is done at the level of Dahl's subcomponents with the one exception of the non-electoral component.</p> <p>The index is aggregated using this formula: $v2x_polyarchy = .5 * MPI + .5 * API = .5 * (v2x_elecoff * v2xel_frefair * v2x_frassoc_thick * v2x_suffr * v2x_freexp_altinf) + .5 * ((1/8) * v2x_elecoff + (1/4) * v2xel_frefair + (1/4) * v2x_frassoc_thick + (1/8) * v2x_suffr + (1/4) * v2x_freexp_altinf)$ Source: Coppedge et al. (2025).</p>
Egalitarian democracy index	<p>Question: To what extent is the ideal of egalitarian democracy achieved?</p> <p>Definition. The egalitarian principle of democracy holds that material and immaterial inequalities inhibit the exercise of formal rights and liberties, and diminish the ability of citizens from all social groups to participate. Egalitarian democracy is achieved when: 1. rights and freedoms of individuals are protected equally across all social groups; 2. resources are distributed equally across all social groups; 3. groups and individuals enjoy equal access to power. To make it a measure of egalitarian democracy, the index also takes the level of electoral democracy into account.</p> <p>Aggregation. The index is aggregated using this formula: $v2x_egalDEM = .25 * v2x_polyarchy^{1.585} + .25 * v2x_egal + .5 * v2x_polyarchy^{1.585} * v2x_egal$.</p> <p>The egalitarian component index (<i>v2x_egal</i>) is formed by averaging the following indices: equal protection index (<i>v2xeg_eqprotec</i>), equal access index (<i>v2xeg_eqaccess</i>) and equal distribution of resources (<i>v2xeg_eqdr</i>).</p> <p>Equal protection index (D) (<i>v2xeg_eqprotec</i>) Question: How equal is the protection of rights and freedoms across social groups by the state? Definition: Equal protection means that the state grants and protects rights and freedoms evenly across social groups. To achieve equal protection of rights and freedoms, the state itself must not interfere in the ability of groups to participate and it must also take action to ensure that rights and freedoms of one social group are not threatened by the actions of another group or individual.</p> <p>Aggregation: The index is formed by taking the point estimates from a Bayesian factor analysis model of the indicators for social class equality in respect for civil liberties (<i>v2clacjust</i>), social group equality in respect for civil liberties (<i>v2clsocgrp</i>) and per cent of population with weaker civil liberties (<i>v2clslnlptct</i>); reversed scale.</p> <p>Equal access index (D) (<i>v2xeg_eqaccess</i>) Question: How equal is access to power? Definition: The Equal Access subcomponent is based on the idea that neither the protections of rights and freedoms nor the equal distribution of resources is sufficient to ensure adequate representation. Ideally, all groups should enjoy equal de facto capabilities to participate, to serve in positions of political power, to put issues on the agenda, and to influence policymaking.</p> <p>Aggregation: The index is formed by taking the point estimates from a Bayesian factor analysis model of the indicators power distributed by socioeconomic position (<i>v2pepwrse</i>), power distributed by social group (<i>v2pepwrsoc</i>), and power distributed by gender (<i>v2pepwrngen</i>).</p> <p>Equal distribution of resources index (D) (<i>v2xeg_eqdr</i>) Question: How equal is the distribution of resources? Definition: This component measures the extent to which resources — both tangible and intangible — are distributed in society. An equal distribution of resources supports egalitarian democracy in two ways. First, lower poverty rates and the distribution of goods and services such as food, water, housing, education and healthcare ensure that all individuals are capable of participating in politics and government. In short, basic needs must be met in order for individuals to effectively exercise their rights and freedoms see, for example, Sen 1999, Maslow 1943. Second, high levels of resource inequality undermine the ability of poorer populations to participate meaningfully Aristotle, Dahl 2006. Thus, it is necessary to include not only measures of poverty and the distribution of goods and services, but also the levels of inequality in these distributions, and the proportion of the population who are not eligible for social services i.e. means-tests, particularistic distribution, etc.. This principle also implies that social or economic inequalities can translate</p>

	<p>into political inequalities, an issue addressed most notably by Walzer 1983, who argues that overlapping "spheres" of inequality are particularly harmful to society. To address these overlapping "spheres", this component also includes measures of the distribution of power in society amongst different socio-economic groups, genders, etc.</p> <p>Aggregation: The index is formed by taking the point estimates from a Bayesian factor analysis model of the indicators for particularistic or public goods (<i>v2dlencmps</i>), means tested vs. universalistic welfare policies (<i>v2dlunivl</i>), educational equality (<i>v2peedueq</i>) and health equality (<i>v2pehealth</i>).</p> <p>Source: Coppedge et al. (2025).</p>
Rule of law index	<p>Question: 'To what extent are laws transparently, independently, predictably, impartially, and equally enforced, and to what extent do the actions of government officials comply with the law?'</p> <p>Aggregation: The index is formed by taking the point estimates from a Bayesian factor analysis model of the indicators for compliance with high court (<i>v2juhccomp</i>); compliance with judiciary (<i>v2jucomp</i>); high court independence (<i>v2juhcind</i>); lower court independence (<i>v2juncind</i>); executive respects constitution (<i>v2exrescon</i>); rigorous and impartial public administration (<i>v2clrspct</i>); transparent laws with predictable enforcement (<i>v2cltrnslw</i>); access to justice for men (<i>v2clacjstm</i>); access to justice for women (<i>v2clacjstw</i>); judicial accountability (<i>v2juaccnt</i>); judicial corruption decision (<i>v2jucorrdc</i>); public sector corrupt exchanges (<i>v2excrptps</i>); public sector theft (<i>v2exthftps</i>); executive bribery and corrupt exchanges (<i>v2exbribe</i>); executive embezzlement and theft (<i>v2exembez</i>).</p> <p>Source: Coppedge et al. (2025).</p>
GDP per capita (log)	<p>Log of Gross domestic product per capita (constant 2015 US\$). Gross domestic product is the total income earned through the production of goods and services in an economic territory during an accounting period. It can be measured in three different ways: using either the expenditure approach, the income approach, or the production approach. This indicator is expressed in constant prices, meaning the series has been adjusted to account for price changes over time. The reference year for this adjustment is 2015. This indicator is expressed in United States dollars.</p> <p>Source: World Bank (2025).</p>
Population density	<p>Population density is midyear population divided by land area in square kilometres. Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship--except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of their country of origin. Land area is a country's total area, excluding area under inland water bodies, national claims to continental shelf, and exclusive economic zones. In most cases the definition of inland water bodies includes major rivers and lakes.</p> <p>Source: World Bank (2025).</p>
Education	<p>Question: What is the average years of education among citizens older than 15?</p> <p>Clarification: The Average years of education in the total population aged 15 years and older.</p> <p>Source: Coppedge et al. (2025).</p>
GDP growth	<p>GDP growth (annual %). Gross domestic product is the total income earned through the production of goods and services in an economic territory during an accounting period. It can be measured in three different ways: using either the expenditure approach, the income approach, or the production approach. This indicator denotes the percentage change over each previous year of the constant price (base year 2015) series in United States dollars.</p> <p>Source: World Bank (2025).</p>
Gini index	<p>Gini coefficient ("Gini_std").</p> <p>Source: UNU-WIDER (2023)</p>

Table A3: Effective tax rate and the governance dividend: fixed effects estimates with further controls

	Electoral democracy		Vertical accountability		Egalitarian democracy		Rule of law	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Effective tax rate on capital	0.319*** (0.106)		0.638** (0.275)		0.256*** (0.077)		0.252* (0.136)	
Effective tax rate on labour		0.225 (0.367)		-0.288 (1.004)		0.553** (0.237)		0.777 (0.666)
GDP per capita (log)	-0.115*** (0.038)	-0.108*** (0.040)	-0.360*** (0.118)	-0.335*** (0.118)	-0.068** (0.026)	-0.067** (0.027)	-0.040 (0.053)	-0.043 (0.050)
Population density	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.001)	-0.000 (0.001)	-0.000** (0.000)	-0.000* (0.000)	-0.001** (0.000)	-0.001** (0.000)
Education	0.029 (0.029)	0.031 (0.032)	0.137 (0.086)	0.145 (0.091)	0.013 (0.019)	0.011 (0.020)	0.007 (0.034)	0.003 (0.037)
GDP growth	-0.001 (0.001)	-0.002* (0.001)	0.001 (0.003)	-0.001 (0.003)	-0.001 (0.001)	-0.001** (0.001)	-0.001 (0.001)	-0.001 (0.001)
Gini index	-0.000 (0.001)	-0.000 (0.001)	-0.004 (0.002)	-0.004 (0.002)	0.000 (0.001)	0.000 (0.001)	0.001* (0.001)	0.001 (0.001)
Constant	1.050*** (0.238)	1.020*** (0.249)	2.571*** (0.730)	2.442*** (0.737)	0.619*** (0.168)	0.630*** (0.177)	0.691* (0.355)	0.724** (0.344)
Observations	913	913	913	913	913	913	913	913
R-squared	0.499	0.482	0.440	0.432	0.537	0.528	0.204	0.210
Number of countries	84	84	84	84	84	84	84	84
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A4: Effective tax rate and the governance dividend: capital and labour in the same specification

	Electoral democracy	Vertical accountability	Egalitarian democracy index	Rule of law
	(1)	(2)	(3)	(4)
Effective tax rate on capital	0.214*** (0.070)	0.555** (0.226)	0.139*** (0.047)	0.150* (0.089)
Effective tax rate on labour	0.166 (0.287)	-0.007 (0.803)	0.382** (0.192)	0.362 (0.301)
GDP per capita (log)	-0.050*** (0.017)	-0.058 (0.062)	-0.035*** (0.011)	-0.002 (0.024)
Population density	-0.000** (0.000)	-0.001** (0.001)	-0.000*** (0.000)	-0.000* (0.000)
Constant	0.568*** (0.119)	0.347 (0.460)	0.381*** (0.079)	0.398** (0.165)
Observations	4,349	4,349	4,349	4,349
R-squared	0.472	0.369	0.495	0.096
Number of countries	102	102	102	102
Year FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A5: Tax revenues and the governance dividend: fixed effects estimates

	Electoral democracy		Vertical accountability		Egalitarian Democracy		Rule of Law	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Taxes on capital (% of NDP at factor prices)	0.578*** (0.207)		1.379** (0.607)		0.421*** (0.155)		0.429* (0.250)	
Taxes on labour (% of NDP at factor prices)		0.747* (0.434)		1.250 (1.233)		0.934*** (0.293)		0.949** (0.453)
GDP per capita (log)	-0.050*** (0.017)	-0.046*** (0.017)	-0.065 (0.064)	-0.051 (0.063)	-0.030*** (0.011)	-0.032*** (0.011)	0.003 (0.023)	0.002 (0.023)
Population density	-0.000** (0.000)	-0.000** (0.000)	-0.001** (0.001)	-0.001* (0.001)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000* (0.000)	-0.000* (0.000)
Constant	0.579*** (0.124)	0.553*** (0.122)	0.411 (0.470)	0.324 (0.466)	0.363*** (0.081)	0.362*** (0.079)	0.381** (0.163)	0.380** (0.165)
Observations	4,349	4,349	4,349	4,349	4,349	4,349	4,349	4,349
R-squared	0.468	0.466	0.367	0.365	0.479	0.492	0.085	0.094
Number of countries	102	102	102	102	102	102	102	102
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES

Standard errors robust against heteroskedasticity and serial correlation at the country level are reported in parentheses.

***p<0.01, **p<0.05, *p<0.1.

Table A6: Tax revenue and the governance dividend: random effects GLS estimates

	Electoral democracy		Vertical accountability		Egalitarian democracy		Rule of law	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Taxes on capital (% of NDP at factor prices)	0.532*** (0.203)		1.189** (0.593)		0.407*** (0.154)		0.417* (0.250)	
Taxes on labour (% of NDP at factor prices)		0.763* (0.396)		1.367 (1.050)		0.947*** (0.278)		0.938** (0.432)
GDP per capita (log)	-0.039** (0.016)	-0.038** (0.016)	-0.024 (0.057)	-0.020 (0.057)	-0.026** (0.011)	-0.029*** (0.011)	0.005 (0.022)	0.003 (0.022)
Population density	-0.000** (0.000)	-0.000* (0.000)	-0.001* (0.000)	-0.001 (0.000)	-0.000*** (0.000)	-0.000** (0.000)	-0.000** (0.000)	-0.000* (0.000)
Constant	0.488*** (0.119)	0.480*** (0.116)	0.072 (0.434)	0.046 (0.432)	0.329*** (0.081)	0.333*** (0.078)	0.352** (0.157)	0.354** (0.160)
Observations	4,349	4,349	4,349	4,349	4,349	4,349	4,349	4,349
R-squared	0.468	0.466	0.367	0.365	0.479	0.492	0.085	0.094
Number of countries	102	102	102	102	102	102	102	102
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A7: Effective tax rate and the governance dividend: fixed effects estimates including region x time dummies

	Electoral democracy		Vertical accountability		Egalitarian democracy		Rule of Law	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Effective tax rate on capital	0.191*** (0.069)		0.512** (0.230)		0.148*** (0.048)		0.114 (0.091)	
Effective tax rate on labour		0.158 (0.255)		0.282 (0.657)		0.377** (0.184)		0.276 (0.296)
GDP per capita (log)	-0.020 (0.018)	-0.016 (0.019)	-0.000 (0.068)	0.014 (0.069)	-0.013 (0.012)	-0.016 (0.013)	0.009 (0.020)	0.007 (0.022)
Population density	-0.000 (0.000)	-0.000 (0.000)	-0.001 (0.000)	-0.000 (0.000)	-0.000* (0.000)	-0.000 (0.000)	-0.000* (0.000)	-0.000* (0.000)
Constant	0.343*** (0.126)	0.330*** (0.128)	0.061 (0.471)	0.003 (0.478)	0.222*** (0.083)	0.249*** (0.085)	0.351*** (0.133)	0.371*** (0.142)
Observations	4,349	4,349	4,349	4,349	4,349	4,349	4,349	4,349
R-squared	0.530	0.523	0.418	0.413	0.541	0.537	0.179	0.178
Number of countries	102	102	102	102	102	102	102	102
Year x Time FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	NO	NO	NO	NO	NO	NO	NO	NO

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A8: Effective tax rate and the governance dividend: fixed effects estimates, excluding regions

	Electoral democracy		Vertical accountability		Egalitarian democracy		Rule of law	
	(1) Capital	(2) Labour	(3) Capital	(4) Labour	(5) Capital	(6) Labour	(7) Capital	(8) Labour
a) Excluding Africa	0.298** (0.129)		0.597 (0.390)		0.269*** (0.084)		0.258 (0.155)	
		0.126 (0.445)		-0.344 (1.312)		0.265 (0.274)		0.201 (0.500)
Observations	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290
R-squared	0.424	0.412	0.395	0.390	0.473	0.450	0.172	0.160
Number of countries	59	59	59	59	59	59	59	59
b) Excluding Asia	0.195*** (0.069)		0.499** (0.226)		0.152*** (0.054)		0.150 (0.102)	
		0.089 (0.325)		0.077 (0.890)		0.433* (0.234)		0.341 (0.312)
Observations	2,969	2,969	2,969	2,969	2,969	2,969	2,969	2,969
R-squared	0.563	0.556	0.430	0.426	0.572	0.571	0.112	0.109
Number of countries	61	61	61	61	61	61	61	61
c) Excluding Latin America & Caribbean	0.215*** (0.072)		0.545** (0.252)		0.152*** (0.050)		0.147 (0.090)	
		0.459 (0.330)		0.692 (0.926)		0.546** (0.219)		0.610* (0.341)
Observations	3,601	3,601	3,601	3,601	3,601	3,601	3,601	3,601
R-squared	0.432	0.425	0.320	0.315	0.432	0.439	0.058	0.066
Number of countries	87	87	87	87	87	87	87	87
Year	YES	YES	YES	YES	YES	YES	YES	YES
Country	YES	YES	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A9: First stage, IV fixed and random effects estimates

	Fixed effects		Random effects	
	Effective tax rate on capital	Effective tax rate on labour	Effective tax rate on capital	Effective tax rate on labour
	(1)	(2)	(3)	(4)
Share of capital x OECD countries' effective tax rate on capital	-1.554*** (0.264)		-1.552*** (0.248)	
Share of labour x neighbouring countries' effective tax rate on labour		0.345*** (0.110)		0.464*** (0.103)
GDP per capita (log)	0.060*** (0.013)	0.021*** (0.007)	0.058*** (0.012)	0.022*** (0.006)
Population density	0.0001 (0.0001)	-0.0001** (0.000)	0.0001 (0.000)	-0.0001*** (0.000)
Observations	4,349	3,962	4,349	3,962
Number of countries	102	94	102	94
Year FE	YES	YES	YES	YES
Country FE	YES	YES	NO	NO
Excl.-instruments F-statistics	34.79	9.876	39.14	20.19

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A10: IV fixed and random effects estimates: lagged share

	Electoral democracy		Vertical accountability		Egalitarian democracy		Rule of law	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
a) Fixed effects								
Effective tax rate on capital	0.195 (0.368)		0.439 (1.735)		0.280 (0.236)		0.555* (0.303)	
Effective tax rate on labour		1.674 (1.531)		-0.240 (5.024)		1.785* (1.004)		1.410 (1.772)
GDP per capita (log)	-0.048** (0.022)	-0.072* (0.037)	-0.064 (0.096)	-0.028 (0.127)	-0.033** (0.013)	-0.059** (0.026)	-0.009 (0.025)	-0.018 (0.049)
Population density	-0.000** (0.000)	-0.000 (0.000)	-0.001** (0.001)	-0.001 (0.001)	-0.000*** (0.000)	-0.000 (0.000)	-0.001** (0.000)	-0.000 (0.000)
Excl.-instruments F-statistics	17.42	10.25	17.42	10.25	17.42	10.25	17.42	10.25
b) Random effects								
Effective tax rate on capital	0.224 (0.371)		0.536 (1.687)		0.292 (0.241)		0.557* (0.305)	
Effective tax rate on labour		1.315 (0.915)		0.851 (2.472)		1.540** (0.718)		1.161 (1.343)
GDP per capita (log)	-0.040* (0.022)	-0.056** (0.027)	-0.029 (0.091)	-0.011 (0.089)	-0.030** (0.014)	-0.051** (0.021)	-0.008 (0.024)	-0.014 (0.042)
Population density	-0.000** (0.000)	-0.000 (0.000)	-0.001* (0.000)	-0.001 (0.000)	-0.000*** (0.000)	-0.000 (0.000)	-0.000** (0.000)	-0.000 (0.000)
Excl.-instruments F-statistics	19.96	21.76	19.96	21.76	19.96	21.76	19.96	21.76
Observations	4,258	3,884	4,258	3,884	4,258	3,884	4,258	3,884
Number of countries	102	94	102	94	102	94	102	94
Year FE	YES	YES	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A11: IV fixed and random effects estimates: 5-year averages of the share

	Electoral democracy		Vertical accountability		Egalitarian democracy		Rule of law	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
a) Fixed effects								
Effective tax rate on capital	0.211 (0.427)		0.503 (2.116)		0.284 (0.253)		0.542* (0.292)	
Effective tax rate on labour		2.107 (1.663)		0.367 (5.817)		2.060* (1.083)		2.009 (1.861)
GDP per capita (log)	-0.053* (0.028)	-0.084* (0.044)	-0.086 (0.127)	-0.052 (0.143)	-0.036** (0.016)	-0.066** (0.030)	-0.013 (0.027)	-0.030 (0.054)
Population density	-0.000** (0.000)	-0.000 (0.000)	-0.001* (0.001)	-0.001 (0.001)	-0.000*** (0.000)	-0.000 (0.000)	-0.001** (0.000)	-0.000 (0.000)
Excl.-instruments F-statistics	22.16	10.87	22.16	10.87	22.16	10.87	22.16	10.87
b) Random effects								
Effective tax rate on capital	0.239 (0.429)		0.595 (2.053)		0.298 (0.257)		0.542* (0.293)	
Effective tax rate on labour		1.490 (0.957)		1.101 (2.744)		1.667** (0.742)		1.539 (1.351)
GDP per capita (log)	-0.044* (0.027)	-0.061** (0.031)	-0.044 (0.117)	-0.023 (0.095)	-0.033** (0.016)	-0.055** (0.023)	-0.011 (0.027)	-0.021 (0.045)
Population density	-0.000** (0.000)	-0.000 (0.000)	-0.001 (0.000)	-0.001 (0.000)	-0.000*** (0.000)	-0.000 (0.000)	-0.000* (0.000)	-0.000 (0.000)
Excl.-instruments F-statistics	25.16	24.01	25.16	24.01	25.16	24.01	25.16	24.01
Observations	3,874	3,545	3,874	3,545	3,874	3,545	3,874	3,545
Number of countries	102	94	102	94	102	94	102	94
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1