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### **Does Democracy Affect Taxation and Government Spending? Evidence from Developing Countries**

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# Does Democracy Affect Taxation and Government Spending? Evidence from Developing Countries\*

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## Abstract

Focusing on three areas of the world (Asia, Latin America and New EU Members), which have recently experienced a democratic as well as economic transition, we explore the relation between political variables and tax revenue, public spending and their structure. We build a new dataset for the period 1990-2005 with socio-economic and political variables. We perform three sets of estimates: (i) cross-country pooled OLS regressions with region fixed effects, (ii) country fixed effects regressions and (iii) region specific regressions with country fixed effects. While the first model delivers some correlations between political variables and tax items, when controlling for country fixed effects we find that tax revenue and tax composition, except for trade and property taxes, are not significantly correlated with indices of the strength of democratic institutions and of the protection of civil liberties. A similar result applies to public spending, with the only exceptions of total outlays and defense expenditure. Moreover, especially regarding the tax structure, the sign and significance of the relevant correlations appear to be region-specific. Overall, our findings cast some doubt on the exact public policy channels through which political institutions affect economic development.

**Keywords:** comprehensive dataset on taxation and public expenditure; civil liberties, tax structure, public spending composition

**JEL Classification:** H20, O53, P16, P35, P50

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# 1 Introduction

Taxation and public spending are major issues in economics and politics. Tax design and the implementation of tax reforms and government spending programmes are at the core of economic policy. They are also among the most debated issues in the political arena. In modern democracies tax and public spending reforms need the support of voters in order to be implemented, while at the same time policymakers try to design public policies to please as many voters as possible. The issues of taxation and public expenditure can attract and shift votes, in particular those of non-ideological citizens (possibly a large part of the electorate) who decide which party to vote by computing the advantages –in some cases, mainly the fiscal ones– that they could enjoy from this party with respect to the opponents (Hettich and Winer, 1999; Profeta, 2007). In traditionally non democratic countries the process underlying public policies decisions is much more difficult and less clear to predict. Interest groups that are economically and politically powerful usually play a dominant role.

When these countries experience a democratic transition, it may be the case that the influences of those interest groups remain strong and interact with voters' preferences in determining public policies outcomes in a more pervasive way than in mature democracies. The democratic transition is also typically related to the economic one, as emphasized by a recent –and growing– literature (see, among the others, Giavazzi and Tabellini, 2005; Persson and Tabellini, 2007; Papaioannou and Siourounis, 2008). This interplay between economic and political factors is particularly crucial to understand public policies and reforms, mainly on the side of redistribution through taxation and public spending (Acemoglu and Robinson, 2006; Boix, 2003; Hausken *et al.*, 2004; Martin and Plumper, 2003).<sup>1</sup> As a consequence, countries which have recently experienced a democratic and economic transition are an ideal laboratory for the study of these relationships.

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<sup>1</sup>See the next section for a discussion of the related literature.

The existing literature has devoted little attention to the empirical analysis of the link between democratization and the structure - rather than the total amount - of taxation and government spending. However, since different taxes and public expenditures likely have a different impact on various economic and administrative outcomes, such as redistribution and tax compliance, the political economy analysis of taxation and public outlays should be particularly focused on the composition aspect. Thus, in order to explore the mechanisms running from political variables to the institutional design of public policies, we focus on the structure of taxation and government spending. To this respect, our analysis is similar to Aidt *et al.* (2006) and Aidt and Jensen (2009), though we provide a more detailed disaggregation. Yet considering together taxes and expenditure we may explore whether they react differently to the democratization process. Also, we enrich previous studies by using alternative measures of the strength of democratic institutions and civil liberties protection. Finally, from a methodological viewpoint we go beyond simple cross-sectional analyses –as often found in the previous literature<sup>2</sup>– by studying empirical models with country fixed effects, i.e. we control for time-invariant features of each country in the sample.

To this purpose, we build a new data-set for a sample of developing and emerging countries of the following three areas of the world: Asia, Latin America and New EU Members. Our dataset spans the 1990-2005 period. Regarding tax variables, we use IMF data for the Asian countries, CEPAL for Latin American ones and EUROSTAT for New EU Members, while data on public expenditure come from IMF for all the countries in our sample. In addition to the main macroeconomic indicators and several socio-economic and demographic variables, we collect data on political indicators. In particular we refer to a measure of the strength of democratic institutions and to an index of civil liberties protection from the PolityIV dataset and Freedom House respectively, two well known sources often used in political

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<sup>2</sup>Notable exceptions are again Aidt *et al.* (2006) and Aidt and Jensen (2009) which focus on Western European countries.

economy studies. Our dataset is a first attempt at collecting in a comprehensive and homogeneous fashion all the essential data for the study of taxation and public expenditure in these areas of the world. In fact, especially fiscal data for these countries are typically sparse across different sources, are not directly available for researchers, and they are often not homogeneous, thus making it difficult to compare and analyse them jointly.

We investigate the link between political variables and the structure of taxation and public spending using three different empirical models: (i) cross-country pooled OLS regressions with region fixed effects, (ii) country fixed effects regressions and (iii) region specific regressions with country fixed effects.

We start from taxation. According to the first model the protection of civil liberties matters for the share of personal income taxes (+), corporate income taxes (-) and indirect taxes (+), while the strength of democratic institutions is positively related to a higher level of trade taxes. This could be justified by a higher degree of economic openness in more democratic countries. We then control for country fixed effects. Such an empirical strategy should be less prone to omitted variable issues, to the extent that relevant omitted factors are country-specific and time-invariant. When adopting this more demanding empirical model we find a negative and significant relationship between the protection of civil liberties and property taxes. In other words, countries which do not sufficiently guarantee individual liberties rely more heavily on taxes usually requiring low voluntary tax compliance by taxpayers, such as property taxes. All the other relationships between political variables and tax sources are instead no longer significant with the only exception of the one between the democracy index and the amount of trade taxes. This general lack of significant correlations within a country fixed effects approach might be due to the presence of heterogeneity across world areas. Indeed, in New EU Member States we find no significant relationship between political variables and tax structure.<sup>3</sup> On

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<sup>3</sup>Actually there is a mildly significant and negative correlation between the democracy index and direct taxation.

the other hand, in Latin America, the composition of the tax system is related to both the civil liberties index and the democracy score. In particular, we argue that the generally low level of political representation that still characterizes these democratic countries can help to explain the negative relationship between the strength of democratic institutions and the extent of personal taxation. Finally, in Asian countries the democracy index plays a much more relevant role, as it is negatively and significantly correlated with tax revenue, indirect taxation and social security contributions.<sup>4</sup> We try to explain these relationships referring to the specificity of this world area and its “hard path” of (economic and political) development.

When we turn to the other side of the public budget, i.e. expenditure, in the pooled OLS empirical model we find a positive and significant correlation between the democracy index and education expenditure. A similar relationship, albeit less robustly so, does hold between the democracy indicator and both total government expenditure and public order expenditure. All these findings are in line with the classical predictions of the median voter theorem. Moreover, and interestingly, there is an inverted U-shaped relationship between the democracy index and defense expenditure. Similarly to what found with tax items, many of these correlations are no longer significant when including country fixed effects. When separately considering the different world areas in our sample, political variables appear to be here especially significant in New EU Members. In particular, the democracy index is negatively and significantly correlated with health, education and public order expenditure, while civil liberties protection is positively and significantly associated with education expenditure. On the other hand, and differently from what we find for taxation, in Latin America and Asia there is no significant relation between those political variables and the different expenditure items.<sup>5</sup> Thus, the joint inspection of the two sides of the public budget, taxation and expenditure, delivers interesting,

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<sup>4</sup>We also find a positive and significant correlation between the democracy index and trade taxes in Asian countries.

<sup>5</sup>The only exception is a mildly significant and positive relation between democracy and total government expenditure in Asia.

not obvious results.

Similarly exploiting a country fixed effects design, Papaioannou and Siourounis (2008) find that successful democratic transitions are subsequently associated with a higher growth rate of real per capita income.<sup>6</sup> While our research focus is different, our findings cast some doubt on the exact public policy mechanisms through which political institutions at large might affect economic performance.

The paper is organized as follows: the next section contains an overview of the related literature, section 3 provides a description of the data, while section 4 presents our econometric results proper. Finally, section 5 concludes.

## 2 Related literature

A large and growing literature argues that democratic and economic transitions may be strictly related. Although it is difficult to establish the true direction of a causal relationship, there may be positive feedback effects between economic and political reforms (Giavazzi and Tabellini, 2005). In many areas of the world, the economic transition goes hand in hand with a political transition towards a modern concept and organization of democracy. On one hand a higher level of economic well-being –which entails higher rates of literacy, education, urbanization, and also a larger middle class– would be necessary, though not sufficient, for democracy to be widely supported and then introduced (Lipset, 1959; Boix, 2003; Acemoglu and Robinson, 2006). On the other hand, stable democracies are likely to promote economic liberalizations and reforms, which in turn would have a positive effect on the overall economic performance (Persson and Tabellini, 2007). Recent contributions have emphasized this two-way relation between democratic regimes and economic outcomes, with a particular focus on growth as the major goal of economic policies.<sup>7</sup>

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<sup>6</sup>In fact they point out that the effects of democratic transitions on economic growth do not go through sound fiscal policies. See Table 3 in their paper and the corresponding discussion on page 1536.

<sup>7</sup>See, among the others, Persson and Tabellini (2007), Papaioannou and Siourounis (2008), Rodrik and Wacziarg (2005), and the criticisms of Barro (1996) and Fernandez and Rodrik (1991).

Other studies have considered the relation between democracy and public policies, and, in particular, between democracy and redistribution. According to Acemoglu and Robinson (2006) and Boix (2003), democracy would lead to redistribution from the rich (the elites) to the poor (the citizens). This redistribution can take place both through an enlarged welfare state and through a re-organized tax system, that more heavily relies on direct than on indirect taxation. In fact, democratization allows low-income groups to take part in the political process and, as a consequence, should be conducive to policies that favour these groups –such as those for the unemployed, sick, poor and the elderly– and would thus tend to promote equality. Instead, under a non-democratic regime the size of the public sector and the amount of redistributive spending should be small, since a substantial part of the electorate is excluded from the decision-making process. The classical predictions of the median voter model apply: taxes (and government spending) are expected to increase under a democratic regime, to satisfy the needs of the electorate.

However, when moving to empirical tests of these theories, there are no uncontroversial results. Boix (2003) suggests that a significant share of the public sector actually depends on the political (democratic) regime in place, which also interacts with the distribution of income, citizens' preferences and economic conditions. Along these lines, Aidt *et al.* (2006) find a significant relation between the extension of the voting franchise and the size of government. On the contrary, Mulligan *et al.* (2004) show that none of the different measures of public spending that they consider (government consumption, education spending and social spending, as a percentage of GDP) is statistically different in democracies and non democracies.<sup>8</sup> Martin and Plümper (2003) find a U-shaped relationship between the level of democracy and the level of public spending. They argue that for low levels of democracy public spending is high to meet the requests of rents by the elites, while for high levels of democracy public spending is high due to popular demand of public goods.

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<sup>8</sup>They also find that democracies are less likely to erect political entry barriers (such as torture, death penalty, press censorship, regulation of religion and maintaining an army, see Tullock, 1987) than non democracies.

For medium levels of democracy none of these pressures is active and government spending is at its minimum. On the other hand, the relation between indicators of democracy and the structure of taxation has so far received less attention, and in this case too the empirical literature has not reached an overall consensus on the sign of these links. Mulligan *et al.* (2004) find that democracies have flatter personal income tax structures and a generally lower tax revenue/GDP than non-democracies. Wintrobe (1990) suggests that democratic countries, since they do not use repressive measures as governing instruments, have to design tax systems that induce more voluntary tax compliance (see also de Juan *et al.*, 1994; Pommerhne and Weck-Hannemann, 1996; Alm, 1996; Feld and Frey, 2002). Mature democracies thus rely more on revenue sources such as self-assessed personal income taxation. On the other hand, more repressive governments that cannot rely on tax sources requiring a certain level of voluntary cooperation move toward corporate taxes or trade taxes. This is also in line with the classical prediction of Musgrave (1969) that more autocratic countries, which directly control the economy and in particular the wage level, rely more on corporate rather than on individual taxes, as compared to more democratic ones. A recent work by Kenny and Winer (2006), explicitly devoted to the analysis of the structure of taxation in a large sample of democratic and non-democratic countries, also shows that a stronger protection of political rights and civil liberties leads to a more intensive use of personal income taxation. According to the authors, the reason for this is that personal income taxes are more complicated and must rely on voluntary compliance, rather than because of redistributive concerns. In fact, repression will reduce citizens' willingness to cooperate in collecting tax revenue; as a consequence, property and trade taxes –as well as seigniorage and profits from state owned enterprises– end up being the main revenue sources in non-democratic countries. Profeta and Scabrosetti (2010) extend the analysis of Kenny and Winer (2006) to a broader set of developing countries in the period 1990-2004. Using pooled OLS regressions, they find that democracy and civil rights protection are positively correlated with the level of tax revenue and the

amount of direct taxes. At the same time, Aidt and Jensen (2009) show that in a sample of western European countries in the period 1860-1938 political competition increases total revenue and the share of direct taxes, while reducing the share of market taxes.

Finally, the theoretical and empirical literatures have also emphasized that some fundamental economic variables, mainly GDP, may play a crucial role in determining the level of taxation and public spending, as well as their composition (Hinrichs, 1966; Tanzi, 1992). Musgrave (1969) argues that the lack of availability of “tax handles” might limit revenue collection at low levels of income. Moreover, according to Wagner’s law, economic development is associated with an increased demand for public expenditure (Tanzi, 1987). Not only economic development widens the tax base, but it also improves administrative capacity to levy and collect taxes (Chelliah, 1971). All these mechanisms should thus result in a positive relationship between per worker GDP and tax revenue. Additional socio-economic variables that may have an impact on the level and the composition of both taxation and public outlays are: the level of government debt, the share of agriculture on GDP, trade openness, the female labour force participation rate, the level of literacy and the percentage of elderly people on the total population (Tanzi, 1992; Burgess and Stern, 1993; Ghura, 1998; Rodrik, 1998; Gupta *et al.*, 2004).<sup>9</sup> As a consequence, all these socio-economic variables must be taken into account when studying the relation between political variables, the level of taxation and public spending, as well as their composition.

### 3 Data description

Since we are interested in the analysis of the relation between political variables, taxation and government spending we should first of all clarify how we can measure democracy. There is in fact a large debate among political scientists on the exact definition of what constitutes a democracy. The definition proposed by Schumpeter (1942) is generally accepted as a starting reference point: “[...] democracy is the

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<sup>9</sup>Again, these variables might work as a proxy for the availability of the various revenue sources.

institutional arrangement for arriving at political decisions in which individuals acquire the power to decide by means of a competitive struggle for the people's vote". This definition suggests that democracy is identified by specific institutions, which guarantee free and fair elections, the accountability of politicians to the electorate and free entry in politics. However, how to measure these institutional conditions is neither obvious nor clear. Scholars in political scientists are divided between those who favour a simple dichotomous classification, i.e. a country is either democratic or not (Przeworski *et al.*, 2000), and those who develop a continuous measure of democracy based on a specific index. It is out of our scope to solve this controversy. While we consider the dichotomous definition useful, especially when a transition should be analysed, in this paper we will mainly refer to a continuous measure of democracy, which allows us to capture more features of a political regime: the POLITY2 index, as found in the Polity IV dataset.

According to the Polity IV dataset (2007), democracy reflects three essential elements: (i) the presence of institutions and procedures through which citizens can express preferences about alternative policies and leaders; (ii) the existence of institutionalized constraints on the power of the executive; and (iii) the guarantee of civil liberties to all citizens (although they are not actually measured). The authors of the Polity IV dataset thus construct a ten-point democracy scale by coding the competitiveness of political participation (1-3); the competitiveness of executive recruitment (1-2); the openness of executive recruitment (1), and the constraints on the chief executive (1-4). Autocracy is measured by negative versions of the same indices. These two scales are combined into a single democracy-autocracy score (POLITY2 index) varying from -10 (strong autocracy) to +10 (strong democracy). A higher level of the POLITY2 indicator can thus be alternatively read as a higher level of democracy, the level of autocracy being equal; or a lower level of autocracy, the level of democracy being equal.

Our sample of countries covers three different areas of the world: Asia, Latin

America and New EU Members.<sup>10</sup> The history, background, institutional, economic and social characteristics of each area are very different, but the time trends in the POLITY2 variable appear very similar. There is a general increasing trend towards democracy in the period under consideration, as shown in Figure 1a-1d.

[FIGURE 1a, 1b, 1c, 1d HERE]

In particular, Figure 1a shows the evolution of democracy in the three areas at the centre of our analysis. For each year we compute the average POLITY2 score for all countries belonging to each of those three areas. In Figure 1b, 1c and 1d we show instead the evolution of the POLITY2 score for a selected sample of countries in each world area.

The second source of political variables is Freedom House, which includes two attributes in its definition of democracy: political rights and civil liberties (not measured in the POLITY2 index). The political rights index proposed by Freedom House is conceptually close to the the POLITY2 score. Hence these two indices –political rights and POLITY2– appear to measure the same object. However, Munck and Verkuilen (2002) argue that the POLITY2 index is to be preferred to the political rights indicator as a measure of democratic institutions, mainly because it is more transparent in the way it measures and aggregates relevant dimensions of the underlying concept of democracy.<sup>11</sup> As a consequence, we rely on the POLITY2 index, and use the political rights index only for checking the robustness of our

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<sup>10</sup>In particular, our sample of countries for the Asian region includes China, India, Indonesia, the Republic of Korea, Malaysia, Pakistan, Philippines, Singapore, Sri Lanka, Thailand and Vietnam. Given the magnitude of the Asian continent, these countries are well representative of its three main regions: Far East, South and East and Indian sub-continent. For the Latin American region we consider Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela. These countries are a representative sample of the Latin American region and they are all catalogued in the CEPAL, which is our source of fiscal data for this region. Finally, we include all countries that joined the European Union in 2004 (with the exception of Malta, due to lack of political data), which represent more mature, though quite recent, democracies.

<sup>11</sup>Notice that the choice of the index of political regime is a complex one. Some papers also refer to the Vanhanen index of democracy (see Aidt and Eterovic, 2010). Yet the two measures that we draw from PolityIV dataset and Freedom House feature the aspects of changes in political regimes that we consider important for our study.

results. The civil liberties index is instead a measure of the degree of freedom of expression, assembly, association and religion guaranteed to individuals. It is measured on a one-to-seven scale. In order to make it compatible with the POLITY2 variable, we invert it, so that a value of 1 represents the lowest degree of civil liberties, and 7 the highest. Hence, countries with a rating of 7 are generally characterized by an established and equitable rule of law with free economic activity and citizens enjoying a full range of civil liberties. On the other side of the spectrum, a rating of 1 indicates virtually no freedom and real restrictions on liberty caused by non-governmental terror.<sup>12</sup>

Differently from the political rights index, the civil liberties index is meant to measure the broader set of “liberties” guaranteed to individuals within their polity. From this point of view, the concept of civil liberties does not necessarily overlap with the one of democratic institutions, and could play an independent role as an explanatory variable for the composition of both tax revenue and government spending. In fact, the difference between positive and negative liberty has to be taken into account. According to Berlin (1969) negative freedom is related to the degree to which individuals or groups suffer some kind of interference from external bodies. In other words this concept of liberty refers to the absence of obstacles, barriers or constraints to individual actions. On the contrary, positive freedom, in its political form, is the liberty that can be achieved through participation in the political process. As a consequence, a democratic country is free to the extent that its citizens actively participate in the decision making. From this point of view,

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<sup>12</sup>To determine each country’s civil liberties, researchers answer a series of survey questions classified in the following categories. The first category includes freedom of expression and belief, and would measure freedom of the press, religious freedom, and freedom of cultural expression. The second category (association and organizational rights) would evaluate freedom of assembly and organization, the ability to create trade unions and other free private organizations. The third category (rule of law) is focused on the presence of an independent judiciary, the degree of protection from political terror, and equal protection under the law. Finally, the fourth category (personal autonomy and individual rights) includes free private discussions, property rights, personal autonomy, and personal freedoms. Notice that Freedom House distinguishes between constitutional guarantees of rights, i.e. the formal aspect thereof, and the degree with which those rights are *de facto* protected. Therefore, the real-world rights and freedoms enjoyed by individuals are influenced by the interplay of a variety of actors, both governmental and non-governmental.

the civil liberties index can thus be considered as a proxy for Berlin's concept of negative freedom, while the POLITY2 indicator is associated with the one of positive freedom.

Similarly to what done before with the POLITY2 indicator, Figure 2a shows the evolution of the civil liberties measure (CIV) in the three areas under consideration. In Figures 2b, 2c and 2d we show instead the evolution of the same score for a selected sample of countries in each area.

[FIGURE 2a, 2b, 2c, 2d HERE]

Data on taxes are collected from different sources: IMF for Asian, CEPAL for Latin American and EUROSTAT for New EU Member States. We collect data on tax revenue/GDP, but also on its structure, that is personal and corporate income taxes, property and trade taxes, social security contributions as a percentage of GDP. Moreover, by reclassifying specific tax items, we also attempt at homogenising the aggregated categories of direct and indirect taxes across different data sources (see the Data Appendix for additional details).

Data on public expenditure come from IMF. In this case too we collect data on total government outlays/GDP, but also on its composition, that is general public services, defense, health, education, social protection and public order expenditure as a percentage of GDP (see the Data Appendix for additional details).

In the Data Appendix we also describe the socio-economic and demographic control variables used in the analysis, i.e. GDP per worker, the sum of imports and exports on GDP (trade openness), the government debt on GDP, the share of agriculture on GDP, the female labour force participation rate, the secondary school enrollment and the share of elderly people on total population.

Table 1 presents the summary statistics of all relevant variables for the 1990-2005 period.

[TABLE 1 HERE]

## 4 Results

We estimate three different empirical models: the first one is a pooled OLS regression described by the following equation:

$$Y_{it} = \beta_t + \gamma POLITY2_{it} + \delta CIV_{it} + controls_{it} + LatinAmerica_i + Asia_i + \epsilon_{it} \quad (1)$$

where  $Y_{it}$  is the tax revenue or total expenditure (or a specific tax/expenditure source) over GDP collected in country  $i$  in year  $t$ ,  $POLITY2_{it}$  is the measure of democracy according to the Polity IV dataset (2007) in country  $i$  in year  $t$ ,  $CIV_{it}$  is the level of the (inverted) Freedom House Index of civil liberties protection in country  $i$  in year  $t$ ,  $\beta_t$  is a year fixed effect,  $controls_{it}$  are socio-economic control variables,  $LatinAmerica_i$  and  $Asia_i$  are dummy variables for Latin American and Asian countries respectively, and  $\epsilon_{it}$  is the error term. New EU Members are our excluded category of countries.

In the second model we include country fixed effects ( $\alpha_i$ ), i.e. we estimate the following equation:

$$Y_{it} = \alpha_i + \beta_t + \gamma POLITY2_{it} + \delta CIV_{it} + controls_{it} + \epsilon_{it} \quad (2)$$

Since in this model we include country and year fixed effects, our estimates exploit the fact that different countries have or have not experienced a change in the level of civil liberties protection or in the strength of democratic institutions. Here, our econometric approach is close to Papaioannou and Siourounis (2008), since we similarly exploit the within-country variation in measures of democracy and civil liberties and correlate it with the dependent variable of interest. Of course, the crucial difference is that they aim at estimating the impact of democracy on economic growth, while we focus on intermediate outcomes like tax revenue, public expenditure and their composition.

Finally, our third model corresponds to the previous one, but we estimate a separate regression for each of the three world areas under consideration.

Our results on taxation are shown in Tables 2, 3 and 4, while the ones on government spending are shown in Tables 5, 6 and 7. In a parallel fashion, Tables 2 and 5 refer to our first empirical model (cross-country pooled OLS regressions with region fixed effects), Tables 3 and 6 to the second (country fixed effects regressions), while Tables 4 and 7 to the last one (region specific regressions with country fixed effects). Notice that in each table we exclude Indonesia, which appears to be an influential outlier in the analysis. This is the country of our sample that experienced the largest (positive) change in the level of democracy, following the demise of the Suharto regime.

Tables 2 and 3 and Tables 5 and 6 are organized in the following way: the different columns are devoted to different tax sources or public spending items, with the first column respectively focusing on tax revenue over GDP and total government expenditure over GDP. In each column we stack the regression output by enlarging step by step the set of controls. In the first specification we simply control for GDP per worker, while in the second one –following Habibi (1994), Martin and Plümper (2003) and Hausken *et al.* (2004)– we add the square of the POLITY2 index. This is meant to identify a possible non-linear relation between political variables and both taxation and public spending. Finally in the last and most demanding specification we add as controls the trade openness index, the government debt over GDP, the share of agriculture over GDP, the female labor force participation and the share of old population. On the other hand, the different columns of Tables 4 and 7 show for each tax or spending item the different findings for each of the three areas we investigate. Since the error term might be serially correlated within countries (even after controlling for country fixed effects) and thus wrongly inflate the precision of our estimates, for all specifications we cluster the standard errors at the country level (see Bertrand *et al.*, 2004). The corresponding t-statistic is displayed below each coefficient.

#### **4.1 Taxation**

[TABLES 2, 3 and 4 HERE]

We start from our results on taxation. As shown in Table 2, we do not find any significant link between tax revenue and both civil liberties protection and democratic institutions.<sup>13</sup> Looking at the structure of taxation, in the case of personal income tax there is a positive and significant relation with civil liberties protection, only mildly so in the first specification. Corporate taxation is negatively and significantly correlated with civil liberties at least in the first and second specification. These first results seem to support the idea that countries which guarantee more civil liberties (i.e. a higher degree of negative freedom) can require the taxpayers to pay back higher personal income taxes. On the contrary, corporate taxes are typically more used in autocracies which tend not to protect individual liberties.<sup>14</sup> Given the opposite signs in the relationship between civil liberties and personal and corporate income taxation respectively, it is not surprising that the correlation between civil liberties and direct taxes is not statistically significant at ordinary confidence levels. Moreover, we find a positive and significant correlation between indirect taxes and the civil liberties index. This could be explained by the redistributive -although modest- nature of indirect taxes due for instance to higher tax rates for goods typically consumed by the high income groups. Regarding the democracy index (i.e the level of positive freedom), the results are not unambiguous. If we look at the personal income taxes, there are some signs of an inverted U-shaped relationship (second and third specification) with the POLITY2 index, while we find no statistically significant relationship with the democracy indicator and the share of corporate income taxes. Finally, there is a positive and significant linear relationship with POLITY2 index and social security contributions or trade taxes respectively in the first and third specification. The relation between more democratic institutions and a higher share of social security contributions is in line with higher redistributive welfare

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<sup>13</sup>The only exception is a mild positive linear relation between the democracy index (POLITY2 index) and tax revenue in the third specification (the one with the largest set of controls).

<sup>14</sup>However, this traditional interpretation turns out not to be robust to our next econometric model.

states (through the pension system) in democracies than in autocracies, while the positive relation between taxes on trade operations and the strength of democratic institutions can be explained by the greater economic openness of democracies with respect to autocracies.<sup>15</sup>

The joint inspection of the region dummies allows us to conclude that overall tax revenue, personal income taxation, direct taxation and social security contributions are significantly larger in the excluded area of New EU Countries. This is consistent with previous findings by Profeta and Scabrosetti (2010). Focusing on the other controls, it is interesting to notice that indirect taxation is significantly lower when GDP per worker is higher, and that a higher share of elderly people in the population is positively and significantly related with the level of social security contributions. In fact in these countries the ageing process represents an important challenge which would lead to enlarge the pension system, a result that would be easier to achieve especially in presence of democratic institutions.

In Table 3, we move forward from a pooled OLS specification with region-specific fixed effects to a fully fledged specification with country fixed effects. From this point of view, we are solely exploiting the within country correlation in tax sources and our political variables. Most of the significant results displayed in Table 2 do not survive this more demanding empirical test. In other words, our fixed effects analysis shows the lack of any significant and robust relationship between both the level and structure of taxation and the degree of protection of civil and political rights.<sup>16</sup> So, even if these specific countries experienced some non-negligible changes in the strength of their democratic institutions and –less strongly so– in their level of civil liberties protection, those changes are generally not associated with any significant variation in the structure of taxation. Two exceptions are remarkable: (i) the positive and

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<sup>15</sup>Notice also that in the third specification there is a mildly negative relationship between indirect taxes and the democracy index squared. Moreover, only in the second specification, there is a weakly positive relationship between property taxes and POLITY2 squared.

<sup>16</sup>Further results show that this lack of a significant relationship holds when including the civil liberties or the democracy index alone. The lack of a significant correlation between democracy and social security contributions is in line with the predictions in Mulligan *et al.* (2004).

mildly significant relationship between trade taxes and the democracy index (only in the first and second specification) and (ii) a negative and robust correlation between civil liberties protection and property taxation (again in the first and second specification).<sup>17</sup> Regarding this last result, following previous studies such as Wintrobe (1990) and Kenny and Winer (2006), one could argue that property taxes do not need (or need less) tax compliance by taxpayers. This type of taxation does not require individual's considerations, such as tax allowances, deductions, exemptions, special cases, and is thus easier to be relied on in a context where civil liberties and individual freedom are not a priority. Taxes on income are instead typically more costly to collect (see Aidt and Jensen, 2009). Referring to the distinction between positive and negative liberty discussed above, it thus seems that only negative freedom is related to the share of property taxes in the structure of the tax system.

This lack of significant relation obtained in our fixed effects estimates needs further investigation. One could argue that countries belonging to different regions, albeit displaying some common traits in their political and economic development paths, might be characterised by a substantial degree of heterogeneity in the relationship between political variables and their tax structure. This justifies the idea of replicating our fixed effects design with region-specific regressions. The output of this exercise is displayed in Table 4, whereas we focus on the simplest specification of Table 3, i.e. we simply control for the civil liberties and the democracy indices and GDP per worker. In New EU Countries, overall we find no significant correlation between tax structure and political variables.<sup>18</sup> In Latin America total tax revenue is positively and significantly correlated with civil liberties protection. This is also the case for corporate income taxes, direct taxes and trade taxes. On the other hand, a somewhat puzzling result is that personal income taxes are negatively and significantly correlated with the democracy score, i.e. when their political institutions become more democratic, Latin American countries appear to rely less on

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<sup>17</sup>Notice that we do not have data on property taxes for New EU members countries.

<sup>18</sup>We only find a mildly significant and negative correlation between the democracy index and direct taxation.

personal taxation. A possible explanation to this could refer to the quality of Latin American democracies, that generally suffer from low levels of political representation (i.e. low level of positive freedom), given that vested interests, lobbying and interest groups still play a crucial role in determining public policies.<sup>19</sup> In the case of Asian countries we do not find any significant correlation between tax structure and civil liberties protection. However, there is a significant and positive association between democracy and trade taxes and a negative and significant correlation of the democracy index with overall tax revenue, indirect taxes and social security contributions. To interpret these last results, notice that Asia (especially China) is following a “hard path” of development where a notable economic liberalization is not associated with democratization (see Giavazzi and Tabellini, 2005; Cacciatore *et al.*, 2006). This may explain why the increase in taxes is not related to a parallel increase in civil liberties protection or to democratic institutions (where the relation is even negative).

To sum up, our analysis shows that the relations between political variables and the level and the structure of taxation found in pooled cross-country regressions do not typically survive to the introduction of country fixed effects. When studying the within country variation, only a negative relationship between civil liberties and property taxes and a positive but mildly significant relation between the democracy index and trade taxes appear, which could be due to voluntary tax compliance and economic openness issues respectively. There is also a relevant amount of heterogeneity across different world areas. Countries belonging to each area have specific features which are difficult to capture when studying the entire sample of countries. As a consequence, regressions restricted to each area are more informative on the true relationships between our political variables and the structure of taxation. We find not obvious results. Civil liberties appear to be crucial for the level of taxation in Latin American countries, while democracy negatively influences total taxes (as well as indirect taxes and social security contributions) in Asia. Finally, in New EU

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<sup>19</sup>See Profeta and Scabrosetti (2008).

Member Countries, which are already quite mature democracies, political variables do not seem to play any role in determining the structure of the taxation system.

## 4.2 Expenditure

We now get on to our results on the expenditure side.

[TABLES 5, 6 and 7 HERE]

In a parallel fashion with what done with taxation, we first investigate the link between political variables and public expenditure within a pooled OLS framework, with region fixed effects (Table 5). First of all, the protection of civil liberties is not related to the level and the composition of government spending.<sup>20</sup> Regarding the democracy index, the most robust result we find is a positive and significant correlation with the amount of education spending. A similar relationship, albeit less robustly so, connects democracy and both total government expenditure and public order expenditure. All these findings are completely in line with the predictions of the median voter theorem, according to which in more democratic societies the pivotal voter might be poorer and would demand more public expenditure, in this case especially for education.

However, other interesting relationships emerge, which do not have an obvious median-voter interpretation. First, there are some signs of an inverted U-shaped relationship between the strength of democratic institutions and the amount of defense expenditure. Thus, starting from an autocratic regime, defense spending initially increases with democracy, but –when the country in question has reached some minimal level of democracy– further increases in the POLITY2 index are correlated with a *decrease* in the overall amount of defense spending.<sup>21</sup> Second, expenditure on general public services is not significantly related with the strength of democratic institutions, and also in the case of health (column [4]) and social protection

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<sup>20</sup>Only in the first specification we find a negative but weakly significant correlation between civil liberties and defense expenditure.

<sup>21</sup>Moreover, it is interesting to notice that in our most demanding specification a country that is more open to trade is on average spending significantly less on defense.

expenditure (column [6]) we do not find any robust correlation with the POLITY2 index. The only exception to this is a positive and significant relationship of health expenditure with the square of the democracy score in the third specification.

Looking at region fixed effects, total government expenditure and health expenditure are generally higher in New EU Member than in Latin American and Asian countries. The same happens for education and social protection spending, but respectively only in the third and in the first two specifications. Furthermore, general public services expenditure is lower in Latin American than in New EU Countries, while defense and public order expenditure are respectively higher and lower in Asian than in New EU Member States.

In Table 6, as before, we check our results on public spending with a more demanding specification featuring country fixed effects. While our previous result regarding the positive link between education expenditure and democracy no longer holds here, we still find a positive and significant correlation between the democracy score and the total amount of government expenditure (column [1]), as well as an inverted U-shaped relationship between defense expenditure and the strength of democratic institutions (i.e the degree of positive freedom).

Finally, we investigate to what extent our previous findings are robust to distinguishing across the different regions in our sample. The output of this exercise is shown in Table 7, which exactly replicates the format of Table 4. In this case, political variables are especially significant in New EU Countries. In particular, the democracy index is negatively and significantly correlated with health, education and public order expenditure, while civil liberties protection is positively and significantly associated with education expenditure. To reconcile this result with what we find on the taxation side in section 4.1 -in New EU Member Countries political variables do not show any correlation with the tax structure, a special feature of this area- notice that, although socialist countries have reacted differently to the transition, a common feature of many New EU Members has been the dramatic decrease of government size during this period. As Tanzi and Tsibouris (2000) emphasize,

public expenditures have generally dropped a lot –with a parallel continuous increase of the private sector–, while fiscal policies and a broad reorganization of tax revenue was, in many cases, less sharp.

On the other hand, and differently from what we find regarding taxation, in Latin America and Asia there is no significant relation between those political variables and the different expenditure items.<sup>22</sup> This suggests that political variables do matter for the composition of public expenditure only when democracy reaches stability, maturity and a better quality level. However the sign of the relationships is not so obvious and, again, it confirms the prediction of the median voter’s model only when we look at the protection of civil liberties, a proxy for Berlin’s concept of negative freedom, and education in New EU Countries.<sup>23</sup>

## 5 Conclusions

Our analysis is a first attempt to explore whether political regimes may contribute to explain within country changes in tax revenue, government spending and their composition in developing countries. For this purpose, we have gathered a new dataset for developing and emerging countries of three areas of the world –Asia, Latin America and New EU Members–, where most countries have recently experienced a democratic and economic transition.

We have enriched previous analyses on developing countries in several ways: (i) we focused on different political variables; (ii) we detailed the structure of both sides of the public budget, taxation and government expenditures and (iii) we provided different econometric specifications.

Several relationships between political variables and tax sources are only signifi-

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<sup>22</sup>The only expectation is a mildly significant and positive relation between democracy and total government expenditure in Asia.

<sup>23</sup>This must be put in contrast with Habibi (1994) who –using the Gastil’s index and adopting a cross-country approach– finds that more democratic countries spend less on defense and are characterized by a higher share of social expenditures (health, education and social security) in the budget. Moreover, the author find a non linear relation between the political index and total expenditure on GDP.

cant when we run pooled OLS regressions, while they are no longer significant when adopting a more demanding specification with country fixed effects. The only exceptions concern a positive and mildly significant correlation between the strength of democratic institutions and the share of trade taxes and a negative and significant relationship between protection of civil liberties and property taxes. This last one might be explained by the fact that these taxes need much less voluntary compliance by citizens, which is in turn triggered by a greater confidence in the lack of interference by the government, i.e. a higher degree of negative freedom. We argue that this general lack of significant correlations within a country fixed effects specification might be due to the presence of heterogeneity across world areas. Indeed, in New EU Countries, that can be considered quite mature democracies with respect to the Asian and Latin American ones, we find no significant relationship between political variables and tax structure. On the other hand, in Latin America civil rights protection is positively and significantly correlated with overall tax revenue, direct taxes (especially corporate taxation) and trade taxes. Again regarding Latin America, the somewhat puzzling result on the negative relationship between the democracy score and the extent of personal taxation leads us to consider the quality of these democracies in which political representation is still very low. Finally, in Asian countries the democracy index is negatively and significantly correlated with tax revenue, indirect taxation and social security contributions. We have tried to interpret these relationships referring to the specificity of this world area and its “hard path” of (economic and political) development.

Similarly, on the public expenditure side the correlations in the pooled OLS model are no longer significant when including country fixed effects. The only exceptions to this are the positive relationship between the democracy index and total government expenditure, which is in line with the predictions of the median voter theorem, and the less obvious inverted U-shaped relationship between democracy and defense spending. When separately considering the different world areas in our sample, in this case we find that political variables are especially significant in New

EU Countries. However, our empirical results do not reject the prediction of the median voter's model only when we look at the protection of civil liberties and education expenditure. On the other hand, and differently from what we find regarding taxation, in Latin America and Asia there is no significant relation between those political variables and the different expenditure items.

To conclude, our analysis shows that in different areas of the world the link between political variables and the design of the tax/expenditure system may be driven either by an increase in the strength of democratic institutions or by an increase in the protection of civil liberties, with effects which may go in opposite directions. Interestingly, we suggest that the two sides of the public budget, taxation and expenditure, may react differently (or at different timing) to the democratization process, and that the quality and the maturity of democracy matter to understand the relation between the political variables and the composition of both taxes and expenditures. Finally, our within-country results cast some reasonable doubt on the exact public policy channels through which political institutions at large –in the shape of negative and positive liberties– might affect economic development. Given the findings by Papaioannou and Siourounis (2008) on the positive connection between successful democratic transitions and subsequent economic growth, future research should delve further into the exact mechanisms at play.

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## A Data Appendix

List of all variables and their sources:

**POLITY2:** the POLITY2 score is computed by subtracting the AUTOOC score from the DEMOC score. The resulting unified polity scale ranges from +10 (strongly democratic) to -10 (strongly autocratic). Source: Polity IV dataset (2007).

**CIVIL LIBERTIES:** conceived of as freedoms to develop views, organizations and personal autonomy apart from the State, are measured on a one-to-seven scale. We have inverted the order of the original variable, so that a value of 1 represents the lowest degree of freedom, while a value of 7 stands for the highest level of protection. Source: Freedom House. *Freedom of the World: The Annual Survey of Political Rights and Civil Liberties*. Washington, D.C. and New York: Rowman & Littlefield Publishers, Inc.:

<http://www.freedomhouse.org>

**TAX REVENUE:** tax revenue/GDP. For Asian countries, data on tax revenue (in national currency, referred to central government with the exception of Vietnam) come from IMF (1999; 2001-6) *Government Finance Statistics Yearbook*. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. For Latin American countries TAX\_REV is total fiscal pressure/GDP.

Source: CEPALSTAT, <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>.

For New EU Members: TAX\_REV is total fiscal pressure/GDP. Source: Eurostat (2008) *Taxation trends in the European Union*, Eurostat Statistical Book, and Bernardi, L., M. Chandler and L. Gandullia (eds) (2005) *Tax Systems and Tax Reforms in New EU Members*, London: Routledge.

**PERSONAL INCOME TAX:** personal income tax/GDP. For Asian countries, data on individual tax on income, profits and capital gains (in national currency, referred to central government with the exception of Vietnam) come from IMF (1999; 2001-6) *Government Finance Statistics Yearbook*. Data on GDP (in na-

tional currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. Not available for Singapore. For Latin American countries the source is:

CEPALSTAT, <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>.

Not available for Argentina, Ecuador, El Salvador, Guatemala, Nicaragua and Venezuela. For New EU Members, source: Eurostat (2008) *Taxation trends in the European Union*, Eurostat Statistical Book and Bernardi, L., M. Chandler and L. Gandullia (eds) (2005) *Tax Systems and Tax Reforms in New EU Members*, London: Routledge.

**CORPORATE INCOME TAX:** corporate income tax/GDP. For Asian countries, data on corporate tax on income, profits and capital gains (in national currency, referred to central government with the exception of Vietnam) come from IMF (1999; 2001-6), *Government Finance Statistics Yearbook*. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. Not available for Singapore. For Latin American countries, source: CEPALSTAT, <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>. Not available for Argentina, Ecuador, El Salvador, Guatemala and Nicaragua. For New EU Members, source: Eurostat (2008) *Taxation trends in the European Union*, Eurostat Statistical Book and Bernardi, L., M. Chandler and L. Gandullia (eds) (2005) *Tax Systems and Tax Reforms in New EU Members*, London: Routledge.

**PROPERTY TAXES:** taxes on property/GDP. For Asian countries, data on taxes on property (in national currency, referred to central government with the exception of Vietnam) come from IMF (1999; 2001-6) *Government Finance Statistics Yearbook*. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. For Latin American countries, source: CEPALSTAT, <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>. Not available for Chile. For New EU Members: not available.

**TRADE TAXES:** taxes on international trade, transactions/GDP. For Asian countries, data on taxes on international trade, transactions (in national currency,

referred to central government with the exception of Vietnam) come from IMF (1999; 2001-6) *Government Finance Statistics Yearbook*. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. For Latin American countries, source: CEPALSTAT, <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>. For New EU Members TRADE is Other taxes on products (incl. import duties), source: Eurostat (2008) *Taxation trends in the European Union*, Eurostat Statistical Book and Bernardi, L., M. Chandler and L. Gandullia (eds) (2005) *Tax Systems and Tax Reforms in New EU Members*, London: Routledge.

**SOCIAL SECURITY:** social security contributions/GDP. For Asian countries, data on social security contributions (in national currency, referred to central government with the exception of Vietnam) come from IMF (1999; 2001-6) *Government Finance Statistics Yearbook*. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. Not available for China, Pakistan, Philippines, Singapore and Vietnam. For Latin American countries, source:

CEPALSTAT, <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>. Not available for Haiti. For New EU Members, source: Eurostat (2008) *Taxation trends in the European Union*, Eurostat Statistical Book and Bernardi, L., M. Chandler and L. Gandullia (eds) (2005) *Tax Systems and Tax Reforms in New EU Members*, London: Routledge.

**DIRECT TAXES:** direct taxes/GDP or tax on income, profits and capital gains/GDP. For Asian countries DIRECT is tax on income, profits and capital gains/GDP. Data on tax on income, profits and capital gains (in national currency, referred to central government with the exception of Vietnam) come from IMF (1999; 2001-6) *Government Finance Statistics Yearbook*. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. For Latin American countries DIRECT is direct taxes (net of property taxes)/GDP. Source:

CEPALSTAT, <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>. For New EU Members, DIRECT is direct taxes/GDP. Source: Eurostat (2008) *Taxation trends in the European Union*, Eurostat Statistical Book and Bernardi, L., M. Chandler and L. Gandullia (eds) (2005) *Tax Systems and Tax Reforms in New EU Members*, London: Routledge.

**INDIRECT TAXES:** domestic taxes on goods & services/GDP or indirect taxes/GDP. For Asian countries GS is domestic taxes on goods & services/GDP. Data on domestic taxes on goods & services (in national currency, referred to central government with the exception of Vietnam) come from IMF (1999; 2001-6) *Government Finance Statistics Yearbook*. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. For Latin American countries GS is indirect taxes (net of trade taxes)/GDP. Source: CEPALSTAT, <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>. For New EU Members, GS is indirect taxes (net of trade taxes)/GDP. Source: Eurostat (2008) *Taxation trends in the European Union*, Eurostat Statistical Book and Bernardi, L., M. Chandler and L. Gandullia (eds) (2005) *Tax Systems and Tax Reforms in New EU Members*, London: Routledge.

**TOTAL GOVERNMENT EXPENDITURE:** total government spending/GDP. Data on total government outlays (in national currency) come from IMF *Government Finance Statistics*, January 2010, online version. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. Not available for Haiti, Honduras and El Salvador. For China, Colombia, Ecuador, Guatemala, Paraguay, Philippines and Sri Lanka data are referred to budgetary central government. For Vietnam data are referred to general government. For the other countries data are referred to consolidated central government.

**GENERAL PUBLIC SERVICES:** government spending on general public services/GDP. Data on government spending on general public services (in national currency) come from IMF *Government Finance Statistics*, January 2010, online

version. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. Not available for Haiti, Honduras, El Salvador and Peru. For China, Colombia, Ecuador, Guatemala, Paraguay, Philippines and Sri Lanka data are referred to budgetary central government. For Vietnam data are referred to general government. For the other countries data are referred to consolidated central government.

**DEFENSE EXPENDITURE:** government spending on defense/GDP. Data on government spending on defense (in national currency) come from IMF *Government Finance Statistics*, January 2010, online version. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. Not available for Haiti, Honduras, El Salvador and Peru. For China, Colombia, Ecuador, Guatemala, Paraguay, Philippines and Sri Lanka data are referred to budgetary central government. For Vietnam data are referred to general government. For the other countries data are referred to consolidated central government.

**HEALTH EXPENDITURE:** government spending on health/GDP. Data on government spending on health (in national currency) come from IMF *Government Finance Statistics*, January 2010, online version. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. Not available for Haiti, Honduras, El Salvador and Peru. For China, Colombia, Ecuador, Guatemala, Paraguay, Philippines and Sri Lanka data are referred to budgetary central government. For Vietnam data are referred to general government. For the other countries data are referred to consolidated central government.

**EDUCATION EXPENDITURE:** government spending on education/GDP. Data on government spending on education (in national currency) come from IMF *Government Finance Statistics*, January 2010, online version. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. Not available for Haiti, Honduras, El Salvador and Peru.

For China, Colombia, Ecuador, Guatemala, Paraguay, Philippines and Sri Lanka data are referred to budgetary central government. For Vietnam data are referred to general government. For the other countries data are referred to consolidated central government.

**SOCIAL PROTECTION EXPENDITURE:** government spending on social protection/GDP. Data on government spending on social protection (in national currency) come from IMF *Government Finance Statistics*, January 2010, online version. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. Not available for Haiti, Honduras, El Salvador and Peru. For China, Colombia, Ecuador, Guatemala, Paraguay, Philippines and Sri Lanka data are referred to budgetary central government. For Vietnam data are referred to general government. For the other countries data are referred to consolidated central government.

**PUBLIC ORDER EXPENDITURE:** government spending on public order and safety/GDP. Data on government spending on public order and safety (in national currency) come from IMF *Government Finance Statistics*, January 2010, online version. Data on GDP (in national currency, at current market prices) come from IMF *World Economic Outlook Database*, October 2009. Not available for Haiti, Honduras, El Salvador and Peru. For China, Colombia, Ecuador, Guatemala, Paraguay, Philippines and Sri Lanka data are referred to budgetary central government. For Vietnam data are referred to general government. For the other countries data are referred to consolidated central government.

**GDP PER WORKER:** real GDP chain per worker (I\$ per worker in 2000 constant prices). Source: Heston, A., R. Summers and B. Aten (2006), *Penn World Table*, Version 6.2, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania.

**TRADE OPENNESS INDEX:** the sum of exports and imports as a percentage of GDP. Source: DataGob, Government Indicators Database,

<http://www.iadb.org/DataGob/>. Data are based on World Bank, World Devel-

opment Indicators (WDI) Online, Washington: The World Bank.

<http://devdata.worldbank.org/dataonline>. Not available for Singapore.

**GOVERNMENT DEBT:** central government debt/GDP for Asian and Latin American countries. Source: Panizza, U. (2006) Public Debt around the World: A New Dataset of Central Government Debt, IADB.

[http://www.iadb.org/res/pub\\_desc.cfm?pub\\_id=DBA-005](http://www.iadb.org/res/pub_desc.cfm?pub_id=DBA-005). Not available for Vietnam and Dominican Republic. General government debt/GDP for New EU Members. Source: Eurostat

<http://epp.eurostat.ec.europa.eu/portal/>

[page?\\_pageid=1090,30070682,1090\\_33076576&\\_dad=portal&\\_schema=PORTAL](http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1090,30070682,1090_33076576&_dad=portal&_schema=PORTAL) and OECD (2008) Factbook. Economic, Environmental and Social Statistics.

**AGRICULTURE:** the share of agriculture as a percentage of GDP. For Asian countries, source: Asian Development Bank (various years), Key Indicators. For Latin American countries, computed by us from CEPALSTAT data,

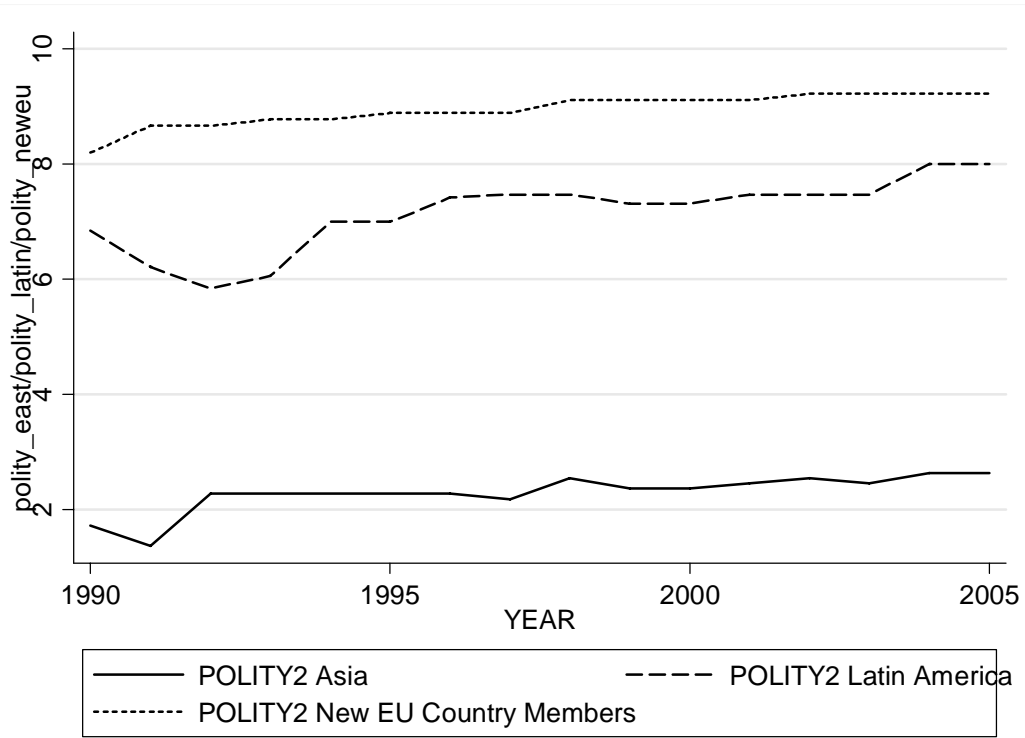
<http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>. Not available for Guatemala. For New EU Members, not available.

**FEMALE LABOUR FORCE PARTICIPATION:** female labour force participation rate as percentage of female population ages 15-64. Source: World Bank (2007), World Development Indicators (WDI 2007), Washington: The World Bank.

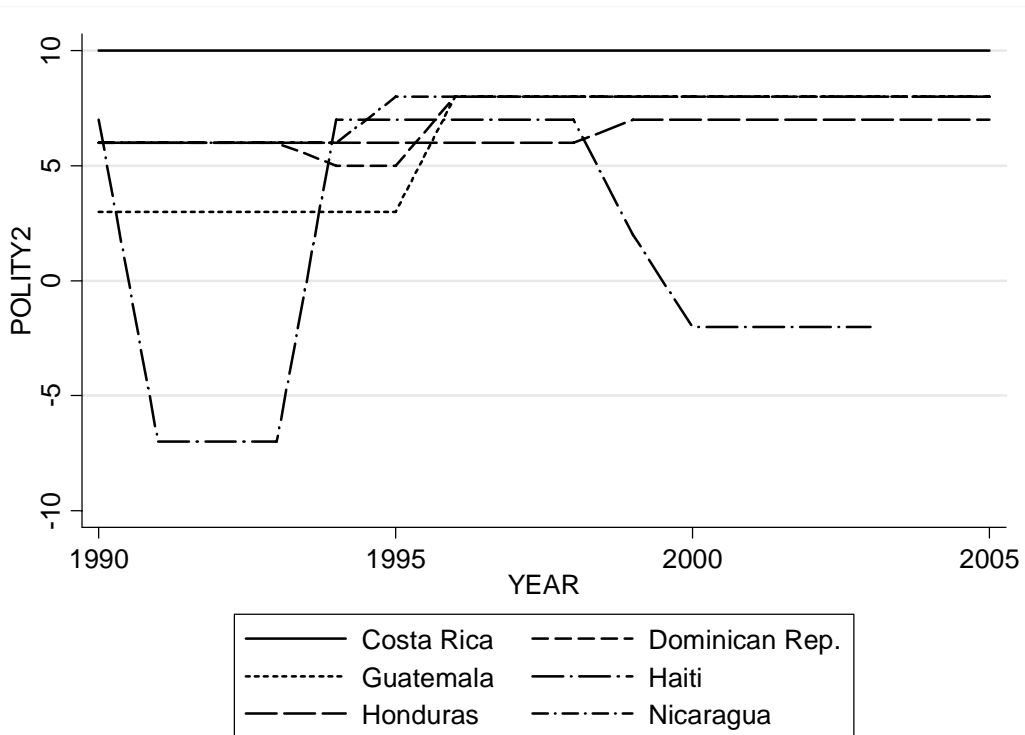
**SECONDARY SCHOOL ENROLMENT:** school enrolment, secondary (% net). Source: World Bank (2007), World Development Indicators (WDI 2007), Washington: The World Bank. Not available for China, India, Singapore, Sri Lanka, Thailand, Haiti, Uruguay, Czech Republic, Latvia and Slovakia. For Latin American countries SCHOOLING is School enrolment, secondary (% gross).

**OLD AGE POPULATION:** population ages 65 and above as percentage of total. Source: World Bank (2007), World Development Indicators (WDI 2007), Washington: The World Bank.

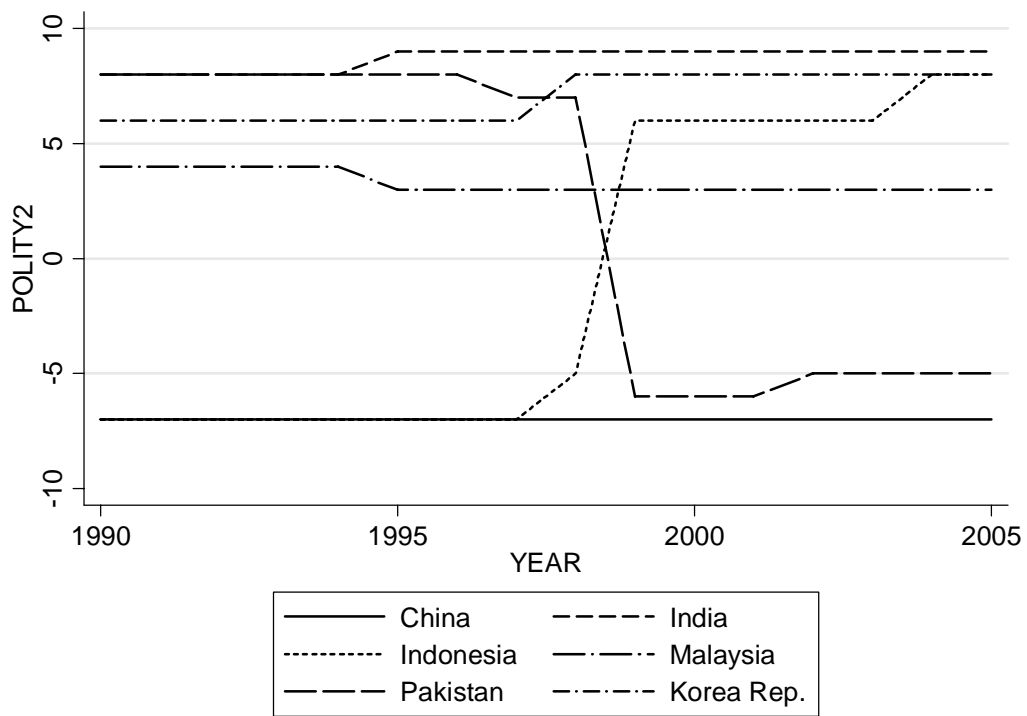
**Figure 1a Asia, Latin America, New EU Members: the evolution of POLITY2**



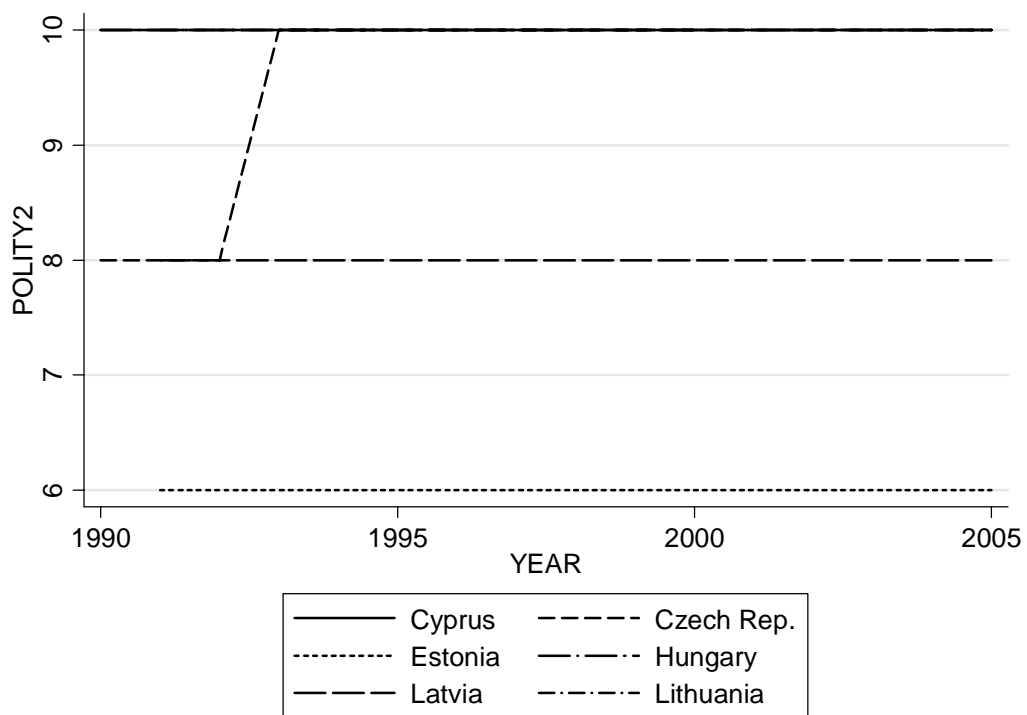
**Figure 1b The evolution of POLITY2 in a sample of Latin American countries**



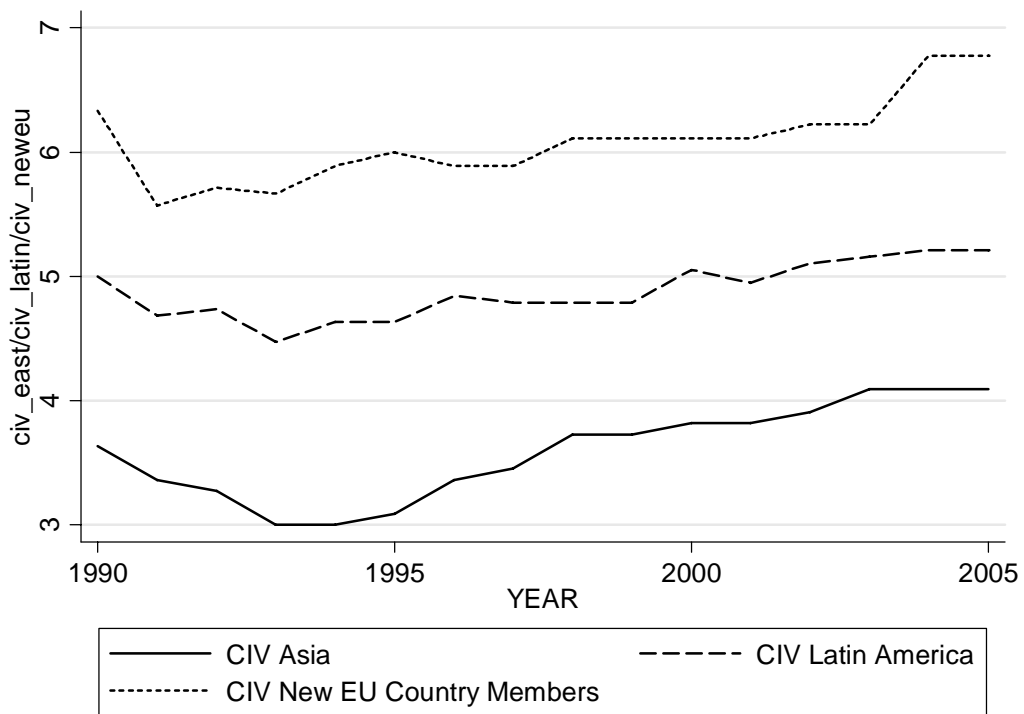
**Figure 1c The evolution of POLITY2 in a sample of Asian countries**



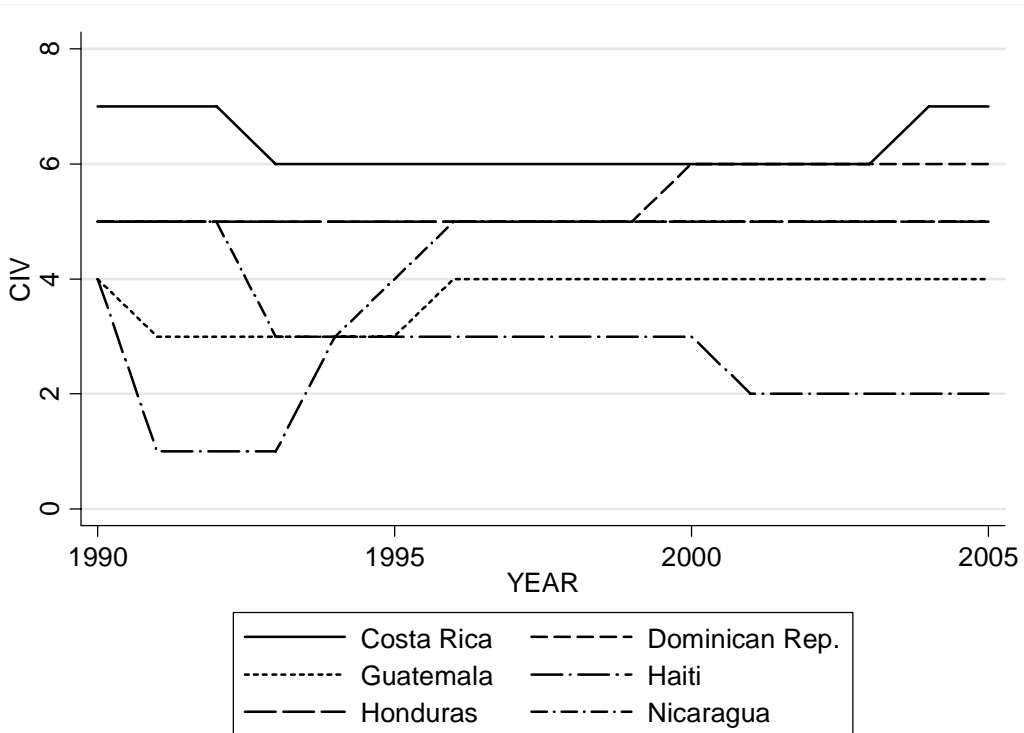
**Figure 1d The evolution of POLITY2 in a sample of New EU members countries**



**Figure 2a Asia, Latin America, New EU Members: the evolution of CIV**



**Figure 2b The evolution of CIV in a sample of Latin American countries**





**Table 1: summary statistics**

<b>Variable</b>	<b>No of obs.</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
<i>Tax revenue variables (over GDP)</i>						
tax revenue	569	17.681	14.5	9.064	2.5	46
personal income tax	391	2.377	1.4	2.389	0	9.2
corporate income tax	424	2.536	2.1	1.987	0.01	18.22
direct taxes	563	4.727	3.88	3.019	0.42	23.08
indirect taxes	566	7.024	6.13	3.405	0.42	17.9
property taxes	420	0.379	0.16	0.486	0	2.05
trade taxes	554	1.886	1.545	1.628	0.01	15.3
social security contributions	444	4.506	1.92	4.900	0	18.6
<i>Public spending variables (over GDP)</i>						
total government expenditure	427	22.010	20.13	8.378	6.3	56.08
general public services	341	6.120	4.93	3.884	1.18	31.65
defense expenditure	346	1.608	1.35	1.155	0	5.57
health expenditure	346	1.996	1.37	1.929	0	7.67
education expenditure	346	2.691	2.905	1.454	0.01	5.54
social protection expenditure	341	5.279	3.08	5.494	0	21.07
public order expenditure	318	1.123	1.1	0.656	0	3.52
<i>Political variables</i>						
Polity 2 index	569	6.200	8	4.618	-7	10
civil liberties index	569	4.787	5	1.373	1	7
<i>Economic controls</i>						
GDP per worker	497	15.904	14.111	9.918	2.830	58.750
trade openness index	529	72.548	62.900	39.796	10.600	214.400
(government debt)/GDP	524	50.188	43.150	39.511	2.500	304.500
agriculture/GDP	519	11.974	9.800	7.413	0.100	34.800
female labor force participation	569	46.666	47.700	11.564	11.200	75.600
secondary school enrolment	322	72.399	71.120	21.483	20.560	109.410
old age population	569	6.845448	5.2	3.71383	3.18	16.59

Notes: tax revenue and public expenditure variables are expressed as percentages with respect to GDP. The Polity 2 index takes on values on the [-10,10] range, with higher values for stronger democratic institutions. The civil liberties index is taken from Freedom House and recoded on a [1,7] range, with larger values denoting stronger protection of civil liberties. See the text for additional details. GDP per worker is expressed in thousands of PPP dollars.

**Table 2: tax sources and political factors, pooled OLS estimates, 1990-2005, excluding Indonesia**

dependent variable (over GDP)	tax revenue	personal income tax	corporate income tax	direct taxes	indirect taxes	property taxes	trade taxes	social security
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
civil liberties index	0.629 [1.02]	0.370* [1.94]	-0.567* [1.97]	-0.115 [0.39]	0.842** [2.57]	-0.03 [0.39]	-0.002 [0.01]	-0.294 [0.58]
Polity 2 index	0.105 [0.56]	-0.033 [0.83]	0.044 [0.60]	0.056 [0.63]	-0.079 [1.07]	-0.015 [0.65]	0.076 [1.13]	0.260* [1.92]
gdp per worker	0.087* [1.80]	-0.009 [0.29]	0.123*** [2.78]	0.091*** [3.40]	-0.047* [1.99]	0.022*** [4.18]	-0.024 [1.06]	0.054 [0.78]
Latin America dummy	-19.296*** [11.80]	-5.036*** [9.79]	-0.194 [0.35]	-5.152*** [9.30]	-5.010*** [6.06]	0.018 [0.16]	-0.791 [0.96]	-9.350*** [7.82]
Asia dummy	-17.993*** [9.85]	-3.787*** [6.54]	0.388 [0.53]	-3.602*** [5.07]	-4.600*** [4.57]	0 [.]	0.291 [0.32]	-11.337*** [10.65]
R squared	0.84	0.84	0.22	0.63	0.53	0.23	0.15	0.79
Number of countries	38	30	32	38	38	28	38	32
Observations	484	326	355	478	481	358	470	375
civil liberties index	0.629 [1.05]	0.356** [2.46]	-0.574** [2.07]	-0.089 [0.33]	0.853** [2.65]	-0.051 [0.82]	-0.014 [0.07]	-0.331 [0.70]
Polity 2 index	0.105 [0.38]	0.042 [1.13]	0.068 [0.68]	0.123 [1.11]	-0.052 [0.50]	-0.037 [1.32]	0.05 [0.63]	-0.114 [0.31]
Polity 2 index, squared	0 [0.01]	-0.017** [2.62]	-0.007 [0.53]	-0.019 [1.50]	-0.008 [0.49]	0.006* [1.75]	0.007 [0.70]	0.033 [0.85]
gdp per worker	0.087* [1.82]	-0.008 [0.32]	0.123*** [2.90]	0.085*** [3.27]	-0.050* [2.01]	0.025*** [5.81]	-0.021 [0.94]	0.047 [0.69]
Latin America dummy	-19.291*** [11.02]	-5.294*** [10.82]	-0.303 [0.54]	-5.483*** [9.92]	-5.144*** [5.14]	0.036 [0.30]	-0.661 [0.89]	-9.232*** [7.41]
Asia dummy	-17.989*** [9.48]	-3.994*** [7.34]	0.303 [0.45]	-3.864*** [6.11]	-4.706*** [4.44]	0 [.]	0.395 [0.48]	-11.167*** [9.53]
R squared	0.84	0.86	0.22	0.64	0.53	0.3	0.16	0.79
Number of countries	38	30	32	38	38	28	38	32
Observations	484	326	355	478	481	358	470	375
civil liberties index	0.445 [0.91]	0.443*** [3.24]	-0.444 [1.65]	-0.024 [0.09]	0.760** [2.34]	-0.064 [1.70]	-0.037 [0.20]	-0.444 [1.65]
Polity 2 index	0.392* [2.04]	0.024 [0.60]	0.087 [1.05]	0.108 [1.44]	0.133 [1.24]	0.022 [1.51]	0.099** [2.70]	0.011 [0.05]
Polity 2 index, squared	-0.028 [1.31]	-0.015* [1.91]	-0.001 [0.08]	-0.009 [0.69]	-0.031* [1.86]	-0.001 [0.68]	0.002 [0.16]	0.017 [0.64]
gdp per worker	-0.008 [0.08]	0.007 [0.25]	0.098 [1.22]	0.059 [1.10]	-0.167** [2.64]	-0.002 [0.28]	0.085 [1.23]	-0.021 [0.54]
trade openness index	0.01 [0.83]	-0.002 [0.73]	0.003 [0.41]	0.006 [1.05]	-0.004 [0.36]	0 [0.38]	0.005 [1.15]	0.007 [0.71]
(central government debt)/GDP	0.030*** [3.51]	0.002 [0.36]	0 [0.02]	0.002 [0.53]	0.012** [2.08]	0.002 [1.45]	0.008 [1.60]	0.011** [2.54]
agriculture/GDP	-0.213*** [3.06]	-0.046* [1.80]	-0.065 [1.17]	-0.187*** [3.70]	-0.078 [1.57]	-0.016* [1.97]	0.103*** [3.27]	-0.117 [1.52]
female labor force participation	0.036 [1.10]	0.002 [0.16]	-0.007 [0.36]	-0.001 [0.07]	0.019 [0.70]	0 [0.05]	0.012 [0.78]	0.042 [1.68]
old age population	0.561 [1.26]	-0.073 [0.88]	-0.247 [1.26]	-0.476** [2.53]	0.610*** [3.33]	0.127*** [6.57]	-0.098 [0.76]	0.604*** [3.61]
Latin America dummy	-16.536*** [4.88]	-5.506*** [8.25]	-1.686 [1.18]	-7.687*** [5.84]	-1.43 [0.92]	0 [.]	-1.801 [1.19]	-5.817*** [4.79]
Asia dummy	-14.871*** [4.76]	-3.879*** [5.32]	-0.878 [0.62]	-5.460*** [4.18]	-0.859 [0.62]	-0.04 [0.91]	-1.052 [0.70]	-8.236*** [6.67]
R squared	0.9	0.87	0.3	0.73	0.57	0.48	0.33	0.91
Number of countries	32	25	27	32	32	25	32	28
Observations	394	278	307	388	391	303	384	320
country fixed effects	no	no	no	no	no	no	no	no
year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes

Notes: the table displays the output of fixed effects regressions with tax revenues and different categories thereof (as a fraction of GDP) as dependent variables. Each column is devoted to a different revenue source, with different specifications being stacked in the same column.

The civil liberties index takes on values on the [1,7] range, with higher values denoting stronger protection of civil liberties. The Polity 2 index takes on values on the [-10,10] range, with higher values for stronger democratic institutions. See the text for details.

GDP per worker is expressed in thousands of PPP dollars. Region dummies are included, with New EU members as the excluded category.

Standard errors are clustered at the country level, and the corresponding t-statistics are reported in brackets below each coefficient.

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

**Table 3: tax sources and political factors, country fixed effects, 1990-2005, excluding Indonesia**

dependent variable (over GDP)	tax revenue	personal income tax	corporate income tax	direct taxes	indirect taxes	property taxes	trade taxes	social security
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
civil liberties index	0.302 [0.93]	0.134 [1.06]	0.364 [1.06]	0.386 [1.27]	-0.018 [0.09]	-0.102** [2.27]	-0.08 [0.68]	0.071 [0.73]
Polity 2 index	-0.037 [0.67]	-0.022 [1.49]	0.021 [0.39]	-0.037 [1.33]	-0.015 [0.35]	0.004 [0.48]	0.054* [1.80]	-0.013 [0.45]
gdp per worker	-0.152 [1.46]	-0.044 [1.34]	0.164 [1.22]	0.053 [0.57]	-0.08 [1.11]	-0.048*** [3.12]	-0.122 [1.13]	-0.090* [1.70]
R squared	0.97	0.97	0.71	0.89	0.83	0.76	0.69	0.98
Number of countries	38	30	32	38	38	28	38	32
Observations	484	326	355	478	481	358	470	375
civil liberties index	0.305 [0.93]	0.135 [1.10]	0.322 [1.12]	0.385 [1.29]	-0.014 [0.07]	-0.103** [2.27]	-0.079 [0.67]	0.06 [0.64]
Polity 2 index	0.006 [0.09]	0.01 [0.54]	-0.093 [0.93]	-0.061 [1.15]	0.041 [1.22]	0.011* [1.97]	0.066* [1.90]	-0.112 [0.90]
Polity 2 index, squared	-0.009 [0.53]	-0.006 [1.27]	0.02 [0.79]	0.005 [0.34]	-0.011 [1.30]	-0.001 [0.75]	-0.002 [0.45]	0.01 [0.74]
gdp per worker	-0.15 [1.44]	-0.047 [1.39]	0.161 [1.31]	0.052 [0.58]	-0.076 [1.07]	-0.047*** [3.14]	-0.121 [1.11]	-0.096* [1.73]
R squared	0.97	0.97	0.72	0.89	0.83	0.76	0.69	0.98
Number of countries	38	30	32	38	38	28	38	32
Observations	484	326	355	478	481	358	470	375
civil liberties index	0.484 [1.36]	0.243 [1.36]	0.285 [1.03]	0.48 [1.62]	-0.08 [0.37]	-0.061 [1.42]	0.166 [1.34]	0.05 [0.46]
Polity 2 index	-0.019 [0.19]	-0.001 [0.07]	-0.077 [1.17]	-0.069 [0.98]	0.038 [0.55]	0.007 [0.72]	0.06 [0.89]	-0.084 [0.83]
Polity 2 index, squared	-0.002 [0.09]	-0.001 [0.42]	0.022 [1.05]	0.011 [0.60]	-0.013 [0.83]	-0.002 [0.57]	0.002 [0.14]	0.01 [0.77]
gdp per worker	0.008 [0.05]	0.02 [0.50]	0.339* [2.02]	0.236 [1.64]	0 [0.00]	-0.03 [1.30]	-0.2 [1.58]	-0.02 [0.46]
trade openness index	-0.02 [1.12]	0.002 [0.58]	0.01 [1.15]	0.01 [1.14]	-0.024 [1.51]	0.003 [1.66]	-0.001 [0.17]	-0.018* [1.99]
(central government debt)/GDP	-0.002 [0.19]	0.001 [0.17]	0.01 [0.71]	0.007 [0.66]	-0.008 [1.18]	0.004 [1.54]	0.001 [0.40]	-0.007* [2.01]
agriculture/GDP	-0.063 [0.50]	0.015 [0.48]	0.05 [0.71]	-0.006 [0.08]	-0.094 [0.87]	0.021 [1.39]	0.042 [0.63]	-0.062 [1.45]
female labor force participation	0.178* [1.73]	0.011 [0.40]	0.032 [0.73]	0.053 [1.28]	0.109 [1.39]	0.025** [2.23]	0.06 [1.45]	-0.003 [0.09]
old age population	-0.635 [0.66]	-0.614 [1.39]	-1.148 [1.56]	-1.439* [1.82]	1.286 [1.14]	0.133 [0.99]	-0.528 [0.48]	-0.469 [1.29]
R squared	0.97	0.97	0.74	0.89	0.84	0.77	0.71	0.99
Number of countries	32	25	27	32	32	25	32	28
Observations	394	278	307	388	391	303	384	320
country fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes

Notes: the table displays the output of fixed effects regressions with tax revenues and different categories thereof (as a fraction of GDP) as dependent variables. Each column is devoted to a different revenue source, with different specifications being stacked in the same column.

The civil liberties index takes on values on the [1,7] range, with higher values denoting stronger protection of civil liberties. The Polity 2 index takes on values on the [-10,10] range, with higher values for stronger democratic institutions. See the text for details.

GDP per worker is expressed in thousands of PPP dollars.

Standard errors are clustered at the country level, and the corresponding t-statistics are reported in brackets below each coefficient.

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

**Table 4: tax sources and political factors, country fixed effects, 1990-2005, excluding Indonesia. Separate regressions for each area.**

dependent variable (over GDP)	tax revenue			personal income tax			corporate income tax			direct taxes		
	New EU	Latin Am	Asia	New EU	Latin Am	Asia	New EU	Latin Am	Asia	New EU	Latin Am	Asia
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
civil liberties index	-0.094 [0.13]	0.573** [2.42]	0.259 [0.49]	0.464 [1.22]	0.154 [1.30]	-0.011 [0.12]	-0.368 [0.81]	0.512* [2.16]	-0.222 [1.19]	-0.039 [0.08]	0.530** [2.41]	-0.285 [1.41]
Polity 2 index	-0.48 [0.58]	-0.113 [1.51]	-0.089** [2.44]	-0.805 [1.83]	-0.020** [2.33]	-0.008 [0.74]	-0.585 [1.19]	0.07 [0.65]	0.026 [1.60]	-1.153* [2.05]	-0.039 [0.67]	0.004 [0.25]
gdp per worker	0.644 [1.30]	0.091 [0.56]	0.059 [0.77]	0.064 [0.43]	0.014 [0.73]	-0.039 [1.40]	0.301* [2.15]	0.537 [1.60]	0.05 [1.09]	0.426 [1.68]	0.289 [1.47]	-0.05 [1.55]
R squared	0.9	0.88	0.92	0.83	0.94	0.95	0.86	0.66	0.91	0.68	0.75	0.94
Number of countries	9	19	10	9	12	9	9	14	9	9	19	10
Observations	90	263	131	90	133	103	90	152	113	90	257	131

dependent variable (over GDP)	indirect taxes			property taxes			trade taxes			social security		
	New EU	Latin Am	Asia	New EU	Latin Am	Asia	New EU	Latin Am	Asia	New EU	Latin Am	Asia
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
civil liberties index	1.669 [0.82]	-0.138 [0.93]	0.406 [1.17]	-	-0.05 [0.81]	-0.084 [1.40]	-2.997 [1.62]	0.265*** [3.38]	0.109 [0.54]	-0.294 [0.47]	-0.067 [0.64]	0.111 [0.80]
Polity 2 index	-1.11 [0.59]	-0.024 [0.45]	-0.069** [2.59]	-	-0.003 [0.16]	-0.009 [1.34]	1.86 [1.19]	-0.023 [1.55]	0.043** [2.61]	0.867 [1.47]	-0.024 [0.76]	-0.051* [2.16]
gdp per worker	0.702** [2.69]	-0.08 [0.94]	0.07 [1.40]	-	-0.073** [2.14]	-0.022 [0.89]	-0.813 [0.85]	-0.115* [2.08]	0.104*** [3.32]	-0.213 [1.47]	0.014 [0.42]	-0.132*** [4.82]
R squared	0.51	0.88	0.84	-	0.73	0.88	0.73	0.7	0.91	0.94	0.95	0.84
Number of countries	9	19	10	-	18	10	9	19	10	9	18	5
Observations	90	260	131	-	238	120	81	260	129	90	247	38
country fixed effects	yes	yes	yes	-	yes	yes	yes	yes	yes	yes	yes	yes
year fixed effects	yes	yes	yes	-	yes	yes	yes	yes	yes	yes	yes	yes

Notes: the table displays the output of fixed effects regressions with tax revenues and different categories thereof (as a fraction of GDP) as dependent variables. Within each subgroup of columns, each column is devoted to a different area of the world.

The civil liberties index takes on values on the [1,7] range, with higher values denoting stronger protection of civil liberties. The Polity 2 index takes on values on the [-10,10] range, with higher values for stronger democratic institutions. See the text for details.

GDP per worker is expressed in thousands of PPP dollars.

Standard errors are clustered at the country level, and the corresponding t-statistics are reported in brackets below each coefficient.

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

**Table 5: public expenditure and political factors, pooled OLS estimates, 1990-2005, excluding Indonesia**

dependent variable (over GDP)	total government expenditure	general public services	defense expenditure	health expenditure	education expenditure	social protection expenditure	public order expenditure
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
civil liberties index	-0.399 [0.37]	-0.803 [1.34]	-0.213* [1.78]	-0.066 [0.26]	-0.146 [0.83]	0.227 [0.31]	0.036 [0.51]
Polity 2 index	0.459 [1.63]	0.084 [0.43]	0.061 [1.32]	0.066 [1.48]	0.119* [1.88]	0.085 [0.58]	0.040* [1.80]
gdp per worker	0.07 [1.17]	-0.097*** [2.73]	0.049*** [2.76]	0.009 [0.62]	0.046*** [2.77]	0.04 [0.95]	0.002 [0.36]
Latin America dummy	-15.618*** [5.33]	-2.978** [2.42]	-0.27 [0.88]	-2.339*** [3.05]	-0.079 [0.17]	-6.577*** [3.18]	-0.715*** [3.97]
Asia dummy	-14.567*** [4.38]	-1.592 [1.04]	1.337*** [3.69]	-3.343*** [4.65]	-0.028 [0.05]	-9.778*** [5.75]	-0.771*** [4.36]
R squared	0.59	0.21	0.5	0.54	0.22	0.62	0.52
Number of countries	35	34	34	34	34	34	34
Observations	403	321	326	326	326	320	312
civil liberties index	-0.523 [0.52]	-0.813 [1.35]	-0.185 [1.61]	-0.082 [0.34]	-0.137 [0.80]	0.177 [0.26]	0.039 [0.58]
Polity 2 index	0.32 [0.80]	0.047 [0.20]	0.108** [2.28]	0.039 [0.61]	0.135* [1.85]	-0.06 [0.30]	0.048** [2.55]
Polity 2 index, squared	0.042 [0.87]	0.011 [0.48]	-0.015** [2.58]	0.009 [0.79]	-0.005 [0.60]	0.048 [1.40]	-0.003 [0.74]
gdp per worker	0.091 [1.53]	-0.092*** [2.82]	0.042** [2.71]	0.013 [0.78]	0.044*** [2.82]	0.064 [1.39]	0.001 [0.19]
Latin America dummy	-14.911*** [5.37]	-2.808** [2.59]	-0.49 [1.52]	-2.211** [2.69]	-0.153 [0.30]	-5.852** [2.71]	-0.752*** [4.09]
Asia dummy	-13.932*** [4.47]	-1.381 [0.96]	1.101*** [3.21]	-3.206*** [4.14]	-0.108 [0.18]	-8.855*** [4.80]	-0.815*** [4.07]
R squared	0.6	0.21	0.56	0.55	0.23	0.65	0.52
Number of countries	35	34	34	34	34	34	34
Observations	403	321	326	326	326	320	312
civil liberties index	0.005 [0.01]	-0.538 [1.05]	0.021 [0.18]	0.069 [0.35]	0.065 [0.41]	0.388 [0.75]	0.079 [1.16]
Polity 2 index	0.417* [1.82]	-0.039 [0.34]	0.071 [1.70]	-0.058 [1.01]	0.103** [2.18]	-0.003 [0.03]	0.026 [1.46]
Polity 2 index, squared	0.009 [0.25]	0.022 [1.20]	-0.013** [2.41]	0.024** [2.50]	-0.001 [0.13]	0.029 [1.52]	0 [0.08]
gdp per worker	-0.097 [0.66]	-0.177* [1.88]	-0.012 [0.63]	-0.001 [0.03]	0.048* [1.77]	-0.034 [0.32]	-0.005 [0.51]
trade openness index	0.03 [1.66]	-0.01 [0.91]	-0.005* [1.91]	0.021*** [6.42]	0.014** [2.67]	-0.016 [1.38]	0.007*** [6.98]
(central government debt)/GDP	0.063*** [2.66]	0.021 [1.25]	0.003* [1.93]	0.007** [2.48]	0.009*** [3.08]	0.031** [2.30]	0.005*** [3.87]
agriculture/GDP	-0.19 [1.56]	-0.228 [1.28]	0.005 [0.22]	-0.019 [0.71]	-0.046 [0.98]	-0.139 [1.23]	0.005 [0.30]
female labor force participation	-0.033 [0.79]	-0.141*** [3.16]	-0.011 [0.71]	-0.011 [0.91]	0.036** [2.59]	-0.012 [0.43]	0.013** [2.57]
old age population	0.764 [1.36]	-0.15 [0.74]	0.082 [1.15]	-0.064 [0.71]	-0.305*** [3.71]	1.085*** [3.03]	-0.002 [0.09]
Latin America dummy	-10.986** [2.59]	-4.828*** [3.33]	-0.508 [1.02]	-2.301*** [3.84]	-1.217* [1.81]	-0.751 [0.25]	-0.217 [1.59]
Asia dummy	-10.455** [2.67]	-1.685 [1.04]	0.933* [1.75]	-3.510*** [5.14]	-1.623** [2.58]	-2.46 [0.88]	-0.665*** [3.70]
R squared	0.76	0.45	0.56	0.82	0.71	0.86	0.74
Number of countries	29	28	28	28	28	28	28
Observations	324	256	256	256	256	252	247
country fixed effects	no	no	no	no	no	no	no
year fixed effects	yes	yes	yes	yes	yes	yes	yes

Notes: the table displays the output of fixed effects regressions with public expenditure and different categories thereof (as a fraction of GDP) as dependent variables. Each column is devoted to a different expenditure item, with different specifications being stacked in the same column.

The civil liberties index takes on values on the [1,7] range, with higher values denoting stronger protection of civil liberties. The Polity 2 index takes on values on the [-10,10] range, with higher values for stronger democratic institutions. See the text for details.

GDP per worker is expressed in thousands of PPP dollars. Region dummies are included, with New EU members as the excluded category.

Standard errors are clustered at the country level, and the corresponding t-statistics are reported in brackets below each coefficient.

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

**Table 6: public expenditure and political factors, country fixed effects, 1990-2005, excluding Indonesia**

dependent variable (over GDP)	total government expenditure	general public services	defense expenditure	health expenditure	education expenditure	social protection expenditure	public order expenditure
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
civil liberties index	-0.164 [0.34]	0.612 [1.40]	0.02 [0.24]	0.097 [0.83]	0.147 [1.25]	-0.027 [0.11]	-0.021 [0.25]
Polity 2 index	0.135 [1.52]	0.009 [0.15]	-0.01 [0.33]	0.012 [0.58]	0.034 [1.40]	-0.008 [0.16]	0.016 [1.30]
gdp per worker	-0.147 [1.34]	-0.085 [0.77]	0.025 [1.14]	0.008 [0.50]	-0.046 [1.49]	0.033 [0.60]	0.001 [0.07]
R squared	0.93	0.84	0.91	0.95	0.91	0.97	0.91
Number of countries	35	34	34	34	34	34	34
Observations	403	321	326	326	326	320	312
civil liberties index	-0.081 [0.18]	0.599 [1.38]	0.03 [0.37]	0.1 [0.87]	0.148 [1.26]	-0.025 [0.10]	-0.021 [0.25]
Polity 2 index	0.321*** [3.39]	-0.102 [1.00]	0.074*** [2.96]	0.033 [0.87]	0.038 [0.90]	0.017 [0.58]	0.01 [0.83]
Polity 2 index, squared	-0.032 [1.47]	0.017 [1.21]	-0.012** [2.37]	-0.003 [0.50]	-0.001 [0.07]	-0.004 [0.44]	0.001 [0.32]
gdp per worker	-0.152 [1.42]	-0.084 [0.76]	0.023 [1.05]	0.008 [0.46]	-0.046 [1.47]	0.033 [0.59]	0.001 [0.07]
R squared	0.93	0.84	0.91	0.95	0.91	0.97	0.91
Number of countries	35	34	34	34	34	34	34
Observations	403	321	326	326	326	320	312
civil liberties index	0.005 [0.01]	0.266 [1.03]	0.005 [0.07]	0.149 [1.17]	0.116 [1.07]	-0.023 [0.12]	0.005 [0.05]
Polity 2 index	0.169* [1.94]	-0.059 [0.69]	0.081*** [3.25]	0.036 [0.91]	0.047 [1.00]	0.052 [1.10]	0.002 [0.13]
Polity 2 index, squared	-0.018 [0.86]	0.008 [0.48]	-0.012** [2.07]	-0.002 [0.31]	-0.003 [0.35]	-0.002 [0.13]	0.003 [0.99]
gdp per worker	-0.108 [0.57]	-0.031 [0.14]	-0.017 [0.35]	-0.032 [0.54]	-0.054 [0.97]	0.169* [1.76]	-0.012 [0.37]
trade openness index	-0.029 [1.05]	-0.004 [0.26]	-0.008** [2.22]	-0.005 [0.99]	0.001 [0.21]	-0.003 [0.16]	0.004 [0.94]
(central government debt)/GDP	0.029 [1.42]	0.059* [2.00]	-0.004 [0.65]	-0.004 [0.38]	-0.009 [1.03]	0.03 [1.61]	-0.004 [0.66]
agriculture/GDP	-0.289 [1.23]	-0.159 [1.11]	-0.055* [1.73]	-0.002 [0.04]	0.017 [0.36]	0.023 [0.20]	-0.008 [0.39]
female labor force participation	0.392*** [2.78]	0.005 [0.06]	-0.006 [0.23]	0.029 [1.37]	0.057* [2.05]	0.209** [2.57]	0.033** [2.27]
old age population	2.357** [2.26]	0.439 [0.54]	0.035 [0.15]	0.193 [0.57]	0.263 [0.88]	0.362 [0.77]	-0.026 [0.13]
R squared	0.94	0.86	0.88	0.96	0.94	0.98	0.9
Number of countries	29	28	28	28	28	28	28
Observations	324	256	256	256	256	252	247
country fixed effects	yes	yes	yes	yes	yes	yes	yes
year fixed effects	yes	yes	yes	yes	yes	yes	yes

Notes: the table displays the output of fixed effects regressions with public expenditure and different categories thereof (as a fraction of GDP) as dependent variables. Each column is devoted to a different expenditure item, with different specifications being stacked in the same column.

The civil liberties index takes on values on the [1,7] range, with higher values denoting stronger protection of civil liberties. The Polity 2 index takes on values on the [-10,10] range, with higher values for stronger democratic institutions. See the text for details.

GDP per worker is expressed in thousands of PPP dollars.

Standard errors are clustered at the country level, and the corresponding t-statistics are reported in brackets below each coefficient.

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

**Table 7: public expenditure and political factors, country fixed effects, 1990-2005, excluding Indonesia. Separate regressions for each area.**

dependent variable (over GDP)	total government expenditure			general public services			defense expenditure			public order expenditure		
	New EU	Latin Am	Asia	New EU	Latin Am	Asia	New EU	Latin Am	Asia	New EU	Latin Am	Asia
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
civil liberties index	1.006 [0.34]	-0.523 [1.35]	0.525 [0.70]	-0.039 [0.07]	0.523 [0.83]	0.346 [0.96]	-0.247 [1.08]	0.129 [0.90]	-0.023 [0.17]			
Polity 2 index	-1.778 [0.62]	-0.136 [0.98]	0.267* [2.21]	1.131 [1.54]	0.107 [0.42]	0.029 [0.70]	0.02 [0.08]	-0.04 [0.65]	-0.01 [0.30]			
gdp per worker	0.687 [1.17]	-0.002 [0.01]	-0.085 [0.79]	0.077 [0.29]	0.165 [0.42]	-0.184*** [4.60]	0.147* [2.24]	-0.015 [0.42]	0.024 [0.58]			
R squared	0.88	0.85	0.87	0.87	0.75	0.94	0.66	0.89	0.91			
Number of countries	9	16	10	9	15	10	9	15	10			
Observations	80	190	133	79	128		79	133	114			
dependent variable (over GDP)	health expenditure			education expenditure			social protection expenditure			public order expenditure		
	New EU	Latin Am	Asia	New EU	Latin Am	Asia	New EU	Latin Am	Asia	New EU	Latin Am	Asia
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
civil liberties index	0.208 [0.54]	0.253 [1.24]	0.072 [1.10]	0.883*** [3.63]	0.119 [0.63]	0.131 [1.01]	1.253 [0.71]	0.391 [1.04]	-0.207 [1.33]	-0.038 [0.40]	0.085 [0.68]	-0.186 [1.38]
Polity 2 index	-0.673* [2.09]	-0.004 [0.08]	0.024 [1.12]	-0.945*** [4.56]	0.013 [0.21]	0.042 [1.18]	-1.529 [0.86]	-0.131 [1.56]	0.053 [1.80]	-0.190** [2.46]	0.022 [1.01]	0.011 [0.77]
gdp per worker	0.066 [1.38]	0.021 [0.55]	0.002 [0.13]	0.102 [1.34]	-0.003 [0.06]	-0.046* [2.10]	0.067 [0.14]	0.132 [0.66]	0.035 [0.99]	0.039 [1.12]	0.004 [0.17]	-0.015 [0.56]
R squared	0.86	0.95	0.95	0.82	0.93	0.97	0.89	0.97	0.88	0.74	0.91	0.85
Number of countries	9	15	10	9	15	10	9	15	10	9	15	10
Observations	79	133	114	79	133	114	79	128	113	79	128	105
country fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

Notes: the table displays the output of fixed effects regressions with public expenditure and different categories thereof (as a fraction of GDP) as dependent variables. Within each subgroup of columns, each column is devoted to a different area of the world.

The civil liberties index takes on values on the [1,7] range, with higher values denoting stronger protection of civil liberties. The Polity 2 index takes on values on the [-10,10] range, with higher values for stronger democratic institutions. See the text for details.

GDP per worker is expressed in thousands of PPP dollars.

Standard errors are clustered at the country level, and the corresponding t-statistics are reported in brackets below each coefficient.

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