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# Political competition and tax revenues in developing countries

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**Abstract:** Building on the literature of the political economy of taxation, this article explores the relationship between political competition and tax revenues using a sample of 89 developing countries from 1988 to 2010. Owing to the inertia of tax variables, we estimate a dynamic panel data model using the Blundell and Bond two-step System-GMM. The analysis led to the following results: political competition positively and significantly affects total tax revenues; however, this general pattern differs slightly across the type of taxes; and the net effect of political competition on tax revenues is negative for countries which have adopted fiscal rules.

**Keywords:** level of tax revenues, political competition, volatility of tax revenues
**JEL classification:** C72, D72, H21

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# 1 Introduction

Strengthening the mobilization of domestic resources is viewed as a condition of economic growth and sustainable development. Over the last two decades, developing countries have witnessed a steady increase in tax revenues. According to new figures released by the ICTD (International Centre for Tax and Development), among developing countries, non-resources taxes increased from 13 per cent of gross domestic product (GDP) in 1990 to 16 per cent in 2009. This progress in the mobilization of domestic revenues is consistent across developing regions and mirrored by the evolution of non-resources tax collection that has also improved in sub-Saharan Africa over this period (Prichard et al., 2014).

While this progress in tax revenue collection may reflect a constant investment in tax reforms (introduction of value added taxes, adoption of advanced tax administration practices, giving more autonomy to tax collection agencies), this improvement might also result from more political competition in the developing world. Indeed, as stressed by Di John (2006), while adopting an economic point of view is important for understanding the processes of tax collection and the sustainability of tax reforms, this analysis would be incomplete if it ignored the political nature of taxation.

Despite the paucity of the literature on how political factors may affect the structure and the level of taxes, some contributions in the political economy literature help to give a sense of some stylized facts.

According to public choice theory, greater political competition may lead to moderate policy choice in terms of taxation (Buchanan and Wagner, 1977). In fact, politicians are vote-maximizers and will choose the tax policy that maximizes the well-being of a large group of voters. Likewise, political competition can help to provide the necessary political support to legitimate state tax policies and improve voluntary compliance among taxpayers. This will result in more tax collection and less volatility of tax revenues. According to Rogers and Rogers (1995), greater political competition lead to bigger government in terms of public spending. Therefore, when the political competition is greater, the government which is vote-maximizing tends to tax more in order to finance the provision of public goods which will improve the well-being of the voters, especially when it faces a budget deficit constraint, which reduces the possibility of resorting to debt. This argument suggests that improvement in the delivery of public services will increase the legitimacy of the state collecting taxes and therefore generate greater compliance among taxpayers. However, in developing countries especially, the private cost of not paying taxes is often insignificant compared to the private gain, mainly because the enforcement mechanisms are weak and the probability of detection of non-compliance is low. Actually, due to the widespread informal sector, compliance is likely to be high only for direct taxes which apply to individuals and/or companies in the formal sector. A potential solution would be to broaden the tax base. But this would be constrained by political opposition or the lack of enforcement mechanisms, especially if one wants to extend tax collection to the entire informal sector. However, there is a strong belief among scholars that building legitimacy around the process of tax collection is a guarantee of sustainability. In this line, Di John (2006) provides a critical review of the economic, administrative, and political economy approaches used to analyse taxation in developing countries. He argues that political competition plays an important role in the increase and the stability of tax revenues. Indeed, tax reforms require either a social consensus that tax policies should be implemented as a matter of the common interest, or a strong state with the ability to impose its preferences regarding allocation of resources. In this line, political parties, by providing the political support necessary to legitimate state tax policies,

help to put the tax system on the right track. The debate concerning the legitimacy of tax policy is strongly linked with that concerning the state's fiscal capacity. Besley and Persson (2013) analyse the economic and political determinants of states' capacity to support markets and levy taxes. They develop a framework where tax rates are the result of endogenous policy choices, which are, however, constrained by the state's legal and fiscal capacity inherited from the past. The central finding of their paper is that a more representative political system raises the investment in fiscal capacity. With regard to the empirical political determinants of the state's fiscal capacity, they find that past parliamentary democracy is positively correlated with the level of tax revenues. However, this result holds only for income taxes and trade taxes. An interpretation of this result is that a parliamentary regime, rather than a presidential system, generates more political legitimacy and increases the consent of citizens with regard to paying taxes. Likewise, Bierbrauer and Boyer (2013) study the relationship between political competition and taxes using the Mirrleesian model of income taxation. They assume that politicians differ according to their quality and they have to attract the vote of two types of groups: low-skilled individuals (the majority) and high-skilled individuals. When there is no quality difference, in order to maximize the number of voters, the politicians will reduce or not increase taxes that affect the majority, made up of low-skilled individuals (with no consideration for the utility of the highly skilled). This will mean a reduction in indirect taxes in developing countries, for instance, as these are more likely to affect the majority and so reduce the probability of being elected. When the quality difference is large, the advantaged politicians have a higher probability of getting elected. Therefore, they will adopt a moderate tax policy to avoid losing the vote of the majority while preserving the interests of high-skilled individuals. This could mean no reduction of indirect taxes, but also no increase of income taxes or property taxes. Finally, in the case of small difference in quality, the advantaged politicians will still maintain a moderate tax policy, but give more weight to the majority of voters (low-skilled individuals). This could mean reducing indirect taxes while maintaining the level of income or property taxes. The disadvantaged politician in contrast will follow an extreme policy in order to attract all the votes of the majority.

Overall, the review of the existing literature suggests that political factors do indeed drive the conduct of the tax policy. Little empirical evidence is provided, however, especially concerning developing countries.

On the basis of the above-mentioned facts, this research seeks to assess the effect of political competition on tax revenues in developing countries. Specifically, we exploit the difference in the level of political competition across countries and time to explain the disparities in tax revenue collection among developing countries. The contribution of this paper is twofold: First, we assess the effect of political competition on the level of tax revenues. Second, we test whether fiscal rules put a constraint or act as a catalyst for tax revenue mobilization in developing countries.[1] The study concerns 89 developing countries over the period 1988 to 2010. The rest of the paper is organized as follows: section 2 outlines the methodology; section 3 discusses the results; while section 4 concludes.

## 2 Methodology

This section presents the empirical framework and the data used in order to investigate the relationship between political competition and tax revenues.

[1] For instance, a budget balance rule may constrain the government to rise more taxes to outweigh an increase in the level of public spending and avoid budget deficit.

## 2.1 Econometric model

We estimate a dynamic panel data model in order to take into account the strong inertia which characterizes most fiscal variables (Ebeke and Ölçer, 2013). Using the lagged variable of taxes in the right-hand side of the equation not only captures the inertia of the fiscal variables but also the fact that the current state's fiscal capacity depends on the fiscal capacity inherited from the past (Besley and Persson, 2013). The specification adopted is the following:

$$Tax_{it} = \alpha_i + \tau Tax_{it-1} + \beta Pol_{it} + \rho FR_{it} * Pol_{it} + \sigma FR_{it} + X'_{it}\delta + \varepsilon_{it} \quad (1)$$

In equation (1), $Tax_{it}$ represents the level of tax revenues of country $i$ at time $t$ and is further broken down into three categories: direct taxes, which refers to taxes on profits, income and capital gain, and property taxes; indirect taxes, which are taxes on goods and services (sales taxes/value added taxes [VAT], excises); taxes on international trade (import taxes and export taxes).[2] This choice is justified by the fact that these different categories of taxes constitute a stable base of revenue mobilization in most developing countries. In fact, they are non-resource taxes and their collection constitutes a huge challenge for developing countries in this current era of liberalization (Di John, 2006; Ebeke and Ölçer, 2013; Moore, 2014). $Pol_{it}$ is a measure of political competition which captures the probability that two deputies picked at random will be of different political parties. $FR_{it}$ is a dummy of the presence of fiscal rules. We exploit the interaction between the dummy of fiscal rules and the measure of political competition to assess the dampening effect of the presence of fiscal rules. Our hypothesis is that higher political competition will lead to a higher level of tax revenues ($\beta > 0$ ), but this effect is lower for countries which have adopted fiscal rules ($\rho < 0$). The reasoning surrounding this hypothesis is that politicians are vote-maximizers and thus tend to increase spending to attract more votes (Buchanan and Wagner, 1977; Rogers and Rogers, 1995). However, to avoid an unsustainable fiscal deficit, they also increase the level of tax collection. In particular, following Besley and Persson (2013), we expect a positive effect of political competition on the level of trade taxes and income taxes. In fact, in order to mobilize strong political support and get elected/re-elected, the government has to tax more to provide more public services. However, in a redistributive state of the world, this implies a tax distortion in the sense that one group of economic agents will be overtaxed. For this reason, the effect of political competition on indirect taxes could be negative or not significant. For example, the government will be very reluctant to increase VAT to avoid losing the support of the majority of voters. However, a decrease of the VAT in order to attract the political support of the voters may raise the level of household consumption and thus result in more tax revenues.

$X'_{it}$ is the matrix of control variables including GDP per capita, inflation, trade openness, the debt as a percentage of total exports, total population, and oil rents as a percentage of GDP (Combes and Saadi-Sedik, 2006; Ebeke and Ölçer, 2013). We expect positive effects of GDP per capita, trade openness and population on the mobilization on tax revenues. Indeed, high GDP per capita indicates more consumption of goods and services, and therefore more tax revenues. Likewise, the more the country is open to trade, the more it can raise taxes on imports as well as exports. Similarly, the higher the population, the higher consumption will be and hence the higher the potential tax revenues. In contrast, high inflation may suggest a decrease in the demand for goods and services and less tax revenues. We expect a negative effect of oil rent on taxes due to the potential crowding-out effect. In fact countries endowed with natural resources

[2] For more details, see the Basic Revenue Classification Scheme for ICTD GRD (Government Revenue Dataset).

are more likely to put less effort into collecting taxes. Likewise, we expect a negative effect of debt on taxes because more taxes means resorting little to debt to finance public spending.

Considering the estimation of equation (1), since the lagged dependent variable appears on the right-hand side, the OLS (ordinary least squares) estimator is biased due to the correlation with the error term. In order to deal with this issue we use the extended System-GMM (general method of moments) introduced by Blundell and Bond (1998), where the equation in level is combined with the equation in difference in a single system of equations. In this case, lagged variables in levels and lagged variables in difference are used as instruments. This approach has the advantage of addressing both the issue of endogeneity and the issue of unobserved heterogeneity. In addition, this estimator is preferred over the standard first-difference GMM because if the dependent variable is close to a random walk process, then variables in level are poor instruments of the variables in difference. The System-GMM helps to address this issue of weak instruments and, above all, has better finite sample properties. The standard errors are corrected using the standard Windmeijer (2005) finite sample procedure.

### 2.2 Data sources

Data on taxes are drawn from the new released ICTD Government Revenue Dataset (Prichard et al., 2014). This dataset is the most recent and comprehensive database currently available and combines data from several major sources. It has extensive coverage (1980–2010; 191 countries) and allows a certain level of granularity. Hence, in contrast with other sources, it provides reliable information on various categories of taxes. Data on political competition are collected from the Database of Political Institutions (Beck et al., 2001; Keefer, 2012). Data on fiscal rules are from the Fiscal Affairs Department of the International Monetary Fund (Schaechter et al., 2012). Data on controls are collected from the World Bank (World Development Indicators, 2012). In this paper, we use a sample of 89 countries over the period 1988–2010. The choice of the sample and period is dictated by data availability. The data are averaged over five non-overlapping years to smooth the business cycle and further deal with the issue of measurement error. Table 1 provides the descriptive statistics of the data based on the minimum sample size used in the estimation.

As regards tax variables, Table 1 shows that total tax revenues represent 14.53 per cent of the GDP in the sample of the developing countries analysed in this study. Allowing for more granularity, one observes that the taxes that contribute most to revenues are indirect taxes which represent 6.43 per cent of GDP. They are followed by direct taxes (4.49 per cent of GDP) and taxes on trade (3.47 per cent of GDP). Figure 1 portrays the evolution of tax revenues in developing countries over the period 1980–2010. According to the figure, total tax revenues have sharply increased over the three decades under study, especially since the mid 1990s. This increase is likely to be driven by the adoption of VAT in most developing countries during this period. As can be seen in Figure 1, indirect taxes have steadily increased since the early 1990s. With less magnitude, a similar increasing trend is observed for direct taxes. In contrast, trade taxes exhibit a steady downward trend, which might reflect trade liberalization policies that have been put in place during this period.

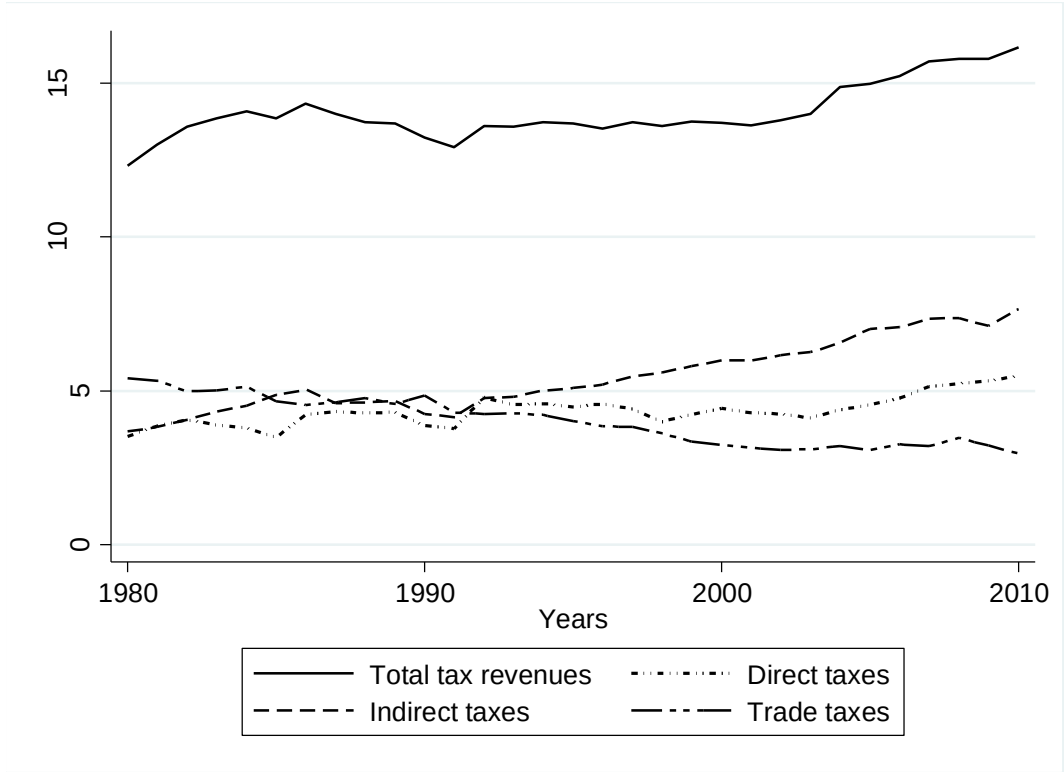
Concerning our interest variable (which captures the probability that two deputies picked at random from the legislature will be from different parties), Table 1 suggests that on average in our sample, one faces relatively polarizing situations in parliaments since the probability of having two deputies from different parties is on average 58 per cent. However, this also reflects a high level of political competition as shown in Figure 2.

Table 1: Descriptive statistics

| Variable | Obs | Mean | SD | Min. | Max. |
|---|---|---|---|---|---|
| Total taxes % GDP | 249 | 14.53624 | 5.919622 | 4.13482 | 50.29829 |
| Direct taxes % GDP | 226 | 4.499897 | 3.263348 | 0.6335305 | 23.71853 |
| Indirect taxes % GDP | 245 | 6.432224 | 3.14538 | 0.650442 | 16.01854 |
| Taxes on trade % GDP | 252 | 3.477276 | 3.590508 | 0.1442177 | 31.09041 |
| Political competition | 252 | 0.5863642 | 0.1872749 | 0.1040867 | .9601344 |
| Log (GDP per capita) | 252 | 7.206173 | 1.04048 | 4.986535 | 8.990733 |
| Inflation | 252 | 53.91521 | 473.2424 | -5.396586 | 6965.675 |
| Trade openness | 252 | 79.57466 | 39.45191 | 17.3438 | 242.794 |
| Debt % total export | 252 | 15.46343 | 13.48371 | 0.5724244 | 114.3865 |
| Oil rent % GDP | 252 | 4.299704 | 11.56505 | 0 | 64.49975 |
| Population | 252 | 15.89398 | 1.734707 | 11.52248 | 20.78895 |
| Debt rule | 252 | 0.5 | 0.500995 | 0 | 1 |
| Budget balance rule | 252 | 0.5396825 | 0.4994147 | 0 | 1 |
| Fiscal rules | 248 | 0.6075269 | 0.4600889 | 0 | 1 |

Source: Authors' calculations based on World Bank (2012), Prichard et al. (2014), Schaechter et al. (2012).

Figure 1: Evolution of tax revenues in developing countries (1988–2010)

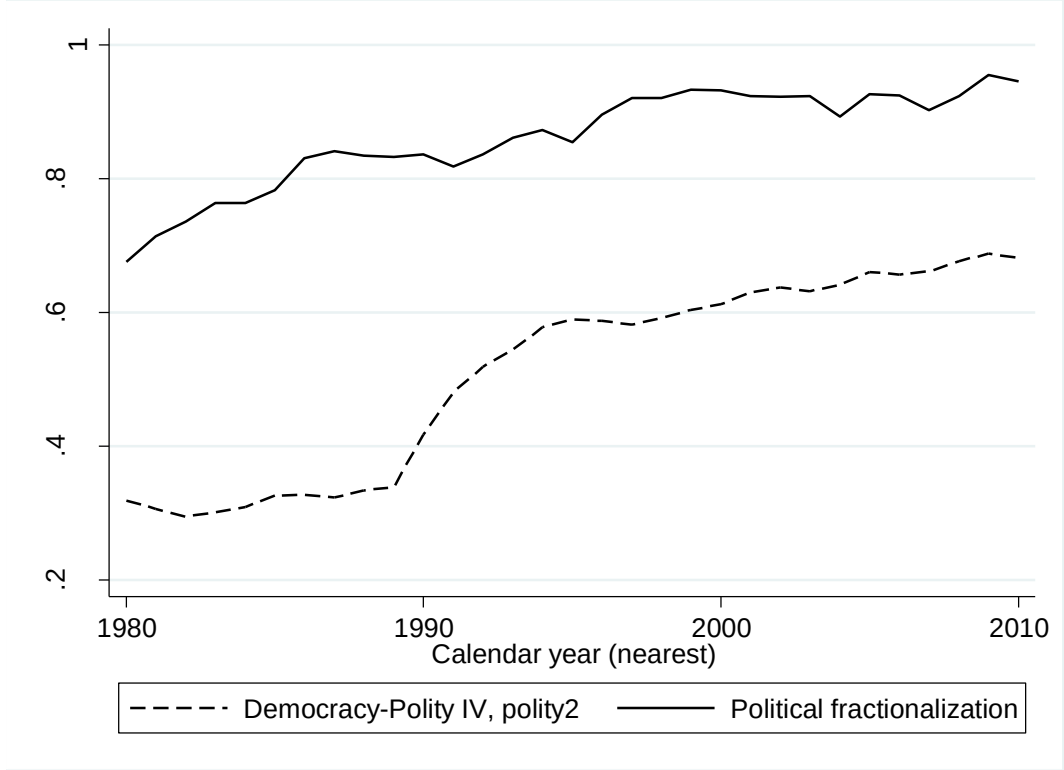



Source: Authors, based on ICTD data.

Figure 2 presents the evolution of our measure of political competition alongside with an indicator of democracy: the polity2 from the Polity IV project of the University of Maryland. This variable ranges between -10 (strongly autocratic) and +10 (strongly democratic). Overall, the figure suggests that political competition followed a steady upward trend over the period 1980–2010.

Figures 1 and 2 globally show that political competition and tax revenues followed an increasing trend over the period under study. The question is, therefore, whether this similar path indicates a positive causal relationship between tax revenues mobilization and political competition. The next section gives an answer to that question.

Figure 2: Evolution of political competition and democracy in the developing world (1988–2010)




Source: Authors, based on the Polity IV project, University of Maryland and the Database of Political Institutions (Keefer 2012).

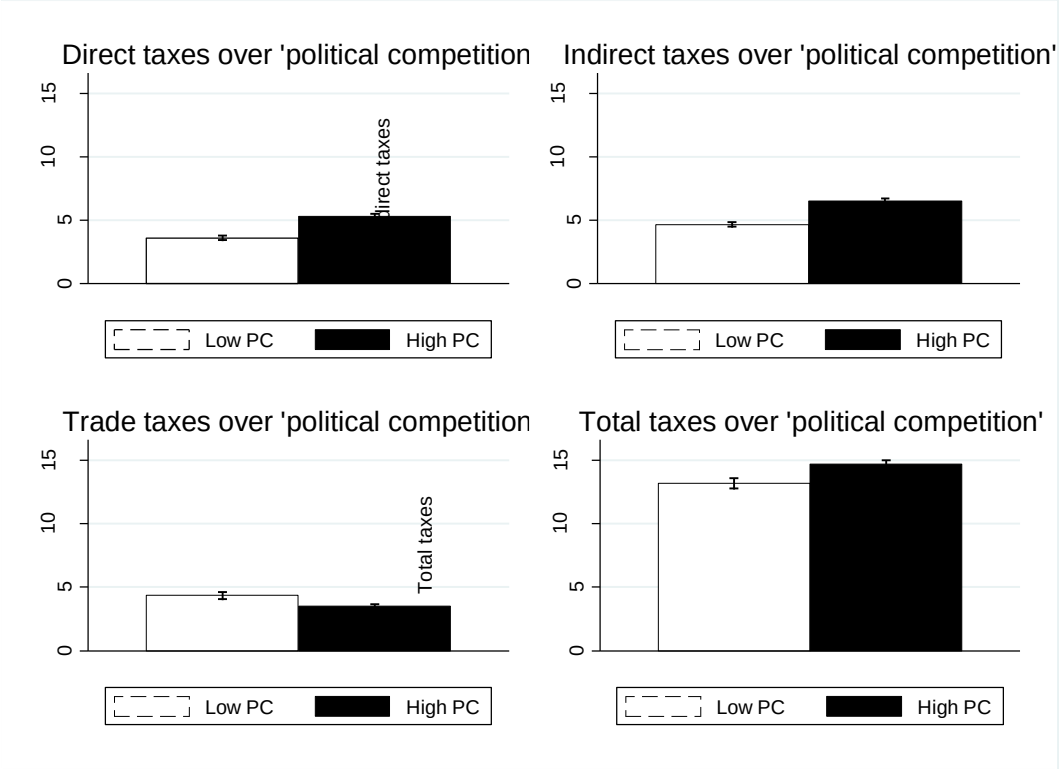
## 3 Results

This section reports the main results obtained from the estimation of the relationship between political competition and taxes in a sample of developing countries. This will be articulated around two sub-sections. First we discuss the results of the effect of political competition on the level of taxes. Second, we will look at the dampening or catalyst effect of fiscal rules on the underlying relationship.

### 3.1 Political competition and the level of taxes

We start our investigation by providing simple graphical evidence, which helps to figure out the nature of this relationship based on raw data. Figure 3 depicts the relationship between political competition and tax revenues in a sample of developing countries over the period 1988–2010. The variable of political competition is divided according to the median of the distribution, allowing comparison of the level of tax revenues between countries with high political competition and countries with low political competition.

Figure 3: Tax revenues (as % of GDP) and political competition, 1988–2010




Source: Authors' calculations based on ICTD GRD and the Database of Political Competition (Keefer 2012).

The lower right-hand side of the figure shows that total tax revenues are higher in countries with high political competition. This feature is also observed for direct and indirect taxes (see upper left-hand side and upper right-hand side). In contrast trade taxes seem to be lower in countries with high political competition. As mentioned earlier, this result may reflect the trade liberalization and the process of fiscal transition that occurred in most developing countries during the period under study.

The graphical evidence provided above reflects a mere correlation and may be biased by econometric issues such as reverse causality or the existence of confounding factors which affect the relation under study. In order to take into account the dynamic of the processes and to tackle the issue of the endogeneity (both concerning the lagged dependent variables and other potential endogenous variables of the model), Table 2 reports the results obtained from the System-GMM estimator.

The validity of the instruments is checked through the Hansen/Sargan test for over-identifying (OID) restrictions and the second-order autocorrelation test. The autocorrelation test suggests that there is no second-order serial correlation in the first-difference residuals. Furthermore, the Hansen test shows that the instruments used are valid.

Table 2: Political competition and tax revenues, System-GMM estimator

| Dependent variable | Total taxes | Direct taxes | Indirect taxes | Trade taxes |
|---|---|---|---|---|
| Total taxes | 0.56849*** | | | |
| | (0.16600) | | | |
| Direct taxes, t-1 | | 0.47037*** | | |
| | | (0.06987) | | |
| Indirect taxes, t-1 | | | 0.97664*** | |
| | | | (0.10413) | |
| Taxes on trade, t-1 | | | | 0.90005*** |
| | | | | (0.06472) |
| **Political competition** | **14.89208**** | **5.12793**** | **4.69941*** | **-1.68166**** |
| | **(6.51502)** | **(2.00706)** | **(2.70719)** | **(0.71317)** |
| Log (GDP per capita) | 2.05011* | -0.33099 | -0.23207 | -0.44247 |
| | (1.15174) | (0.64164) | (0.64264) | (0.42206) |
| Inflation | -0.00111** | -0.00018 | -0.00127*** | -0.00008* |
| | (0.00055) | (0.00024) | (0.00032) | (0.00005) |
| Trade openness | 0.03592 | 0.04571*** | 0.00850 | 0.01903* |
| | (0.03355) | (0.01687) | (0.01276) | (0.01106) |
| Debt % total export | 0.06028 | -0.00210 | 0.01372 | 0.01797 |
| | (0.04305) | (0.01415) | (0.01550) | (0.01229) |
| Oil rent % GDP | -0.20275** | -0.04273 | -0.03852** | -0.00481 |
| | (0.10266) | (0.04112) | (0.01832) | (0.01137) |
| Log (population) | -0.05688 | 0.38910* | -0.14904 | 0.05875 |
| | (0.49989) | (0.22481) | (0.16107) | (0.07837) |
| Intercept | -18.68927* | -7.82251 | 1.25903 | 1.51408 |
| | (10.96421) | (5.40979) | (4.12599) | (2.94988) |
| *N* | 374 | 297 | 320 | 325 |
| Number of countries | 89 | 80 | 86 | 85 |
| Number of instruments | 24 | 29 | 23 | 22 |
| AR(1) test | 0.03582 | 0.09737 | 0.00379 | 0.08289 |
| AR(2) test | 0.18987 | 0.60845 | 0.22220 | 0.21441 |
| Hansen OID test | 0.41862 | 0.17392 | 0.73085 | 0.71689 |

Note: Windmeijer (2005) standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' calculations.

The results obtained from the System-GMM estimator confirm the previous findings. In addition, the significance of the lagged dependent variable in all the specifications strongly supports the hypothesis of tax inertia. The first column presents the estimates of the effect of political competition on total tax revenues and suggests a strong positive effect at the 5 per cent level. Specifically, a one standard deviation increase in political competition leads to an increase of total tax revenues by 0.45 percentage point. Similarly, the results point to a positive effect of political competition on direct and indirect taxes. The observed effects for a one standard deviation increase in political competition are, respectively, 0.28 and 0.26 percentage point. In contrast, the effect of political competition is negative and significant at the 5 per cent level for

trade tax revenues. Specifically, a one standard deviation increase in political competition induces a decrease of trade tax revenues by 0.08 percentage point. Although the effect is quite small, this unexpected result may reflect the fact that democratic governments are more likely to be integrated in the global world and therefore tend to implement policies that reduce barriers to trade. The positive effect of political competition on tax revenues (total taxes, direct taxes and indirect taxes) is consistent with the finding of Besley and Persson (2013) and might be explained by the fact that more political competition induces more political legitimacy and increases the consent of citizens to pay taxes. The observed positive effect of political competition may also reflect a political attitude of aiming to attract the votes of the majority. In fact, in the short run, the government has to build on the state's fiscal capacity, such as improving the competencies of tax administration, capacity building, etc., therefore the government is inclined to tax more in the short run and/or provide less public goods. In a redistributive state of the world (different from the utilitarian framework), political control implies tax distortion in the sense that one group is always overtaxed to fund the redistribution. Therefore the government may choose to reduce indirect taxes but to increase direct taxes. This is consistent with the vote-maximizing assumption, since the government wants to gain the support of the largest part of the population, which is made up of low-skilled and poor people who are actually most affected by the indirect taxes (VAT for instance) since they work in the informal sector. The reduction of VAT will lead to more consumption and therefore more tax revenues. The increase of direct taxes (for instance income taxes) could lead to a potentially similar effect because the loss in income will shift the household's behaviour from investment or saving to more consumption.

Concerning the control variables, the results suggest that inflation is negatively correlated with the level of taxes. This finding holds irrespective of the type of taxes. Likewise, trade openness is positively correlated with direct taxes and trade taxes. Dependence upon oil revenues seems to reduce efforts towards tax mobilization. Finally, the effect of country size is not robust across specifications.

### 3.2 Political competition and taxes, do fiscal rules matter?

Fiscal rules are adopted by many developing countries in order to limit fiscal indiscipline and keep public finances on a sustainable path. In this section, we investigate the effectiveness of fiscal rules in helping the government avoid fiscal indiscipline. Indeed, we expect that the effect of political competition on tax variables will be less important in countries which have adopted fiscal rules.

The reasoning is that fiscal rules tie the hands of the government and prevent it from using fiscal policy to restore growth when the economy is going through a recession. This may aggravate the recession, leading to less consumption and less taxes. In this paper, we start by using an aggregate variable, which takes the value one for countries that have adopted fiscal rules and zero otherwise. Later, we exploit the granularity of the data by looking at the effects of debt rules and budget balance rules, which are the fiscal rules most used in developing countries. Our intention is actually to capture the willingness of a government to keep to a rigorous fiscal discipline despite the political constraints.

Table 3: Political competition and taxes in the presence of fiscal rules, System-GMM estimate

| Dependent variable | Total taxes | Direct taxes | Indirect taxes | Trade taxes |
|---|---|---|---|---|
| Total taxes | 0.75146*** | | | |
| | (0.12841) | | | |
| Direct taxes, t-1 | | 0.91097*** | | |
| | | (0.14919) | | |
| Indirect taxes, t-1 | | | 0.73683*** | |
| | | | (0.20061) | |
| Taxes on trade, t-1 | | | | 0.84984*** |
| | | | | (0.25868) |
| **Political competition** | **11.52832**** | **4.62162**** | **7.28193*** | **3.55170***** |
| | **(5.75587)** | **(2.05640)** | **(3.75230)** | **(1.24504)** |
| **Political competition*Fiscal rules** | **-16.15171**** | **1.47965** | **-5.31290*** | **-3.20249***** |
| | **(6.62817)** | **(2.30685)** | **(2.73391)** | **(1.17794)** |
| Fiscal rules | 10.56457*** | -0.02728 | 3.64755** | 2.00274** |
| | (3.91855) | (1.37550) | (1.66871) | (0.89681) |
| Log (GDP per capita) | 0.94020* | 0.10544 | -0.27915 | -1.38887 |
| | (0.50043) | (0.32956) | (0.60589) | (1.22090) |
| Inflation | -0.00107 | 0.00120 | -0.00107*** | 0.00002 |
| | (0.00182) | (0.00142) | (0.00030) | (0.00014) |
| Trade openness | 0.05316* | 0.01665 | 0.00521 | 0.01357 |
| | (0.02725) | (0.02065) | (0.01368) | (0.02154) |
| Debt | 0.05280 | -0.01720 | -0.01059 | -0.00756 |
| | (0.03959) | (0.03145) | (0.01872) | (0.01419) |
| Oil rent % GDP | -0.07731 | -0.11812** | -0.03938** | 0.13282** |
| | (0.06436) | (0.05202) | (0.01893) | (0.06377) |
| Log (population) | 0.32394 | 0.11324 | -0.19416 | -1.05982 |
| | (0.32236) | (0.21913) | (0.21174) | (0.67990) |
| Intercept | -19.77941** | -6.04814 | 2.50027 | 24.15177 |
| | (8.57065) | (5.85099) | (5.59080) | (17.65290) |
| N | 264 | 212 | 228 | 248 |
| Number of countries | 70 | 61 | 67 | 69 |
| Number of instruments | 33 | 34 | 25 | 36 |
| AR(1) test | 0.02129 | 0.02570 | 0.02817 | 0.08081 |
| AR(2) test | 0.12642 | 0.55702 | 0.39033 | 0.10423 |
| Hansen OID test | 0.76472 | 0.63628 | 0.82129 | 0.83271 |

Note: Windmeijer (2005) standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' calculation.

Table 3 reports the effect of political competition on the level of taxes, conditional on the adoption of fiscal rules. The results indicate that for countries without fiscal rules, the size of the effect of political competition for a one standard deviation increase is 0.35 percentage point for

total tax revenues, 0.25 percentage point for direct taxes, 0.41 percentage point for the indirect taxes and 0.17 percentage point for trade taxes. In contrast, for countries which have adopted fiscal rules, the net effect of political competition is reduced. Specifically, the size of the decrease is around 0.52 percentage point for total tax revenues, 0.13 percentage point for indirect taxes and -0.11 percentage point for trade taxes. There is no significant effect of fiscal rules on the relation between direct taxes and political competition. This finding suggests that fiscal rules are indeed a binding constraint for the politicians and prevent incumbents from resorting to fiscal extravagance. But at the same time, limiting the possibility of the government to use fiscal policy with discretion can lead to less tax collection. A striking fact is that the effect of political competition on trade taxes turns positive when we control for the presence of fiscal rules. This may suggest that the adoption of fiscal rules is a potential channel through which political competition affects trade taxes. However, this mechanism remains theoretically unclear and may deserve further analysis.

### *3.2.1 Political competition and taxes: evidence from debt rules?*

In this sub-section, we investigate the effect of debt rules on the relationship between political competition and tax revenues. Debt rules are rules that set a numerical long-lasting constraint on debt. For instance, in some developing regions (West Africa, Central Africa, Caribbean), debt rules require that public debt should be maintained (or reduced) below the threshold of 60 per cent of GDP. While this rule ensures that the country's public debt remains on a sustainable path, it limits the ability of governments to resort to external resources in order to finance crucial investments that may boost or restore economic growth. The resulting effect is less tax revenues stemming from weak economic growth.

Table 4 presents the System-GMM estimates of the underlying relationship. Irrespective of the type of taxes, the effect of political competition conditional on the adoption of debt rules is negative and significant. In other words, the effect of political competition on tax revenues is lower for countries that have adopted debt rules.

Compared to countries which did not adopt fiscal rules, the magnitude of the decline was 0.33 percentage point for total tax revenues, 0.21 percentage point for direct taxes, 0.18 percentage point for indirect taxes and 0.001 percentage point for trade taxes.

Table 4: Political competition and taxes in the presence of debt rules, System-GMM estimate

| Dependent variable | Total taxes | Direct taxes | Indirect taxes | Trade taxes |
|---|---|---|---|---|
| Total taxes | 0.80736*** | | | |
| | (0.08904) | | | |
| Direct taxes, t-1 | | 0.88866*** | | |
| | | (0.14172) | | |
| Indirect Taxes, t-1 | | | 0.70436*** | |
| | | | (0.16539) | |
| Taxes on trade, t-1 | | | | 0.90248*** |
| | | | | (0.19244) |
| **Political competition** | **7.48559**** | **3.65889**** | **6.67302*** | **2.73796**** |
| | **(3.43227)** | **(1.62001)** | **(3.63960)** | **(1.13482)** |
| **Political competition*Fiscal rules** | **-10.25447**** | **-4.20018**** | **-4.96222*** | **-1.55462** |
| | **(4.21193)** | **(1.95253)** | **(2.86223)** | **(1.90057)** |
| Fiscal rules | 6.82404** | 4.01722*** | 3.86885** | 0.05409 |
| | (2.78524) | (1.26057) | (1.77960) | (1.53193) |
| Log (GDP per capita) | 0.14168 | 0.41904 | 0.20732 | -0.43226 |
| | (0.48190) | (0.28826) | (0.67362) | (0.80288) |
| Inflation | -0.00179 | 0.00069 | -0.00113*** | -0.00005 |
| | (0.00192) | (0.00088) | (0.00024) | (0.00009) |
| Trade openness | 0.06227** | 0.01274 | 0.01064 | 0.02982** |
| | (0.02820) | (0.00941) | (0.00993) | (0.01307) |
| Debt % total export | 0.02542 | 0.00333 | 0.00663 | 0.00346 |
| | (0.03513) | (0.01383) | (0.01943) | (0.01208) |
| Oil rent % GDP | -0.07543 | -0.09596** | -0.05608** | 0.08981 |
| | (0.07264) | (0.03981) | (0.02687) | (0.06385) |
| Log (Population) | 0.44206 | 0.17398 | -0.06603 | -0.57720 |
| | (0.36017) | (0.14657) | (0.20234) | (0.81991) |
| Intercept | -14.34086 | -8.71330** | -3.29978 | 8.82102 |
| | (9.03750) | (3.78472) | (6.32900) | (18.35360) |
| *N* | 264 | 215 | 228 | 252 |
| Number of countries | 71 | 62 | 68 | 70 |
| Number of instruments | 32 | 33 | 29 | 34 |
| AR(1) test | 0.05296 | 0.00802 | 0.01520 | 0.07063 |
| AR(2) test | 0.15275 | 0.57041 | 0.61366 | 0.10009 |
| Hansen OID test | 0.64200 | 0.64885 | 0.84830 | 0.91384 |

Note: Windmeijer (2005) standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' calculation.

### *3.2.2 Political competition and taxes: evidence from budget balance rules?*

We turn to the effect of budget balance rules on the relationship between political competition and tax revenues. Table 5 reports the estimates of the effect of political competition conditional on the adoption of budget balance rules.

Table 5: Political competition and taxes in the presence of budget balance rules, System-GMM estimate

| Dependent variable | Total taxes | Direct taxes | Indirect taxes | Taxes on trade |
|---|---|---|---|---|
| Total taxes | 0.72995*** | | | |
| | (0.11587) | | | |
| Direct taxes, t-1 | | 0.86911*** | | |
| | | (0.18862) | | |
| Indirect Taxes, t-1 | | | 0.87824*** | |
| | | | (0.18624) | |
| Taxes on trade, t-1 | | | | 0.88289*** |
| | | | | (0.13950) |
| **Political competition** | **6.81223*** ** | **2.86429** ** | **7.28633** * | **3.82291** ** |
| | **(2.40690)** | **(1.20633)** | **(4.03409)** | **(1.88992)** |
| **Political competition*Fiscal rules** | **-9.61281** ** | **1.48443** | **-6.53300** ** | **-3.40942** ** |
| | **(4.28002)** | **(8.81672)** | **(3.01052)** | **(1.60788)** |
| Fiscal rules | 6.43635** | 0.15563 | 4.20765** | 2.17882* |
| | (2.61682) | (5.46190) | (1.93116) | (1.13376) |
| Log (GDP per capita) | 0.24008 | 0.01917 | -0.41198 | -0.11854 |
| | (0.53598) | (0.38042) | (0.51516) | (0.23223) |
| Inflation | -0.00247 | 0.00346 | -0.00129*** | 0.00008 |
| | (0.00198) | (0.00419) | (0.00034) | (0.00012) |
| Trade openness | 0.06196** | 0.01103 | 0.00572 | 0.00337 |
| | (0.02958) | (0.02160) | (0.01241) | (0.00764) |
| Debt % total export | 0.01492 | -0.04669 | 0.00554 | 0.00072 |
| | (0.03252) | (0.03269) | (0.02115) | (0.00925) |
| Oil rent % GDP | -0.08395 | -0.14669** | -0.02084 | 0.01188 |
| | (0.06044) | (0.07013) | (0.04696) | (0.02949) |
| Log (Population) | 0.35377 | 0.22029 | -0.25872 | -0.12102 |
| | (0.31426) | (0.23074) | (0.21642) | (0.15112) |
| Intercept | -11.90268 | -4.90372 | 3.50238 | 0.32744 |
| | (7.95638) | (5.70472) | (5.82366) | (4.04748) |
| *N* | 268 | 215 | 228 | 252 |
| Number of countries | 71 | 62 | 68 | 70 |
| Number of instruments | 32 | 24 | 21 | 37 |
| AR(1) test | 0.03762 | 0.03494 | 0.02974 | 0.33117 |
| AR(2) test | 0.11639 | 0.57638 | 0.40401 | 0.91662 |
| Hansen OID test | 0.71783 | 0.59681 | 0.43795 | 0.64750 |

Note: Windmeijer (2005) standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' calculations.

Budget balance rules are designed to set a constraint on the overall budget deficit. In most developing countries, the budget balance rule requires either that the basic fiscal balance should be in balance/surplus or that the overall budget deficit should be kept below 3 per cent of GDP.

Table 5 shows that except for direct taxes, the conditional effect of political competition on tax revenues is negative and significant. In other words, conditional on the adoption of budget balance rules, a one standard deviation increase in political competition induces respectively a decrease of 0.52 percentage point of total tax revenue, 0.66 percentage point of indirect tax revenues and 0.30 percentage point of trade taxes.

Overall, the empirical analysis suggests that political competition increases the level of tax revenues in developing countries. However, this effect is lower for countries which have adopted fiscal rules.

## 4 Conclusion

The current experience of developing countries indicates that taxation is a key component of a sustainable development. Therefore to understand the key drivers of the state's capacity to collect taxes is of great importance. This research builds on the literature of the political economy of taxation to investigate the effect of political competition on the level of tax revenues. Specifically, we investigate the effect on three types of taxes: direct taxes (income taxes, property taxes and corporate taxes), indirect taxes (taxes on goods and services) and taxes on trade. The political competition is measured as the probability of two deputies picked randomly belonging to two different political parties in a parliament. We explore the relationship between political competition and tax revenues using a sample of 94 developing countries over the period 1988–2010. Owing to the inertia of tax variables, we estimate a dynamic panel data model using the Blundell and Bond (1998) two-step System-GMM.

The analysis led to the following results: (i) Political competition positively and significantly affects total tax revenues. (ii) However, this general pattern differs slightly across the type of taxes. Political competition raises direct and indirect taxes, whereas it decreases the level of trade taxes. (iii) The net effect of political competition on tax revenues is negative for countries which have adopted fiscal rules. This is particularly the case for indirect taxes and trade taxes. The result remains robust irrespective to the type of rule (debt rule, budget balance rule).

Given the central role of taxation on the growth and redistribution process in developing countries, this study offers a new perspective on the analysis of the political factors shaping the design and implementation of tax policies. We specifically show that high political competition may imply more political support to legitimate state tax policies and therefore improve voluntary compliance among taxpayers. However, this positive effect can be dampened by fiscal rules which tie the hands of governments and do not allow them to use fiscal policy in a discretionary manner.

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## APPENDIX

List of countries

| | | | | |
|---|---|---|---|---|
| Albania | Comoros | Honduras | Mexico | St. Lucia |
| Algeria | Congo, Rep. | India | Mongolia | Tajikistan |
| Angola | Costa Rica | Indonesia | Morocco | Tanzania |
| Armenia | Cote d'Ivoire | Jamaica | Mozambique | Thailand |
| Azerbaijan | Ecuador | Jordan | Nepal | Togo |
| Bangladesh | Egypt, Arab Rep. | Kazakhstan | Nicaragua | Tunisia |
| Belarus | El Salvador | Kenya | Niger | Turkey |
| Belize | Ethiopia | Kyrgyz Republic | Nigeria | Uganda |
| Benin | Fiji | Lao PDR | Pakistan | Ukraine |
| Bolivia | Gabon | Lebanon | Panama | Vanuatu |
| Botswana | Gambia, The | Lesotho | Paraguay | Yemen, Rep. |
| Brazil | Georgia | Liberia | Peru | Zambia |
| Bulgaria | Ghana | Macedonia, FYR | Philippines | Zimbabwe |
| Burkina Faso | Grenada | Madagascar | Romania | |
| Burundi | Guatemala | Malawi | Rwanda | |
| Cambodia | Guinea | Malaysia | Samoa | |
| Cameroon | Guinea-Bissau | Mali | Senegal | |
| Cape Verde | Guyana | Mauritania | Sierra Leone | |
| Colombia | Haiti | Mauritius | Sri Lanka | |