UNITED NATIONS UNIVERSITY
UNU-WIDER

WIDER Working Paper 2017/32

Party system institutionalization and reliance on personal income tax

Exploring the relationship using new data

Armin von Schiller*

February 2017

In partnership with

ICTD

Abstract: This paper explores the effect of party system institutionalization on the reliance of tax systems on the personal income tax. As a first step, the paper re-examines the relationship between party system institutionalization and taxation patterns employing the recently launched Government Revenue Dataset. In a second step, the relationship in tested in different country subgroups, based on governance structures, availability of alternative sources of revenue, and geographical location. The main results remain fairly robust using the Government Revenue Dataset: where bureaucratic capacity is low, the effect of party system institutionalization is large and highly significant, whereas where bureaucratic capacity is high this effect disappears. Furthermore, the analysis using the Government Revenue Dataset provides additional insights into the large variance between groups of countries. The results indicate that the effect is particularly strong and robust in democratic regimes and where alternative sources of revenue are abundant. Overall, the findings can be considered to provide additional support for two claims: first, that taxation is best understood as a problem of credible commitment, particularly where bureaucratic capacity tends to be limited, and second, that institutionalized collective actors, such as political parties, play a key role in solving this problem.

Keywords: personal income tax, party system institutionalization, bureaucratic capacity, fiscal contractualism, fiscal capacity
JEL classification: D31, H24, H26, H30, D72, D78

Acknowledgements: I thank the participants of the workshop 'Taxation and Revenue Mobilization in Developing Countries', organized by UNU-WIDER and the ICTD on 14–15 March 2016 in Helsinki, Finland, for insightful comments and suggestions.

* German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE) Bonn, Germany, and Hertie School of Governance, Berlin, Germany; Armin.Schiller@die-gdi.de.

This study is an outcome of the Symposium on Taxation and Revenue Mobilization in Developing Countries organized by the International Centre for Taxation and Development (ICTD) and the United Nations University World Institute for Development Economics Research (UNU-WIDER). It is part of UNU-WIDER's research project on 'Macro-economic management (M-EM)'.

Information and requests: publications@wider.unu.edu

ISSN 1798-7237 ISBN 978-92-9256-256-4

Typescript prepared by Gary Smith.

The United Nations University World Institute for Development Economics Research provides economic analysis and policy advice with the aim of promoting sustainable and equitable development. The Institute began operations in 1985 in Helsinki, Finland, as the first research and training centre of the United Nations University. Today it is a unique blend of think tank, research institute, and UN agency—providing a range of services from policy advice to governments as well as freely available original research.

The Institute is funded through income from an endowment fund with additional contributions to its work programme from Denmark, Finland, Sweden, and the United Kingdom.

Katajanokanlaituri 6 B, 00160 Helsinki, Finland

1 Introduction

Domestic revenue mobilization in general and taxation in particular are high on the international development agenda. Recently launched international guidance documents such as the 2030 Agenda for Sustainable Development (SDG Agenda)[1] and the Addis Ababa Action Agenda[2] make this evident. Beyond declarations, there is a growing consensus that effective tax systems are key to inclusive and sustainable development, democratic governance, and state-building (Fjeldstad 2014; Mosley 2015; United Nations 2008; United Nations Millennium Project 2005). Consensus is far more difficult to reach when it comes to what development cooperation should focus on and how it should approach this issue.

Although often framed as a highly technical issue, which it surely is, most practitioners emphasize the key role that political will and leadership play in achieving the envisioned goals and reforms in this area. Sustained political commitment is seen as a prerequisite for success (IMF 2011). Against this background, research on the political economy of taxation has, in recent years, gained attention. Interestingly, this strand of literature is increasingly trying to go beyond identifying the relevance of political factors and actually understand the circumstances under which 'political will' emerges (Jibao and Prichard 2015). Bringing politics more systematically into the tax game is a welcome development (von Haldenwang and von Schiller 2016). In fact, it is surprising that there has been relatively little research in this field, although 'virtually every scholar agrees that taxes involve politics' (Gould and Baker 2002: 91).

One common concern when evaluating the growing literature on the political economy of taxation is the quality of the data it is based on. Large N comparative papers, in particular—but also individual country case studies—are always faced with this issue. The poor quality of the data calls into question not only the robustness of the results but also the implications that can be drawn from them. In an effort to offer a high-quality database that allows better comparability across countries and across time, the International Centre for Tax and Development (ICTD) has constructed the Government Revenue Dataset (GRD) (ICTD/UNU-WIDER 2015).[3]

On the basis of this newly launched database, this paper has two major goals. First, it replicates the results presented by von Schiller (2015), using the new database. Second, it explores the relationship between party system institutionalization, bureaucratic capacity, and the relevance of the personal income tax (PIT) in greater detail, by analysing it in specific subgroups of countries defined by governance structures, availability of alternative sources of revenue, and geographic location.

The focus of the paper is on tax composition and, more specifically, what factors affect the reliance by developing countries on the PIT. Developing countries are often blamed for exerting too little effort in collecting this particular tax. Interestingly, poor tax collection records in developing countries are commonly driven by the poor performance of progressive tax types such as the PIT (African Development Bank and OECD 2010; Gómez Sabaini 2007). Economic and administrative considerations partly explain why developing countries tend to put a stronger

[1] https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf; see, for instance, target 17.1.

[2] www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA_Outcome.pdf; see, for instance, paragraph 22.

[3] See description in Prichard et al. (2014). Additional material can be found at www.ictd.ac/datasets/the-ictd-government-revenue-dataset.

emphasis on less progressive tax instruments. But, as Ardanaz and Scartascini point out, from a political economy perspective, especially in relation to democratic developing countries, the high level of inequality and the low performance of more progressive tax types is a fact 'hard to reconcile with the workhorse model in political economy, that is, the median voter model of redistributive politics' (Ardanaz and Scartascini 2013: 1637).[4]

The starting point of the argument defended in this paper is that many developing countries simply do not have sufficient bureaucratic capacity to efficiently and effectively use coercion to tax their citizens. This is especially a challenge when facing wealthier taxpayers because they are usually in a better position to resist taxation. As a result, as striking as it might sound, the amount wealthy taxpayers pay in these contexts will depend to a large extent on how much they accept being taxed (Berens and von Schiller 2016).

Insights from the growing 'fiscal contractualism' literature (Moore 2008; Timmons 2005) suggest that in order to achieve an acceptance of taxation, governments and wealthy taxpayers have to (implicitly or explicitly) agree on the exchange of public services for tax contributions. But, beyond the content of this agreement, a major challenge is the often overlooked problem: that of credible commitment. If governments cannot convince taxpayers that benefits will be provided in exchange for tax contributions, wealthy taxpayers will always take a defensive stance towards taxation, regardless of how much government offers in exchange for tax contributions.

This paper focuses on this dimension, the expectation being that an institutional environment that strengthens the capacity of government to make a credible commitment to the better-off is key to achieving meaningful contributions from this sector of society. In particular, the paper analyses the effect of institutionalized political party systems, based on the argument that these offer more predictable political environments that mitigate the commitment problem and thereby facilitate the acceptance of taxes by wealthy taxpayers.

The replication using GRD data leads to substantially the same results as those reported by von Schiller (2015) using International Monetary Fund (IMF) data (IMF 2012). At low and middle levels of bureaucratic capacity, party system institutionalization has a strong positive effect on the relevance of PIT in the tax composition. This effect disappears where bureaucratic capacity levels are high. Also, party system institutionalization appears to play a particularly relevant role in democratic settings.

Beyond the replication using the new database, this paper offers a more detailed analysis of subsamples, offering additional insights into the large amount of variance within groups of countries. An especially appealing result is that party system institutionalization appears to play a particularly relevant role in countries where the amount of alternative sources of revenue is high.

The paper proceeds in six sections. After this introduction, Section 2 summarizes the argument proposed by von Schiller (2015). Section 3 presents the data and the empirical approach. In Section 4, the results for the replication are presented. Section 5 focuses on heterogeneous effect in subgroups defined by governance structures, alternative sources of revenue, and geographic location. Section 6 concludes, highlighting the policy implications that can be drawn from the analysis.

[4] On this point, see also Timmons (2010b).

2 The argument: institutionalized party systems and the relevance of progressive tax types

The basic argument developed by von Schiller (2015) starts from the observation that governments in many developing countries have only limited bureaucratic capacity. As a result, the implementation and enforcement of complex tax legislation is difficult (Bird 2010). The capacity of many governments to effectively and efficiently force taxpayers into compliance is simply very limited.

The challenge and limitations of implementing a tax system against the will of the taxed can be considered especially relevant when facing wealthier taxpayers. Due to the concentration of economic and social power, small groups of wealthy taxpayers can be assumed to have the political, social, and economic means to successfully resist taxation. If they decide not to comply with the tax norms, they have more numerous and attractive options than do regular citizens.

Taking this into account, the acceptance of taxes rather than external pressure to pay taxes, should be particularly important in explaining the level of tax contributions paid by wealthy taxpayers (Berens and von Schiller 2016). Looking at tax performance and tax contributions by the wealthy in developing countries from this analytical perspective leads to a shift in approach. To answer the question of why some countries rely more strongly than others on progressive taxes, the emphasis moves from exploring the constraints of governments (*What do government need in order to tax?*) to an exploration of wealthy taxpayers' incentives to pay taxes (*What do wealthy taxpayers need in order to accept progressive taxation on them*?).

In this vein, von Schiller (2015) discusses existing positive incentives to pay taxes and questions the commonly held assumption that wealthy taxpayers are a priori against taxes. Assuming the existence of positive incentives for wealthy taxpayers to pay taxes, von Schiller claims that rather than the problem being one of a lack of potential benefits, the problem hindering the taxation of the wealthy is one of credible commitment.

Using fiscal contractualism as the analytical approach, von Schiller (2015) elaborates on this idea and underlines that a fiscal agreement between taxpayers and the government that defines an exchange of tax contributions for state services should, in fact, represent an attractive solution for both taxpayers and governments (Levi 1989; Timmons 2005, 2010a). Yet, identifying such an agreement is not easy from a procedural perspective. In defining this agreement, the credibility issue can be expected to be especially salient because the policy process leading from revenue collection to the realization of expected benefits is not only long in terms of time, but also in terms of its complexity, as it involves many steps and institutions (Ascher 1989: 419).

It is undeniable that although the problems of credibility are present in all political systems, it is a matter of degree, and developing countries tend to have greater problems in this regard (Lupu and Riedl 2013; Scartascini et al. 2013). Most of these credibility problems can be conceptualized as principal–agent problems. Two particular challenges for developing countries emphasized by von Schiller (2015) are the problem of potential opportunistic behaviour by politicians and the problem of the political sustainability of agreements.

Against this backdrop, the final step of the argument is that institutionalized party systems can help mitigate the problems of policy sustainability and political opportunism via three

mechanisms.[5] First, longstanding parties and party systems foster more fluid and transparent interactions between politicians and wealthy taxpayers (or those representing their interests). Second, institutionalized party systems also tend to reduce the scope for opportunism by enhancing party discipline and sharpening the content profile of policy options (e.g. Mainwaring 1998). Third, institutionalized party systems also enhance centripetal forces in political systems and the capacity to find consensus on core policies.

Thus, in countries characterized by institutionalized political party systems, the capacity of the political system to credibly commit to fiscal agreements should be higher at a systemic and individual governmental level.[6] Following on from this, party system institutionalization is expected to have a positive effect on the level of personal income taxation that wealthier taxpayers deem acceptable. This effect is also expected to be stronger the lower the countries' level of bureaucratic capacity, as it is precisely where taxpayers cannot be forced into compliance that the capacity to lure them into accepting taxation can be expected to be most relevant.

Assuming that governments will predominantly employ progressive instruments to extract revenue from wealthy taxpayers, the argument above leads to the following testable hypothesis, proposed by von Schiller (2015: 14):

> The lower the level of bureaucratic capacity, the stronger the effect of party system institutionalisation on the relevance of progressive taxes in the tax composition.

3 Empirical approach

In order to replicate von Schiller (2015), I use exactly the same empirical approach and variable operationalization. In terms of econometric approach, a progression of three models is estimated: a random-effects model, a model including country-fixed effects, and a model including country- and year-fixed effects.[7]

In terms of variables, the main dependent variable is 'relevance of progressive taxes in the tax composition' operationalized as PIT as a share of total tax.[8] Data are provided by the GRD (ICTD/UNU-WIDER 2015) and the IMF (2012). Specifically, to construct the dependent variable

[5] There are many arguments linking political institutionalization and economic policy outcomes, although they are mostly not directly related to taxation (e.g. Flores-Macías 2010).

[6] This argument resonates with the argument made by Gehlbach and Keefer (2011) on ruling-party institutionalization as a mechanism to increase private investment levels in autocracies.

[7] For a discussion of the advantages of such a conservative approach, see Blaydes and Kayser (2011). Lax performance and party institutionalization are phenomena that tend to vary little over time within countries. Thus, in comparison to fixed-effects approaches, using a random-effects approach is attractive as it makes use of the between variation. The country-fixed effects estimations, however, take into account that time-invariant characteristics of countries not controlled for in the model could bias the results. Finally, the year-fixed effect controls for temporary effects such as global economic crises that might affect all countries at the same time.

[8] Making general incidence assumptions about different tax types is a highly contested issue. Since the path-breaking paper by Shah and Whalley (1991), much of the debate has focused on the consumption tax. Most studies, however, support the idea that personal income taxes tend to be fairly progressive, especially if compared to other tax instruments.

with the new GRD data, the variable 'Tax individs' (tax on individuals) is divided by 'Taxes ex sc' (taxes excluding social contributions).[9]

The hypothesis to be analysed implies an interaction between party system institutionalization and bureaucratic capacity. In accordance with von Schiller (2015), party system institutionalization is operationalized as 'Party age'. Data come from the Database of Political Institutions (Beck et al. 2001). As in von Schiller (2015), the variable is logged for linearity issues.[10] Bureaucratic capacity is operationalized as 'Bureaucratic quality' from the International Country Risk Guide (ICRG) Database (Political Risk Services Group 2012). It codes 'the institutional strength and quality of the bureaucracy' in a range from zero to four.

All control variables included in von Schiller (2015) are also included in this study. Therefore, the list of controls includes economic structure, operationalized as 'Agriculture, value added as percentage of GDP' (World Bank 2012); economic development level, operationalized as 'GDP per capita in constant US dollars' (World Bank 2012); trade openness, operationalized as 'Economic globalization' (Dreher 2006);[11] degree of urbanization, operationalized as 'Urban population'; alternative sources of revenue, operationalized as 'Non-tax revenue',[12] and inequality, operationalized as a Gini coefficient (Solt 2009).[13]

The analysis is restricted to the time period after 1991, acknowledging better data quality and inclusion of a higher number of developing countries. Also, the availability of other variables—most prominently, bureaucratic capacity—was highly limited until the 1990s.

4 Results

This section presents the results of what can be considered the pure replication of the results presented in von Schiller (2015), using IMF data. In this vein, this section exploits only those data from the GRD that overlap with the analysis using IMF data. In the following section, the data provided by the GRD are exploited fully.

Table 1 presents the results of three model specifications, using the IMF and GRD data respectively. Columns 1 and 4 correspond to the generalized least squares (GLS) random-effects model without country- and year-fixed effects. Columns 2 and 5 show results of fixed-effects

[9] The result is multiplied by 100 to facilitate interpretation. All estimations are based on the Core Dataset ('Merged') in order to include as many countries as possible.

[10] Party age appears a reasonable operationalization as it emphasizes the stability and continuity of political party systems over time. This is the crucial dimension for the argument as this continuity is considered to enhance the predictability of the system. Last update released January 2013. The variable codes the average age of the two biggest parties in government and the main party in the opposition.

[11] This is a composite indicator based on actual transnational financial flows and capital restrictions.

[12] In essence, this variable is constructed by subtracting tax revenue from total revenue figures. ICTD and IMF data are used to construct this variable. In different model specifications, I employ different sources, although for consistency the preferred option is always to employ the source also used to construct the main dependent variable. See discussion on this in Section 5.1.

[13] The Gini index is referred to for market income inequality (before taxes and transfers).

models without year-fixed effects. Columns 3 and 6 present the results of fixed-effects models, including year-fixed effects—the preferred specification.[14]

Table 1: Main results

	PIT as share of total tax					
	IMF data			GRD data		
	(1)	(2)	(3)	(4)	(5)	(6)
Party age (log)	2.271*	4.642***	4.602***	2.205*	3.837***	3.611***
	(1.87)	(3.31)	(3.29)	(1.83)	(2.96)	(2.92)
Bureaucratic capacity	1.942	3.610**	3.358**	1.757*	2.447***	2.288**
	(1.51)	(2.50)	(2.33)	(1.93)	(2.75)	(2.54)
Party age (log) × bur. cap.	−0.422	−1.234***	−1.185**	−0.450	−0.959***	−0.884**
	(−1.03)	(−2.67)	(−2.57)	(−1.34)	(−2.83)	(−2.63)
GDP p.c. (log)	4.064***	−3.202	−3.605	3.497***	−4.508**	−5.986**
	(3.50)	(−1.25)	(−1.25)	(2.66)	(−2.12)	(−2.40)
Urban pop. (%)	0.0791	0.231*	0.242*	0.113	0.206	0.167
	(1.16)	(1.96)	(1.84)	(1.39)	(1.59)	(1.22)
Trade openness	0.0124	0.0224	0.0354	−0.0547	−0.000353	−0.00276
	(0.33)	(0.60)	(0.74)	(−1.28)	(−0.01)	(−0.06)
Gini index	0.0313	0.00402	0.00595	0.0777	0.0524	0.0459
	(0.36)	(0.04)	(0.06)	(0.70)	(0.43)	(0.37)
Agriculture (V.A.)	0.148	−0.0867	−0.112	0.0907	−0.0723	−0.0801
	(1.50)	(−0.84)	(−1.05)	(0.91)	(−0.86)	(−1.07)
Non-tax revenue (IMF)	0.0151	−0.0414	−0.0434			
	(0.21)	(−0.59)	(−0.64)			
Consolidated non-tax revenue (GRD)				0.139	0.177	0.164
				(0.79)	(1.04)	(1.08)
Constant	−31.50***	21.40	23.67	−24.99**	37.24*	52.31**
	(−2.84)	(0.92)	(0.89)	(−2.01)	(1.82)	(2.32)
N	1,157	1,157	1,157	929	929	929
No. countries	93	93	93	82	82	82
Country FE	No	Yes	Yes	No	Yes	Yes
Year FE	No	No	Yes	No	No	Yes

Notes: *t* statistics in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; the RE-model includes robust standard errors. Both FE models include clustered standard errors by country.

Source: author's calculations based on GRD and IMF data.

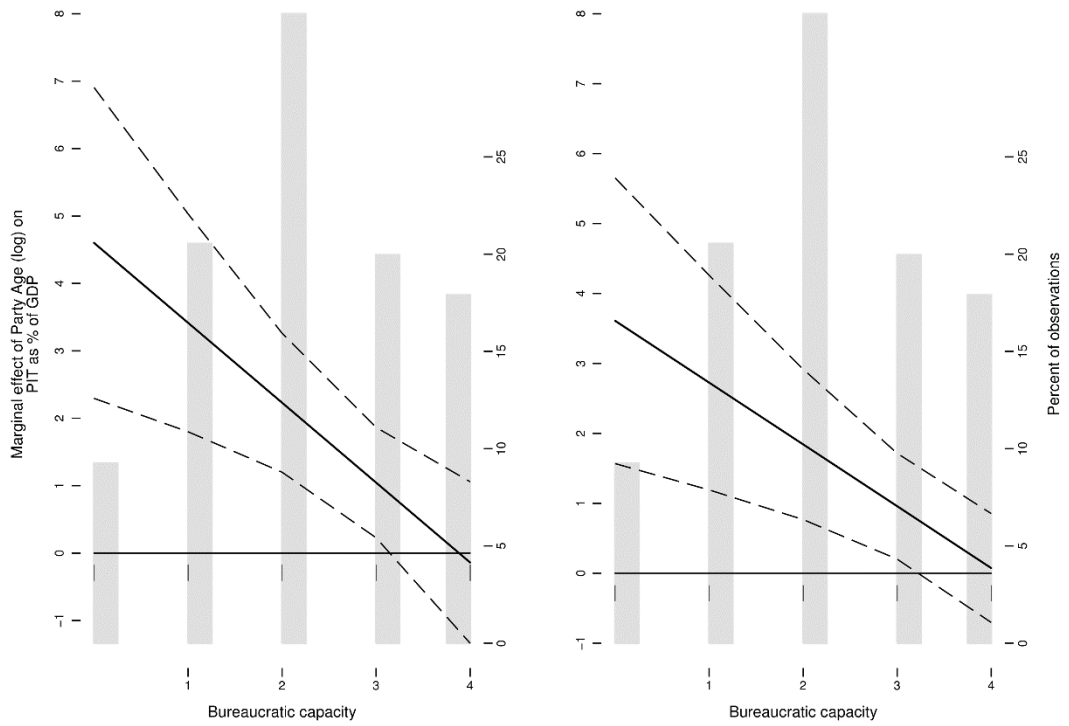
The models work similarly to each other, regardless of whether IMF or GRD data are used. The control variables also behave similarly and show the expected signs in both cases. The estimated

[14] For the rationale behind this progression of specification, see Blaydes and Kayser (2011). The main idea is that employing all three approaches minimizes the risk of bias and represents a cross-check for the validity of individual estimations. The improvement in the identification that comes with using different fixed effects comes at the cost of reducing the variation that the models can work with.

size of the effect is somehow stronger at low level of bureaucratic capacity when IMF data are employed, but in essence the estimation results are very similar.

Figure 1 illustrates the interaction effect for the preferred model using each of the data sources.[15] The solid sloping line represents the marginal effect of party system institutionalization. The dashed lines delimit the 90 per cent confidence interval. The histogram in the background shows the percentage of observations at different levels of bureaucratic capacity for the whole sample.

Figure 1: Marginal effect of party system institutionalization on the relevance of PIT in the tax composition using IMF and ICTD data



The figure on the left corresponds to Model 3 in Table 1 (IMF Data). The figure on the right corresponds to Model 6 in Table 1 (ICTD Data).

Source: author, based on GRD and IMF data.

The interaction effect behaves in similar way, regardless of the source of the revenue data employed. The downward slope indicates that the effect of party system institutionalization is weaker the higher the level of bureaucratic capacity. In both cases, the effect is not statistically significant at the highest level of bureaucratic capacity (4), while it is significant at all other levels. Also, in both cases the confidence intervals overlap at all levels of bureaucratic capacity, which underlines that there is no evidence for claiming that the marginal effects of party system institutionalization at different levels of bureaucratic capacity are significantly different from each other. What the evidence supports is that while the size of the effect is not necessarily smaller, the certainty of an effect is higher, the lower the level of bureaucratic quality.

The fact that the estimated coefficient for the multiplicative term is bigger when using GRD data (−0.884 in model 6 vs. −1.185 in model 3, both coefficients being statistically significant) suggests that the decrease of the effect of party system institutionalization associated with a higher level of

[15] The construction of the graph relies on the code provided by Brambor et al. (2006).

bureaucratic capacity is estimated to be lower when using the new dataset. However, from an econometric perspective this difference is marginal.

Overall, the results illustrated in Figure 1 and Table 1 show that the main result presented by von Schiller (2015) is robust to estimation using the GRD data. In this vein, the results provide additional supportive evidence that bureaucratic capacity moderates the positive effect of party institutionalization on the relevance of the PIT in the tax composition.

5 Exploiting the full sample

In the previous section, as a first step, the analysis was focused on replicating the results of von Schiller (2015) using the new GRD data. To maximize comparability of the analysis, in this first exercise the sample was restricted to observations included in the analysis using the IMF data. As a result, only part of the more comprehensive GRD data was exploited.

In this section, the full data available are employed. First, I combine the GRD and IMF sources in different ways to analyse how sensitive the results are to using a particular source. Second, relying only on the GRD data, I analyse different subsamples to test whether the effect is homogeneous across them and whether a particular group of countries is driving the main results.

5.1 Sensitivity to different tax sources

When it comes to testing the sensitivity of the results to the use of different tax data sources, the two variables based on tax data are the most relevant ones: the dependent variable 'PIT/total tax' and the control variable 'Non-tax revenue'. Both variables can be constructed using the GRD and the IMF dataset.

Table 2 presents the results of four estimations, which combine the sources for these variables in all four possible ways. The specification presented in column 1 relies completely on GRD data. Column 2 presents the results of the specification employing the GRD data for the dependent variable and IMF data for constructing the 'Non-tax revenue' control. The specification presented in column 3 is based on IMF data to construct the dependent variable and GRD data to construct the control. Finally, the specification reported in column 4 relies completely on IMF data.

Table 2: Estimations using different sources for the main tax variables

	PIT as share of total tax			
	(1)	(2)	(3)	(4)
Party age (log)	1.287	2.914**	2.364**	4.602***
	(1.10)	(2.50)	(2.09)	(3.29)
Bureaucratic capacity	1.085	1.986**	2.186**	3.358**
	(1.19)	(2.26)	(2.27)	(2.33)
Party age (log) × bur. cap.	−0.221	−0.700**	−0.637*	−1.185**
	(−0.69)	(−2.22)	(−1.83)	(−2.57)
GDP p.c. (log)	−5.867**	−3.741	−7.498**	−3.605
	(−2.47)	(−1.63)	(−2.27)	(−1.25)
Urban pop. (%)	0.0886	0.156	0.119	0.242*
	(0.62)	(1.21)	(0.74)	(1.84)
Trade openness	−0.00550	−0.0152	0.0653	0.0354
	(−0.13)	(−0.40)	(1.16)	(0.74)
Gini index	−0.0429	0.0436	−0.0962	0.00595
	(−0.47)	(0.39)	(−1.13)	(0.06)
Agriculture (V.A.)	−0.0164	−0.0625	−0.0538	−0.112
	(−0.32)	(−0.91)	(−0.80)	(−1.05)
Consolidated non-tax revenue	0.0503		0.0894	
	(0.48)		(0.67)	
Non-tax revenue		−0.0288		−0.0434
		(−0.35)		(−0.64)
Constant	64.39**	36.25	71.86**	23.67
	(2.51)	(1.58)	(2.15)	(0.89)
N	1,079	1,029	1,154	1,157
No. countries	94	88	96	93
Source DV	GRD	GRD	IMF	IMF
Source Non-tax revenue	GRD	IMF	GRD	IMF

Notes: *t* statistics in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. All models include clustered standard errors by country.

Source: author's calculations, based on GRD and IMF data.

The results indicate that the effect appears to be less strong and reliable if all the data in the GRD are used. In fact, in the first specification, which relies completely on GRD data, the effect is no longer significant at any level of bureaucratic capacity.[16] This suggests that the results are sensitive

[16] If 'Non-tax revenue' and 'Income tax from natural resources' are added and controlled for, the results are very similar to the original. This further development of the analysis is reasonable as such an operationalization would more closely correspond to the idea of 'unearned income' (Moore 2001) which lies behind my argument. Also the possibility of extracting such fine-grained data on tax revenue is one of the strengths of the new ICTD GRD, which should be explicitly highlighted.

to the inclusion of particular countries.[17] Against this background it is more relevant to look at the effect in particular subsamples of countries, which is the goal of the next section.

5.2 Analysis of subsamples

In the following, I analyse the relationship between party system institutionalization, bureaucratic capacity, and the relevance of progressive taxes in the tax composition in different subsamples. First, I look at the relationship in democratic and autocratic states, using different operationalizations for the political regimes variable. In this context, I also differentiate between different autocratic regimes, relying on the Autocratic Regime Database provided by Geddes et al. (2014).[18] Second, I analyse whether the relationship is moderated by the availability of alternative sources of revenue. Third, the question of whether the effect is driven by results for countries located in particular regions is tested.

Political regimes

The effect of different political regimes on tax collection is one of the aspects that has received most attention in the literature on the political economy of taxation in developing countries (e.g. Bird et al. 2008; Cheibub 1998; García and von Haldenwang 2015; Kenny and Winer 2006; Profeta and Scabrosetti 2010). Although faced with major concerns with regard to robustness and endogeneity, results provide evidence that democracies tend to tax more and rely more strongly on progressive taxation.

From a theoretical perspective, there are good reasons to expect that political regime should affect the effect explored in this paper. First, the negotiation process between political and social actors, as well as the political dynamics, can be expected to be very different in different political regimes. Second, in autocracies, decision-making processes will be less public and the number of persons involved in that process is likely to be very limited. Furthermore, while increasing the tax burden on citizens in democracies might be expected to carry a political cost in decreasing the chance of re-election, this fear should be less pronounced in autocracies.

Finally, and most importantly for this analysis, the role that parties play in each context can be expected to vary strongly. This is crucial, given the operationalization of one of the main independent variables: party system institutionalization. Party age might be capturing very different aspects in both settings. While in autocracies, due to restricted electoral competition, a higher level of Party age will predominantly capture the consolidation of the autocratic regime, in democracies, Party age is expected to capture the stability in electoral competition and the existence of consolidated political actors and networks. The latter dimension is the one the argument here is based on. By contrast, the former dimension speaks to a different logic. If consolidation of power in one party were to be connected to tax composition, this would be due to a different causal mechanism than the one discussed here.[19]

Table 3 presents the results for specifications run on different samples, including exclusive observations in democratic or autocratic regimes. To identify the political regime, I use three different measures: one based on the Database on Political Institutions (Keefer 2012), one based

[17] The Appendix lists the observations that are part of the estimation sample when employing IMF data, but not when employing the GRD data.

[18] The database can be accessed at: http://sites.psu.edu/dictators.

[19] See discussion on this aspect in von Schiller (2015).

on the Boix–Miller–Rosato Dichotomous Coding of Democracy Dataset (Boix et al. 2013) and one based on the Autocratic Regime Database (Geddes et al. 2014).

Table 3: Estimation for different political regimes

	DPI Database		Geddes et al.		Boix et al.	
	(1)	(2)	(3)	(4)	(5)	(6)
Party age (log)	1.856	4.453***	7.189***	3.180*	2.013	2.829
	(0.67)	(3.10)	(2.84)	(1.94)	(0.96)	(1.57)
Bureaucratic capacity	6.646	2.697**	12.71***	1.941*	7.213*	1.820
	(1.34)	(2.55)	(3.67)	(1.77)	(1.92)	(1.53)
Party Age (log) × bur. cap.	−2.821	−1.011**	−4.001***	−0.708	−2.173*	−0.575
	(−1.52)	(−2.57)	(−3.41)	(−1.62)	(−1.73)	(−1.21)
GDP p.c. (log)	14.76**	−6.296***	8.771	−5.143**	6.981	−5.661**
	(2.66)	(−3.54)	(1.44)	(−2.09)	(0.98)	(−2.24)
Urban pop. (%)	−0.221	0.132	0.354	0.0756	−0.196	0.0970
	(−0.41)	(0.94)	(0.96)	(0.51)	(−0.56)	(0.60)
Trade openness	0.107	0.0360	−0.0733	0.0207	−0.0178	0.00718
	(0.72)	(1.00)	(−0.45)	(0.56)	(−0.18)	(0.20)
Consolidated bon-tax revenue	−0.169	0.0908	−0.201*	0.178	−0.122	0.151
	(−1.51)	(0.69)	(−1.86)	(0.87)	(−1.11)	(0.72)
Gini index	−0.151	0.0759	0.0398	0.0819	−0.0225	0.0587
	(−0.56)	(0.75)	(0.21)	(0.72)	(−0.15)	(0.51)
Agriculture (V.A.)	0.199**	−0.0163	0.195*	−0.0601	0.224***	−0.0343
	(2.67)	(−0.21)	(1.98)	(−0.82)	(3.66)	(−0.42)
Constant	−85.33	52.90**	−87.96	51.92**	−35.96	56.09**
	(−1.47)	(2.46)	(−1.52)	(2.00)	(−0.56)	(2.17)
N	224	866	255	795	293	832
No. countries	40	79	31	65	39	72

Notes: *t* statistics in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. All models include clustered standard errors by country. Models 2, 4, and 6 correspond to democracies; models 1, 3, and 5 correspond to autocracies.

Source: author's calculations, based on GRD and IMF data.

Two results are especially interesting to highlight. Concerning democracies, as shown in Figure 2, the results are very robust across the different specifications.[20] In democratic regimes, party system institutionalization consistently has a positive effect on the relevance of PIT in the tax composition at low levels of bureaucratic capacity, and this effect disappears where bureaucratic capacity is high.[21]

[20] Employing the DPI operationalization based on the Database of Political Institutions—i.e. countries are considered democracies if the value of the Legislative Index of Electoral Competitiveness (LIEC) is higher than 6 ('largest party got less than 75 per cent') and the fraud variable is zero (meaning no fraud was identified)—is the preferred option, as rather than relying on one aspect of the governance structure, this measure is based on the level of electoral competition. This is also the operationalization used for the result presented by von Schiller (2015).

[21] The effect in column 6 misses statistical significance at the level 0 for bureaucratic level, but gains it at levels 1, 2, and 3. Overall, from a statistical point of view, the estimated effect is very similar to the other ones.

Figure 2: Marginal effect of party system institutionalization on the relevance of PIT in the tax composition in democracies

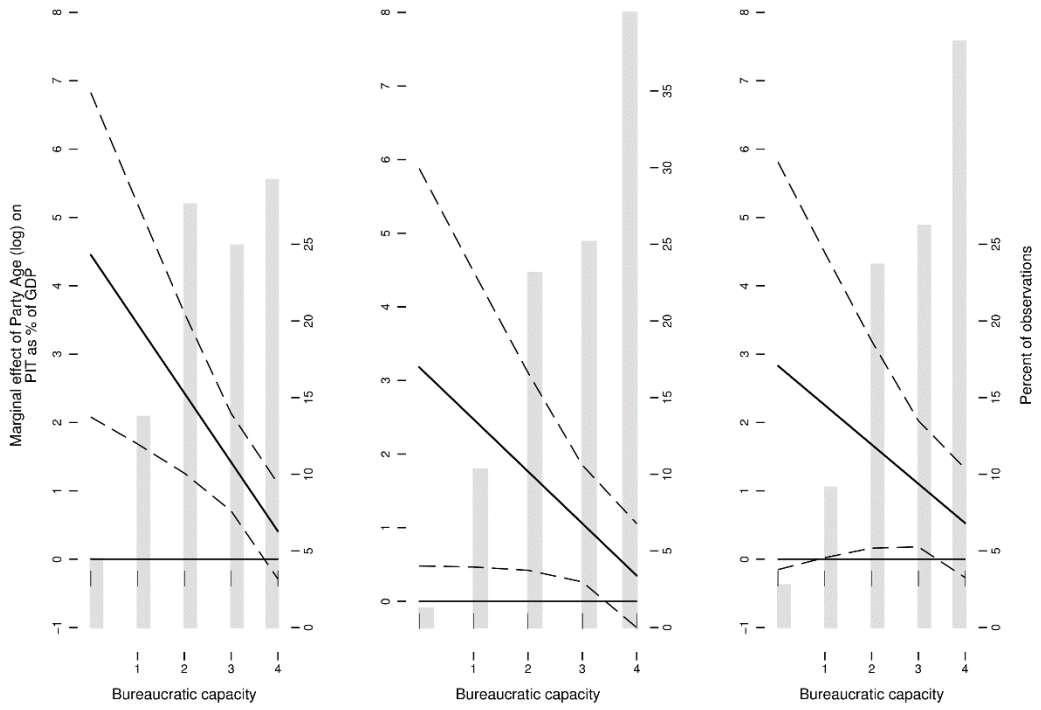


Figure based on models 2, 4, 6 in Table 3. Democracies as defined employing DPI (left), Geddes et al. (centre), Boix et al. (right)

Source: author, based on GRD and IMF data.

The results provide a less strong message in the case of autocracies. As Figure 3 illustrates, in all model specifications, the interaction effect behaves similarly, but the estimated coefficients are quite sensitive to the different operationalizations of regime type.

In all three cases, the downward slope suggests that the effect of party system institutionalization is weaker the higher the level of bureaucratic capacity. All models also indicate that at high level of bureaucratic quality the effect is negative and statistically significant.

When it comes to the effect at low levels of bureaucratic capacity, while the estimation using Geddes et al. (2014) to identify autocracies shows a strong positive and statistically significant effect, in the other two estimations using alternative operationalizations the effect misses statistical significance. The sensitivity of the results is not surprising, given the small size of the samples, but, when added to the fact that these results differ strongly from those reported by von Schiller (2015), it is safe to call for exceptional caution in interpreting any results in this context.

Figure 3: Marginal effect of party system institutionalization on the relevance of PIT in the tax composition in autocracies

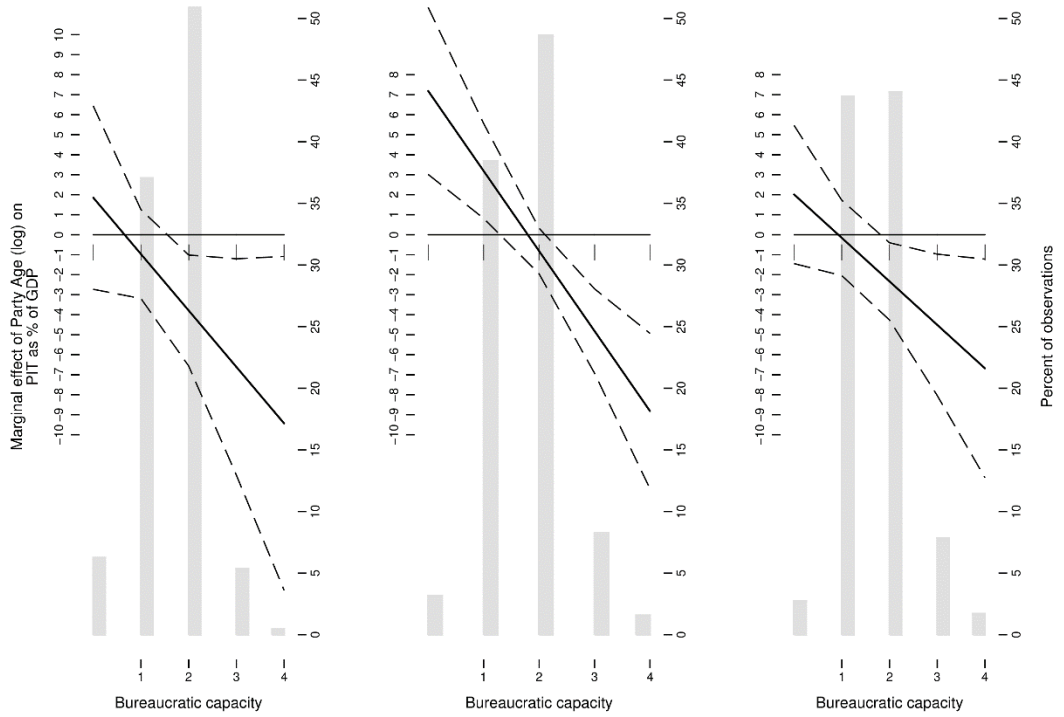


Figure based on models 1, 3, 5 in Table 3. Autocracies as defined employing DPI (left), Geddes et al. (centre), Boix et al. (right)

Source: author, based on GRD and IMF data.

In addition, from a theoretical perspective, while arguing that the effect should be similar in all democratic settings, it is harder to argue that party system institutionalization should have a homogeneous effect in all autocracies. In fact, it seems reasonable to expect that features of different autocracies will strongly influence what effect party system institutionalization might have on tax collection.[22] While the strength of the party might be crucial in one-party regimes, political parties as such might have little influence in personalistic and military regimes.

The analysis of autocratic subtypes supports this expectation. Table 4 shows the results for more specific autocratic subregimes, following the categories proposed by Geddes et al. (2014). Available data only allow an estimation of the models for party- based and personalist regimes, but the differences between these regimes are already remarkable: while the effect is very strong at low levels of bureaucratic capacity, in the case of party regimes it is far weaker and statistically non-significant in personalist regimes.

[22] Gehlbach and Keefer (2012) analyse the effect of institutional specificities of different autocracies on private investment.

Table 4: Geddes subregimes

	PIT as share of total tax		
	Democracies	Personalist regimes	Party regimes
Party age (log)	3.180*	3.622	12.72***
	(1.94)	(1.72)	(3.66)
Bureaucratic capacity	1.941*	8.910***	13.08
	(1.77)	(3.21)	(1.42)
Party age (log) × bur. cap.	−0.708	−2.724**	−4.412
	(−1.62)	(−2.63)	(−1.50)
GDP p.c. (log)	−5.143**	−12.46***	16.56***
	(−2.09)	(−3.62)	(11.63)
Urban pop. (%)	0.0756	0.108	0.142
	(0.51)	(0.29)	(0.62)
Trade openness	0.0207	0.310***	−0.294**
	(0.56)	(3.72)	(−2.38)
Consolidated non-tax revenue	0.178	0.128*	−0.332
	(0.87)	(1.94)	(−0.84)
Gini index	0.0819	−0.374***	0.0409
	(0.72)	(−6.10)	(0.13)
Agriculture (V.A.)	−0.0601	0.131	0.215**
	(−0.82)	(1.18)	(2.29)
Constant	51.92**	76.89**	−136.1***
	(2.00)	(2.28)	(−5.77)
No. observations	795	89	156
No. countries	65	16	16

Notes: *t* statistics in parentheses; * $p < 0.01$, ** $p < 0.05$, *** $p < 0.01$. All models include country- and year-fixed effects. Standard errors are clustered by country.

Source: author's calculations, based on GRD and IMF data.

All in all, while there is strong evidence supporting the idea that institutionalized party systems are connected to a higher relevance of PIT in the tax mix at low and middle levels of bureaucratic capacity, evidence is weak for the same applying to autocracies. Further analysis of which institutional features are particularly relevant in autocracies would be worth pursuing in order to develop a better understanding of the factors that shape the reality of taxation in each specific regime.

5.3 Alternative sources of revenue

The expectation that the availability of alternative sources of revenue might distort the relationship between party system institutionalization, bureaucratic capacity, and the relevance of progressive taxes is straightforward. If governments can rely on alternative sources of revenue, they will have fewer incentives to put pressure on citizens to contribute via taxation (Herb 2005; Lucas and Richter 2016; Morrison 2009). Moreover, citizens are unlikely to be willing to contribute if they feel that the state is already well financed.

In terms of the argument developed by von Schiller (2015), this implies that the availability of a considerable amount of financial resources from alternative sources of revenue should make the

definition of ambitious fiscal agreement between the government and the better-off citizens even harder. Thus, the existence of an institutionalized party system should be even more relevant in these contexts.

To test this argument, I run the main specification for different subgroups of countries characterized by having higher or lower levels of revenue from alternative sources. Revenue from natural resources is a key dimension to consider in this discussion. It is often difficult to record revenue from natural resources accurately. One main reason for this is that these revenues are sometimes coded as tax revenue (most prominently through the corporate income tax) and sometimes as non-tax revenue (Prichard et al. 2014). To deal with this issue, I generate a measure called 'Rents' that adds 'Non-tax revenue' to the 'Resource component of taxes on income, profits, and capital gains'.[23]

To define the subgroups I employ two approaches. The first approach relies on individual country–year observations of the 'Rents' variable, and divides the sample into four subsamples, including observations belonging to the higher 75th percentile of the sample, observations that are higher than the median, observations that are lower than the median, and observations belonging to the lower 75th percentile of the sample.

The second approach does not rely on country–year observations, but on the countries' average value for the 'Rents' variable. Based on this value, the sample is again divided into four subsamples: one including only those countries with an average value above the 25th percentile, one including countries with an average value above the median, one including countries with an average value below the median, and one including only those countries with an average value below the 75th percentile

Table 5 shows the results for estimations run on the eight different samples.

[23] Correspond to the variables 'cons nontax rev' and 'resource tax inc prof cg' in the ICTD dataset (see footnote 3).

Table 5: Subgroups based on availability of alternative sources of revenue

	Subsamples based on country–year observations of the variable 'Rents'				Subsamples based on country means for the variable 'Rents'			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Party age (log)	4.876**	3.873	0.280	1.462	5.492**	4.758***	−0.0351	1.432
	(2.26)	(1.57)	(0.32)	(1.42)	(2.18)	(2.94)	(−0.04)	(1.40)
Bureaucratic capacity	2.584	0.971	−0.296	0.603	3.004	2.076	−0.496	0.626
	(1.50)	(0.52)	(−0.25)	(0.65)	(1.47)	(1.39)	(−0.36)	(0.67)
Party age (log) × bur. cap.	−1.165**	−0.890	0.295	−0.0948	−1.331**	−1.105**	0.443	−0.107
	(−2.03)	(−1.29)	(0.80)	(−0.31)	(−2.02)	(−2.11)	(1.02)	(−0.35)
GDP p.c. (log)	−2.464	−1.147	5.959	4.368	−1.106	−3.969	6.963	4.593
	(−0.98)	(−0.31)	(0.93)	(0.84)	(−0.38)	(−1.26)	(1.20)	(0.89)
Urban pop. (%)	0.0663	−0.0383	0.135	0.222	0.0628	−0.0620	0.213*	0.261
	(0.44)	(−0.16)	(0.64)	(1.45)	(0.37)	(−0.29)	(1.04)	(1.81)
Trade openness	−0.0272	−0.0856	−0.117*	−0.0744	−0.0348	−0.0537	−0.125*	−0.0782
	(−0.51)	(−1.22)	(−1.68)	(−1.42)	(−0.64)	(−1.01)	(−1.76)	(−1.58)
Gini index	0.113	0.0731	0.175	0.119	0.102	0.0229	0.249	0.100
	(0.90)	(0.72)	(0.84)	(0.75)	(0.84)	(0.24)	(1.06)	(0.63)
Agriculture (V.A.)	0.0340	0.0105	0.0771	0.0679	0.0726	0.155	0.114	0.0697
	(0.38)	(0.07)	(0.92)	(0.82)	(0.86)	(1.37)	(1.36)	(0.86)
Rents	−0.00682	−0.00150	0.966	0.720*	0.0525	0.0274	0.342	0.354
	(−0.07)	(−0.01)	(1.06)	(1.79)	(0.47)	(0.29)	(0.76)	(1.36)
Constant	27.80	38.30	−46.99	−38.83	14.61	61.69*	−58.70	−41.55
	(1.10)	(1.06)	(−0.86)	(−0.80)	(0.50)	(1.77)	(−1.22)	(−0.84)
N	783	522	522	783	781	492	552	765
No. countries	74	56	67	83	67	42	52	71

Notes: *t* statistics in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All models include country- and year-fixed effects. Standard errors are clustered by country. Rents = consolidated non-tax revenue + resource component of taxes on income, profits, and capital gains.

Source: author's calculations, based on GRD and IMF data.

The results suggest that the effect is particularly strong where alternative sources of revenue are available. This indicates that the effect of party system institutionalization is particularly strong and statistically significant where government could potentially rely on alternative sources of revenue without having to engage in negotiations with different social actors and groups.

5.4 Regional patterns

The question of whether the effect identified in Section 4 is homogeneous across regions is crucial. It might be the case that some region might be driving the results and that in fact the argument and the results only hold for a particular subgroup of countries.

It is easy to imagine that regional factors might affect tax performance in individual countries. On the one hand, there are economic factors, such as regional tax competition, that might lead to a regional convergence of tax systems. Furthermore, there are shared cultural and historical factors,

such as predominant political culture, the concept of citizenship and state power, as well as of colonial heritage, that will foster regional patterns of taxation.[24]

Relying on the assumptions that these variables tend to cluster in geographical regions, I approach this question by running the econometric analysis consecutively, excluding one region from the analysis. Rather than identifying whether the effect is different in a particular region, this approach aims at further testing the robustness of the main result by explicitly testing whether a particular region is driving the results.[25]

Table 6: Excluding different regions individually

	PIT as share of total tax						
	No. exclusions	Asia	Latin America and Caribbean	Middle East and North Africa	North America	Sub-Saharan Africa	Europe and Central Asia
Party age (log)	1.946*	1.017	2.932**	1.706	1.908*	2.110*	1.750
	(1.86)	(1.10)	(2.18)	(1.58)	(1.83)	(1.95)	(1.34)
Bureaucratic capacity	1.309	0.425	1.631	1.166	1.300	1.455	2.150
	(1.35)	(0.41)	(1.37)	(1.17)	(1.35)	(1.48)	(1.14)
Party age (log) × bur. cap.	−0.416	−0.144	−0.723*	−0.360	−0.406	−0.486	−0.511
	(−1.37)	(−0.50)	(−1.94)	(−1.17)	(−1.34)	(−1.55)	(−0.80)
GDP p.c. (log)	2.435	3.287	2.808	1.879	2.335	2.507	6.401
	(0.57)	(0.74)	(0.61)	(0.43)	(0.53)	(0.57)	(1.20)
Urban pop. (%)	0.186	0.196	0.258	0.208	0.181	0.200	0.117
	(1.35)	(1.20)	(1.41)	(1.51)	(1.30)	(1.41)	(0.71)
Trade openness	−0.0579	−0.0761	−0.0489	−0.0382	−0.0663	−0.0566	−0.0723
	(−1.22)	(−1.64)	(−0.89)	(−0.82)	(−1.40)	(−1.14)	(−1.04)
Rents	0.0567	0.00947	0.0590	0.0708	0.0564	0.0766	−0.0521
	(0.45)	(0.08)	(0.44)	(0.57)	(0.45)	(0.57)	(−0.35)
Gini index	0.0955	0.0570	0.111	0.0874	0.0985	0.0889	0.167
	(0.80)	(0.57)	(0.84)	(0.72)	(0.82)	(0.74)	(0.88)
Constant	−17.04	−19.17	−24.09	−13.41	−16.00	−18.68	−49.97
	(−0.42)	(−0.45)	(−0.53)	(−0.32)	(−0.39)	(−0.45)	(−1.13)
N	1,077	945	943	1,060	1,041	1,056	599
No. countries	94	84	85	94	92	91	58

Notes: *t* statistics in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All models include clustered standard errors by country.

Source: author's calculations, based on GRD and IMF data.

The results presented in Table 6 indicate that the main result is relatively robust to excluding individual regions from the sample. Nevertheless, it is important to highlight how in estimations

[24] Ivanyna and Haldenwang (2012) discuss existing literature on regional patterns of taxation as well as arguments supporting the expectation that these should exist.

[25] An alternative approach would be to run the main specification for each individual region. This exercise would precisely aim at identifying potential peculiarities in the specific regions. Unfortunately, the sample size is very small if the sample is divided into so many subgroups, which undermines the accuracy and precision of the estimation.

in which Asia, Europe and Central Asia, or the Middle East and North Africa are excluded from the analysis, the effect of Party age misses statistical significance at the lowest level of bureaucratic capacity. However, the interaction behaves similarly in all estimations. Also, excluding Latin America and the Caribbean countries leads, interestingly, to the strongest results, suggesting that the argument might not work in this region.[26]

6 Conclusion

Our knowledge about the political determinants of taxation outside the OECD is fairly restricted. In addition, what we think we know is called into question because of the fairly poor (or at least questionable) quality of the data available for cross-national analysis.

In this paper, first results on the relationship between party system institutionalization, bureaucratic capacity and the relevance of the PIT in the tax composition have been replicated using the recently launched ICTD Government Revenue Dataset. The main results presented by von Schiller (2015) remain fairly robust using this new dataset. Where levels of bureaucratic capacity are low, party system institutionalization has a strong positive effect on the relevance of PIT in the tax composition. The analysis of subsamples indicates that the effect is particularly strong and reliable for democracies and in the presence of alternative sources of revenues. Furthermore, the analysis indicates that the effect is quite heterogeneous across different subsamples, although there is no specific subsample that can be identified to clearly drive the original results.

Overall, the analysis adds evidence supporting the idea that the capacity of governments to credibly commit is crucial to understanding tax composition, especially where bureaucratic capacity is low. Following on from this, it indicates the relevance of an institutional environment able to define and sustain fiscal agreements over time, and underlines the idea that taxation should be seen 'partly as a game of credible commitment rather than a game of pure coercion' (Timmons 2010a: 211).

This is particularly true for developing countries. Given weak administration, a coercive approach to taxation will probably fail, especially when facing the better-off. The fundamental conclusion of this paper is that a more consensual approach might be an alternative, but that the right institutional set-up must be in place for it to work.

This implies that strengthening the sociopolitical environment should not necessarily be considered something independent, or a consequence, of higher-performing tax systems, but rather as a prerequisite to achieving this goal. Hence, development cooperation aimed at having an impact on the low performance of tax systems in developing countries should complement its currently highly technical approach to taxation by considering the sociopolitical environment in which public finance decision are taken. The fact that the effect is so heterogeneous calls also for caution in terms of finding the institutional form to be supported in each context. A precise understanding is needed of which institutions and collective actors are key in negotiating and sustaining fiscal contracts.

[26] Focanti et al. (2013) analyse the effect of various factors on the occurrence of tax reforms in Latin America. Although focusing on a different dependant variable, it is worth noting that their results indicate that, at least in Latin America, party fragmentation has a consistent significant effect on the number of tax reforms, while party age has no significant effect.

If governments cannot convince their citizens that paying taxes is a reasonable investment, regardless of how well equipped their bureaucracies are or can become, the process of collecting taxes will be conflictual and inefficient. The ability of core political institutions to define and credibly commit to fiscal agreements is crucial, not only to increase the performance of the tax system, but also to benefit from the potential 'governance dividend' that can come with it.[27]

References

African Development Bank and OECD (2010). *African Economic Outlook 2010*. Paris: OECD.

Ardanaz, M., and C. Scartascini (2013). 'Inequality and Personal Income Taxation: The Origins and Effects of Legislative Malapportionment'. *Comparative Political Studies*, 46(12): 1636–63.

Ascher, W. (1989). 'Risk, Politics and Tax Reform: Lessons from Some Latin America Experiences'. In M. Gillis (ed.), *Tax Reform in Developing Countries*. Durham, NC: Duke University Press.

Beck, T., G. Clarke, A. Groff, P. Keefer, and P. Walsh (2001). 'New Tools in Comparative Political Economy: The Database of Political Institutions'. *World Bank Economic Review*, 15(1): 165–76.

Berens, S., and A. von Schiller (2016). 'Taxing Higher Incomes: What Makes the High-Income Earners Consent to More Progressive Taxation in Latin America?'. *Political Behavior*. doi: 10.1007/s11109-016-9376-2.

Bird, R.M. (2010). 'Smart Tax Administration'. *Economic Premise*, 36: 1–5.

Bird, R.M., J. Martínez-Vázquez, and B. Torgler (2008). 'Tax Effort in Developing Countries and High Income Countries: The Impact of Corruption, Voice and Accountability'. *Economic Analysis and Policy*, 38(1): 55–71.

Blaydes, L., and M.A. Kayser (2011). 'Counting Calories: Democracy and Distribution in the Developing World'. *International Studies Quarterly*, 55(4): 887–908.

Boix, C., M. Miller, and S. Rosato (2013). 'A Complete Data Set of Political Regimes, 1800–2007'. *Comparative Political Studies*, 46(12): 1523–54.

Brambor, T., W.R. Clark, and M. Golder (2006). 'Understanding Interaction Models: Improving Empirical Analyses'. *Political Analysis*, 14(1): 63–82.

Cheibub, J.A. (1998). 'Political Regimes and the Extractive Capacity of Governments: Taxation in Democracies and Dictatorships'. *World Politics*, 50(3): 349–76.

Dreher, A. (2006). 'Does Globalization Affect Growth? Evidence from a New Index of Globalization'. *Applied Economics*, 38: 1091–110.

Fjeldstad, O.-H. (2014). 'Tax and Development: Donor Support to Strengthen Tax Systems in Developing Countries'. *Public Administration and Development*, 34(3), 182–93.

Flores-Macías, G.A. (2010). 'Statist vs. Pro-Market: Explaining Leftist Governments' Economic Policies in Latin America'. *Comparative Politics*, 42: 413–33.

Focanti, D., M. Hallerberg, and C. Scartascini (2013). 'Tax Reforms in Latin America in an Era of Democracy'. IDB Working Paper 457. Washington, DC: Inter-American Development Bank.

[27] See critical discussion on the limits of the 'governance dividend' claim in Moore (2015).

García, M.M., and C. von Haldenwang (2015). 'Do Democracies Tax More? Political Regime Type and Taxation'. *Journal of International Development*, 4(28): 485–506.

Geddes, B., J. Wright, and E. Frantz (2014). 'Autocratic Break-down and Regime Transitions: A New Data Set'. *Perspectives on Politics*, 12(2): 313–31.

Gehlbach, S., and P. Keefer (2011). 'Investment Without Democracy: Ruling-Party Institutionalization and Credible Commitment in Autocracies'. *Journal of Comparative Economics*, 39(2): 123–39.

Gehlbach, S., and P. Keefer (2012). 'Private Investment and the Institutionalization of Collective Action in Autocracies: Ruling Parties and Legislatures'. *The Journal of Politics*, 74(2): 621–35.

Gómez Sabaini, J.C. (2007). *Cohesio´n Social, Equidad y Tributacio´n: Ana´lisis y Perspectivas para Am´erica Latina*. Santiago: Comisión Económica para América Latina y el Caribe.

Gould, A.C., and P.J. Baker (2002). 'Democracy and Taxation'. *Annual Review of Political Science*, 5(1): 87–110.

Herb, M. (2005). 'No Representation Without Taxation? Rents, Development, and Democracy'. *Comparative Politics*, 37(3): 297–316.

ICTD/UNU-WIDER (2015). 'The ICTD Government Revenue Dataset'. v. December 2015. Available at: www.ictd.ac/datasets/the-ictd-government-revenue-dataset (accessed 1 February 2016).

IMF (2011). 'Revenue Mobilization in Developing Countries'. Washington, DC: IMF, Fiscal Affairs Department, Tax Policy Division.

IMF (2012). 'Revenue Data for IMF Member Countries as of 2011'. Washington, DC: IMF, Fiscal Affairs Department, Tax Policy Division.

Ivanyna, M., and C. von Haldenwang (2012). 'A Comparative View on the Tax Performance of Developing Countries: Regional Patterns, Non-Tax Revenue and Governance'. *Economics: The Open-Access, Open-Assessment E-Journal*, 6(2012-32): 1–44.

Jibao, S.S., and W. Prichard (2015). 'The Political Economy of Property Tax in Africa: Explaining Reform Outcomes in Sierra Leone'. *African Affairs*, 114(456): 404–31.

Keefer, P. (2012). 'Database of Political Institutions: Changes and Variable Definitions'. In *Codebook of DPI*. Washington, DC: World Bank.

Kenny, L.W., and S.L. Winer (2006). 'Tax Systems in the World: An Empirical Investigation into the Importance of Tax Bases, Administration Costs, Scale and Political Regime'. *International Tax and Public Finance* 13(2–3): 181–215.

Levi, M. (1989). *Of Rule and Revenue*. Berkeley, CA: University of California Press.

Lucas, V., and T. Richter (2016). 'State Hydrocarbon Rents, Authoritarian Survival and the Onset of Democracy: Evidence from a New Dataset'. *Research & Politics*, 3(3). doi: https://doi.org/10.1177/2053168016666110.

Lupu, N., and R.B. Riedl (2013). 'Political Parties and Uncertainty in Developing Democracies'. *Comparative Political Studies* 46(11): 1339–65.

Mainwaring, S. (1998). 'Party Systems in the Third Wave'. *Journal of Democracy*, 9(3): 67–81.

Moore, M. (2001). 'Political Underdevelopment: What Causes Bad Governance'. *Public Management Review*, 3(3): 385–418.

Moore, M. (2008). Between Coercion and Contract: Competing Narratives on Taxation and Governance. In D. Brautigam, O.H. Fjeldstad, and M. Moore, (eds), *Taxation and State-Building in Developing Countries*. Cambridge: Cambridge University Press.

Moore, M. (2015). 'Tax and the Governance Dividend'. ICTD Working Paper 37. Brighton: International Centre for Tax and Development, Institute of Development Studies.

Morrison, K.M. (2009). 'Oil, Non-tax Revenue, and the Redistributional Foundations of Regime Stability'. *International Organization*, 63(1): 107–38.

Mosley, P. (2015). 'Fiscal Composition and Aid Effectiveness: A Political Economy Model'. *World Development*, 69: 106–15.

Political Risk Services Group (2012). 'International Country Risk Guide Researchers Dataset'. East Syracuse, NY: The Political Risk Services Group.

Prichard, W., A. Cobham, and A. Goodall (2014). 'The ICTD Government Revenue Dataset'. ICTD Working Paper 19. Brighton: International Centre for Tax and Development, Institute of Development Studies.

Profeta, P., and S. Scabrosetti (2010). *The Political Economy of Taxation: Lessons from Developing Countries*. Cheltenham: Edward Elgar Publishing.

Scartascini, C., E. Stein, and M. Tommasi (2013). 'Political Institutions, Intertemporal Cooperation, and the Quality of Policies'. *Journal of Applied Economics*, 16(1): 1–32.

Shah, A., and J. Whalley (1991). 'Tax Incidence Analysis of Developing Countries: An Alternative View'. *The World Bank Economic Review*, 5(3): 535–52.

Solt, F. (2009). 'Standardizing the World Income Inequality Database'. *Social Science Quarterly*, 90(2): 231–42.

Timmons, J.F. (2005). 'The Fiscal Contract'. *World Politics*, 57(4): 530–67.

Timmons, J.F. (2010a). 'Taxation and Credible Commitment: Left, Right, and Partisan Turnover'. *Comparative Politics*, 42(2): 207–27.

Timmons, J.F. (2010b). 'Taxation and Representation in Recent History'. *Journal of Politics*, 72(1): 191–208.

United Nations. (2008). *Revenue's Role in the Quest for Inclusive Development: What Works and What Can Work Better?* New York, NY: United Nations.

United Nations Millennium Project. (2005). *Investing in Development: A Practical Plan to Achieve the Millennium Development Goals*. New York, NY: United Nations.

von Haldenwang, C., and A. von Schiller (2016). 'The Politics of Taxation: Introduction to the Special Section'. *The Journal of Development Studies*, 52(12): 1–4.

von Schiller, A. (2015). 'Party System Institutionalization and Reliance on Personal Income Tax in Developing Countries'. IDB Working Paper 628. Washington, DC: Inter-American Development Bank.

World Bank. (2012). 'World Development Indicators'. Available at: http://data.worldbank.org/data-catalog/world-development-indicators (accessed 1 February 2016).

Appendix: list of country–year observations included in the analysis using the IMF database than are not included in the analysis using GRD data

Angola (1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008); Argentina (1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004); Botswana (1992, 1993, 1994, 1995, 1996, 2000, 2001, 2002, 2003, 2004, 2005); Brazil (1992, 1993, 1994, 1996, 1997); Burkina Faso (2009); Cameroon (2002, 2003, 2004, 2005, 2006, 2007); China (1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010); Colombia (1999, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010); Congo, Rep. (2005); Côte d'Ivoire (2004, 2005, 2006, 2007, 2008); Croatia (2010); Cyprus (1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008); Egypt (1998); Ethiopia (1996, 1997, 1998, 2008, 2009, 2010); Ghana (2006); Guyana (2000, 2001, 2002, 2003, 2004, 2005, 2006); Hungary (1992); India (1992, 1993, 1994, 1995, 1996, 1997, 1998); Indonesia (1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2001, 2002, 2003, 2004); Kazakhstan (2005, 2006, 2007, 2008, 2009, 2010); Kenya (2000, 2001, 2002, 2003, 2004, 2007); Latvia (1999, 2000, 2003, 2004, 2005, 2006); Malawi (2002, 2003, 2005, 2007, 2008, 2009, 2010); Malaysia (2005, 2006, 2007, 2008, 2009, 2010); Mongolia (2008); Morocco (2005, 2006, 2007); Mozambique (2005); Russian Federation (1995, 1998, 1999, 2000, 2007); Senegal (2004, 2005, 2006, 2007, 2008); Slovenia (2010); South Africa (1992, 1993, 1994, 1995); Switzerland (1992, 1993, 1994); Tanzania (2005); Thailand (1994); Togo (2007, 2008, 2009, 2010); Trinidad and Tobago (2001, 2002, 2003, 2004, 2005); Tunisia (1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000); Turkey (2002, 2003, 2004, 2005); Uganda (2008, 2009, 2010); Ukraine (2006, 2007, 2008, 2009); Uruguay (2001); Venezuela (1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005); Viet Nam (2007, 2008, 2009, 2010)