

WIDER Development Conference
Public economics for development

How do political institutions affect fiscal capacity? Explaining taxation in developing economies

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Overview

This paper...

- Studies the impact of constraints on the executive power on fiscal institutions.
- Stronger constraints on the executive foster the accountability and transparency of tax systems.
- The impact works through the rule of law and the performance of the bureaucracy.

Context and motivation

- State capacity as a determinant of long-run economic development (e.g., Besley and Persson 2011, Dincecco and Katz 2016 EJ)
- Gap in empirical research on the determinants of effective states; no systematic analysis
- Importance of political economy explanations vis-à-vis geography and history (which may have weak policy implications)

Fiscal capacity and its measurement

- Fiscal capacity: *the state's ability to raise revenues from a broad tax base*
- Proxied by tax effort indicators (e.g., tax/GDP)
- Limitations:
 - Tax/GDP depends on polity preferences on size of public sector and redistribution
 - Tax effort measures hide interesting features of tax systems functioning
- *Effectiveness* and *impartiality* of tax systems: “unpacking” fiscal capacity

Fiscal capacity: new measures

- Public Expenditure & Financial Accountability (PEFA) database
- Dependent variables (coded on 0-3 scale):
 - *Transparency of taxpayer obligations and liabilities*
 - *Quality of tax appeals mechanism*
 - *Controls in the taxpayer registration system*
 - *Effectiveness of penalties for non-compliance*
 - *Quality of tax audit*
 - *Effectiveness in collection of tax payments*
- Indicators are *de facto* measures (positively correlated with tax effort variables)

Example: quality of tax appeals mechanisms

- Assessing the functioning of a tax appeals mechanisms
- Scoring method:
 - 3. *A tax appeals system of transparent administrative procedures with appropriate checks and balances, and implemented through independent institutional structures, is completely set up and effectively operating with satisfactory access and fairness, and its decisions are promptly acted upon.*
 - 2. *A tax appeals system of transparent administrative procedures is completely set up and functional, but it is either too early to assess its effectiveness or some issues relating to access, efficiency, fairness or effective follow up on its decisions need to be addressed.*
 - 1. *A tax appeals system of administrative procedures has been established, but needs substantial redesign to be fair, transparent and effective.*
 - 0. *No functioning tax appeals system has been established.*

Hypotheses

Rulers seeks to maximise revenue collection (Levi 1988; Olson 1993)

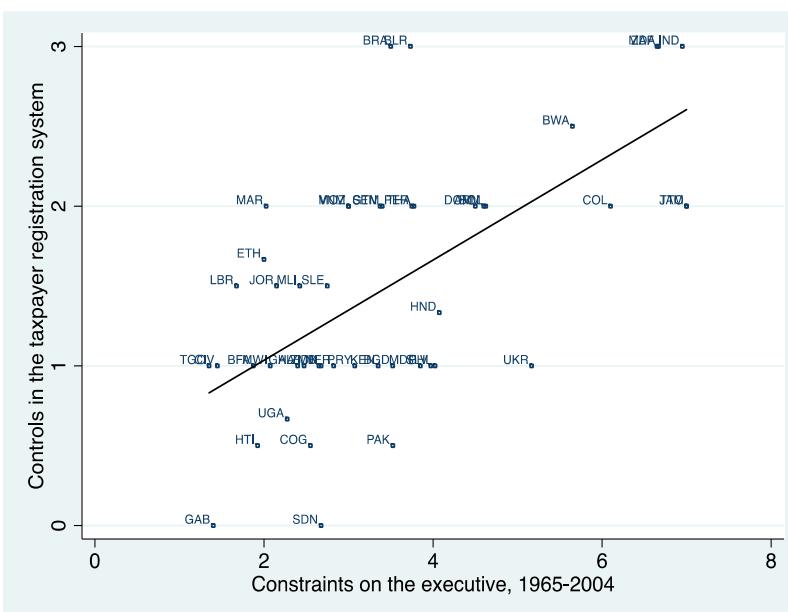
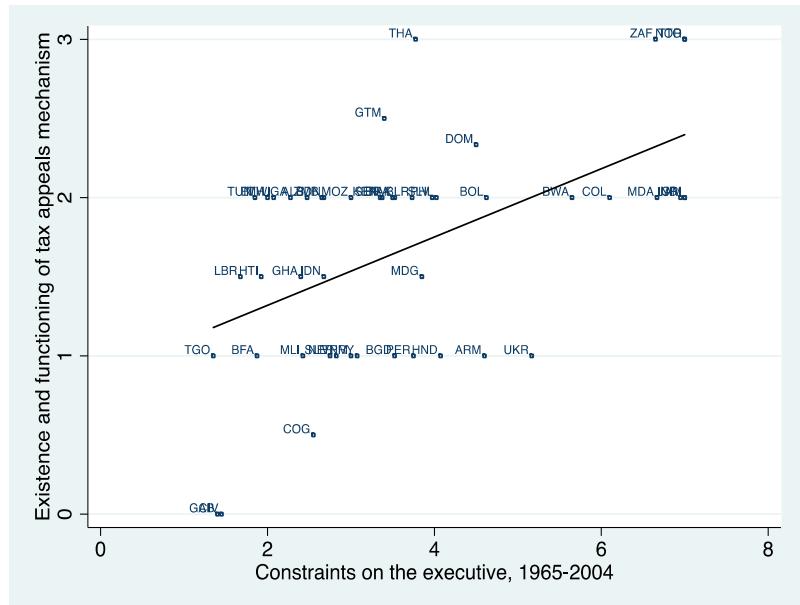
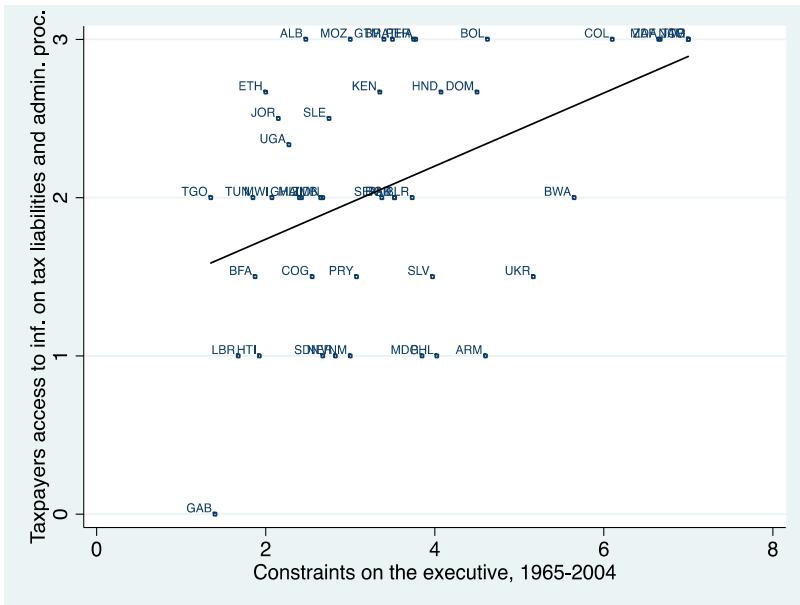
- A rational autocrat (who is interested in staying in power, as well as maximizing long-term income to mobilize tax revenues both to provide public goods to his own citizens and to extract some of the revenues for himself) has an incentive to invest in the *effectiveness* of the taxation system.
 - Ruler in democratic systems has similar incentive, so that the party can be re-elected.
- *Proposition 1: There is no clear relationship between the degree of constraints on the executive and the effectiveness dimension of fiscal capacity. The effect is ambiguous.*

Hypotheses 2

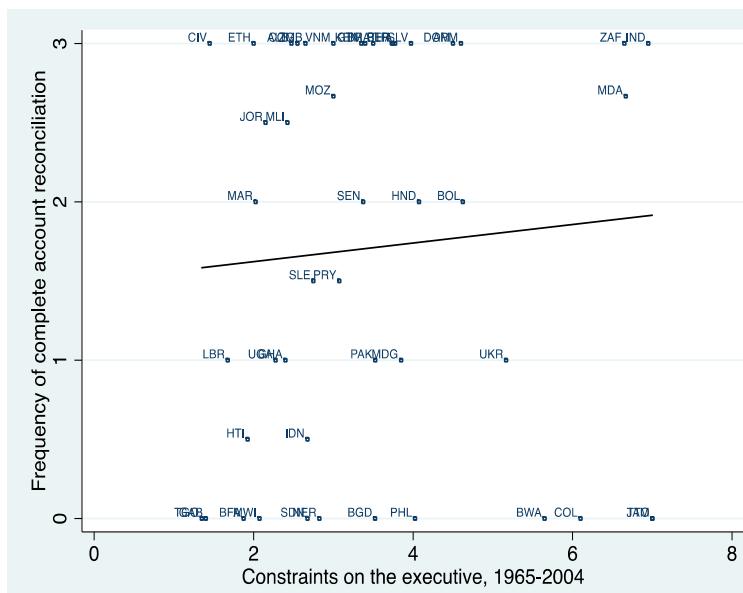
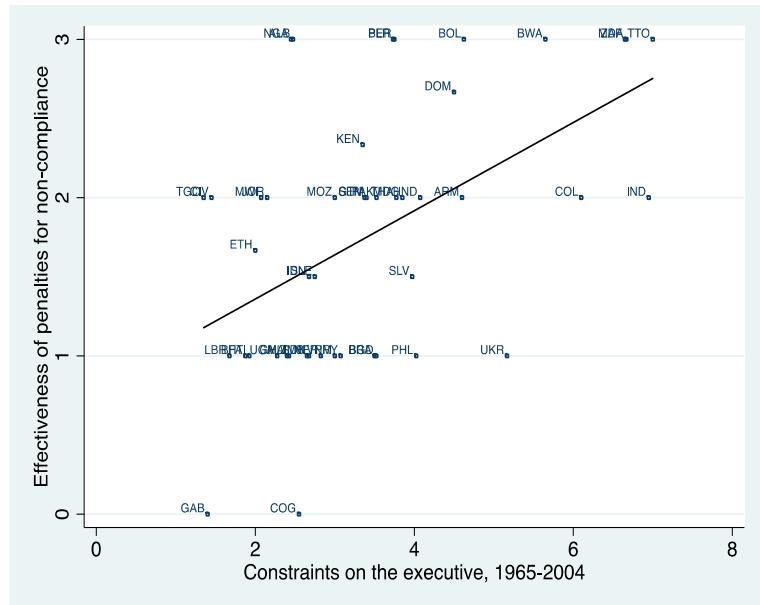
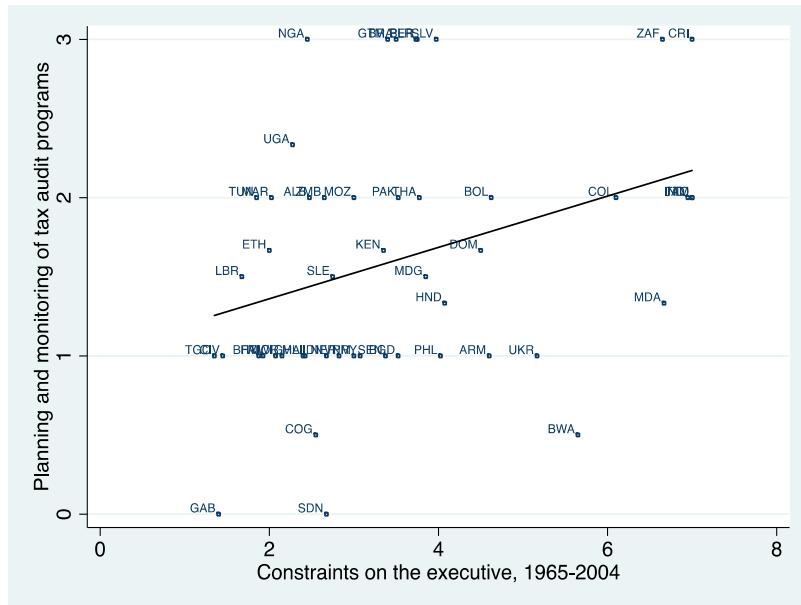
Transparency and accountability of taxation systems are about state-society relations, involving an exchange of tax revenues for services. Creating mechanisms of accountability and placing constraints on rulers facilitate the existence of a fiscal bargain and should reduce the transaction costs of taxing by making compliance “quasi voluntary” (Levi 1988) and by building “tax morale” (Luttmer and Singhal 2014).

– Proposition 2: There is a positive relationship between the degree of constraints on the executive and the impartiality dimension of fiscal capacity.

Executive constraints and *impartiality*



Executive constraints and effectiveness



Econometric methods

- Cross-section regressions
- Sample: 47 developing economies
- Identification
 - IV methods to account for the potential endogeneity of political systems
 - Reverse causality and measurement error
 - Instrument: historical settler mortality by AJR 2001

Evidence: initial results

Table 2: Basic results for fiscal capacity and constraints on the executive: OLS and Instrumental Variables (TSLS)

Panel (a)	Impartiality of taxation power			Effectiveness of taxation power	
Dependent variable:	<i>Transparency of taxpayer obligations and liabilities</i>		<i>Tax appeals mechanism</i>	<i>Controls in the taxpayer registration system</i>	
Estimator:	OLS	TSLS	OLS	TSLS	OLS
<i>Constraints on the executive</i>	0.264*** (0.057)	0.364** (0.136)	0.242*** (0.057)	0.440*** (0.109)	0.301*** (0.046)
Constant	1.149*** (0.257)	0.824* (0.469)	0.702*** (0.241)	0.049 (0.356)	0.374** (0.184)
F-stat	21.447***	7.173** 9.913	17.856***	16.166*** 11.806	42.977*** 13.119
1 st -stage F					
R-Sq.	0.281	0.240	0.305	0.101	0.443
Obs.	40	40	42	42	42
RMSE	0.686	0.704	0.624	0.709	0.576
Panel (b)					
Dependent variable:	<i>Quality of tax audit</i>		<i>Effectiveness of penalties for non-compliance</i>		<i>Effectiveness in collection of tax payments</i>
Estimator:	OLS	TSLS	OLS	TSLS	OLS
<i>Constraints on the executive</i>	0.241*** (0.055)	0.304** (0.137)	0.232*** (0.068)	0.191 (0.135)	0.347*** (0.080)
Constant	0.817*** (0.253)	0.607 (0.481)	0.903*** (0.275)	1.034** (0.478)	0.652* (0.379)
F-stat	19.072***	4.934** 13.868	11.718***	2.022 13.313	19.049*** 10.475
1 st -stage F					
R-Sq.	0.223	0.208	0.212	0.206	0.193
Obs.	45	45	41	41	41
RMSE	0.788	0.796	0.720	0.723	1.110

Heteroskedasticity-robust standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Magnitude

Table 3: Magnitude of effect on fiscal capacity of change in *constraints on the executive*

Dependent variable:	Coefficient on <i>constraints on the executive</i> in TSLS regression	Change in dependent variable in response to 1 standard deviation change in <i>constraints on the executive</i>	Ratio to 1 standard deviation of dependent variable
<i>Transparency of taxpayer obligations and liabilities</i>	0.364	0.582	0.730
<i>Tax appeals mechanism</i>	0.440	0.742	1.004
<i>Controls in the taxpayer registration system</i>	0.376	0.633	0.831
<i>Quality of tax audit</i>	0.304	0.527	0.596
<i>Effectiveness of penalties for non-compliance</i>	0.191	0.305	0.380
<i>Effectiveness in collection of tax payments</i>	0.471	0.727	0.596

Accounting for omitted variables

Controls:

- *Proportion years in external\internal conflict*
- *Urban population (% of total)*
- *Length of statehood (State antiquity index)*
- *Total natural resource rents (% of GDP)*

Accounting for omitted variables 1

Table 4: Robustness checks: effect of constraints on the executive on impartiality of taxation controlling for omitted variables

Dependent variable: Transparency of taxpayer obligations and liabilities						
Estimator:	TSLS	TSLS	TSLS	TSLS	TSLS	TSLS
Constr. on the executive	0.364** (0.136)	0.297** (0.113)	0.327** (0.150)	0.308*** (0.106)	0.392** (0.180)	0.349** (0.136)
Length of statehood		0.005 (0.005)				
Inciden. of external conflict			2.541 (6.231)			
Inciden. of internal conflict				0.585 (0.441)		
% urban population					-0.004 (0.010)	
Tot. resource rents						-0.014 (0.011)
Constant	0.824* (0.469)	0.552 (0.567)	0.907* (0.486)	0.906** (0.401)	0.854* (0.463)	0.973* (0.488)
F-stat	7.173**	4.458**	3.923**	4.628**	3.485**	4.515**
1 st -stage F	9.913	10.221	6.849	12.774	6.024	9.326
R-Sq.	0.240	0.312	0.270	0.306	0.222	0.276
Obs.	40	40	40	40	40	40
RMSE	0.704	0.679	0.700	0.683	0.723	0.697
Dependent variable: Tax appeals mechanisms						
Constr. on the executive	0.440*** (0.109)	0.401*** (0.109)	0.476*** (0.141)	0.383*** (0.099)	0.535*** (0.141)	0.428*** (0.111)
Length of statehood		0.003 (0.004)				
Inciden. of external conflict			-2.455 (4.266)			
Inciden. of internal conflict				0.480 (0.451)		
% urban population					-0.015 (0.009)	
Tot. resource rents						-0.017*** (0.005)
Constant	0.049 (0.356)	-0.100 (0.396)	-0.033 (0.402)	0.148 (0.320)	0.237 (0.362)	0.210 (0.374)
F-stat	16.166***	8.938***	7.044***	9.769***	7.424***	16.077***
1 st -stage F	11.806	10.993	7.745	13.177	7.676	11.290
R-Sq.	0.101	0.186	0.027	0.230	-0.010	0.166
Obs.	42	42	42	42	42	42
RMSE	0.709	0.684	0.747	0.665	0.761	0.692
Dependent variable: Controls in the taxpayer registration system						
Constr. on the executive	0.376*** (0.091)	0.320*** (0.082)	0.200** (0.091)	0.339*** (0.092)	0.352*** (0.112)	0.359*** (0.088)
Length of statehood		0.005* (0.003)				
Inciden. of external conflict			12.558*** (3.336)			
Inciden. of internal conflict				0.340 (0.382)		
% urban population					0.005 (0.008)	
Tot. resource rents						-0.018*** (0.005)
Constant	0.128 (0.281)	-0.186 (0.395)	0.506* (0.272)	0.184 (0.276)	0.064 (0.278)	0.310 (0.271)
F-stat	16.944***	8.307***	15.674***	9.049***	9.646***	13.695***
1 st -stage F	13.119	14.521	10.776	16.577	8.843	12.383
R-Sq.	0.416	0.481	0.564	0.450	0.441	0.472
Obs.	42	42	42	42	42	42
RMSE	0.589	0.563	0.516	0.580	0.584	0.568

Continued below

Accounting for omitted variables 2

Dependent variable: <i>Quality of tax audit</i>						
Estimator:	TSLS	TSLS	TSLS	TSLS	TSLS	TSLS
Constr. on the executive	0.304** (0.137)	0.212 (0.138)	0.185 (0.148)	0.289** (0.136)	0.252 (0.161)	0.277** (0.129)
Length of statehood		0.009** (0.004)				
Inciden. of external conflict			8.896 (5.448)			
Inciden. of internal conflict				0.157 (0.481)		
% urban population					0.009 (0.010)	
Tot. resource rents						-0.010 (0.015)
Constant	0.607 (0.481)	0.057 (0.529)	0.867* (0.498)	0.628 (0.481)	0.480 (0.462)	0.774* (0.421)
F-stat	4.934**	5.261***	3.699**	2.459*	3.884**	2.337
1 st -stage F	13.868	14.349	11.143	15.746	9.512	12.355
R-Sq.	0.208	0.301	0.273	0.216	0.253	0.231
Obs.	45	45	45	45	45	45
RMSE	0.796	0.756	0.771	0.801	0.782	0.793
Dependent variable: <i>Effectiveness of penalties for non-compliance</i>						
Constr. on the executive	0.191 (0.135)	0.156 (0.140)	0.190 (0.155)	0.182 (0.141)	0.211 (0.159)	0.166 (0.136)
Length of statehood		0.004 (0.004)				
Inciden. of external conflict			0.115 (5.668)			
Inciden. of internal conflict				0.085 (0.334)		
% urban population					-0.004 (0.010)	
Tot. resource rents						-0.011 (0.019)
Constant	1.034** (0.478)	0.798 (0.568)	1.037** (0.512)	1.046** (0.483)	1.098** (0.458)	1.198** (0.459)
F-stat	2.022	1.268	0.987	1.029	0.956	0.815
1 st -stage F	13.313	13.284	8.782	15.066	9.865	11.954
R-Sq.	0.206	0.207	0.205	0.203	0.218	0.212
Obs.	41	41	41	41	41	41
RMSE	0.723	0.732	0.732	0.733	0.727	0.730
Dependent variable: <i>Effectiveness in collection of tax payments</i>						
Constr. on the executive	0.471** (0.215)	0.343* (0.201)	0.259 (0.229)	0.427** (0.192)	0.369 (0.284)	0.488** (0.236)
Length of statehood		0.011* (0.006)				
Inciden. Of external conflict			14.197** (5.550)			
Inciden. Of internal conflict				0.426 (0.771)		
% urban population					0.016 (0.017)	
Tot. resource rents						0.012 (0.026)
Constant	0.268 (0.706)	-0.348 (0.746)	0.698 (0.702)	0.328 (0.666)	0.064 (0.649)	0.137 (0.859)
F-stat	4.809**	4.376**	7.044***	2.590*	5.545***	2.327
1 st -stage F	10.475	9.942	7.434	12.737	7.504	10.200
R-Sq.	0.168	0.255	0.268	0.190	0.240	0.168
Obs.	41	41	41	41	41	41
RMSE	1.127	1.081	1.071	1.127	1.091	1.142

Heteroskedasticity-robust standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Accounting for instrument weakness

Table 5 – Accounting for instrument weakness: Fuller’s Limited Information Maximum Likelihood estimates

Estimator:	OLS	LIML						
<i>Panel (a): Transparency of taxpayer obligations and liabilities</i>								
Con. on the executive	0.264*** (0.057)	0.332*** (0.098)	0.286*** (0.086)	0.298*** (0.101)	0.296*** (0.082)	0.338*** (0.114)	0.318*** (0.097)	0.250*** (0.091)
<i>Panel (b): Tax appeals mechanisms</i>								
Con. on the executive	0.242*** (0.057)	0.378*** (0.080)	0.348*** (0.082)	0.385*** (0.088)	0.337*** (0.073)	0.435*** (0.090)	0.367*** (0.081)	0.369*** (0.093)
<i>Panel (c): Controls in the taxpayer registration system</i>								
Con. on the executive	0.301*** (0.046)	0.356*** (0.073)	0.316*** (0.068)	0.220*** (0.070)	0.328*** (0.075)	0.328*** (0.085)	0.341*** (0.070)	0.193** (0.073)
<i>Panel (d): Quality of tax audit</i>								
Con. on the executive	0.241*** (0.055)	0.286** (0.107)	0.218* (0.110)	0.196* (0.114)	0.275** (0.109)	0.236* (0.118)	0.264** (0.101)	0.131 (0.112)
<i>Panel (e): Effectiveness of penalties for non-compliance</i>								
Con. on the executive	0.232*** (0.068)	0.202* (0.112)	0.174 (0.116)	0.204* (0.119)	0.195 (0.116)	0.222* (0.126)	0.182 (0.111)	0.193 (0.135)
<i>Panel (f): Effectiveness in collection of tax payments</i>								
Con. on the executive	0.347*** (0.080)	0.437** (0.169)	0.339** (0.161)	0.269 (0.174)	0.405** (0.156)	0.336 (0.210)	0.449** (0.181)	0.121 (0.225)
Controls:	No	No	Length of statehood	External conflict	Internal conflict	Urban population	Resource rents	All five

Heteroskedasticity-robust standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Why does limiting the executive power matter? Channels

Table 7 – Tests of three possible channels of causation from limited executive power to fiscal capacity

	1	2	3	4	5	6
Panel (a): Transparency of taxpayer obligations and liabilities						
Rule of law	1.053 (0.650)	0.445 (0.573)				
Constraints on the executive		0.217*** (0.059)		0.173** (0.079)		0.185*** (0.060)
Bureaucratic quality			1.437*** (0.485)	0.805 (0.614)		
Corruption in government					2.084** (0.811)	1.481* (0.820)
Constant	0.964* (0.543)	0.679 (0.541)	1.124*** (0.414)	0.815* (0.469)	0.896* (0.483)	0.555 (0.511)
F-stat	1.903	3.889***	5.875***	5.232***	2.609**	3.596***
Adj. R-Sq.	0.005	0.152	0.116	0.181	0.116	0.216
Obs.	45	45	45	45	45	45
RMSE	0.789	0.729	0.744	0.716	0.744	0.701
Panel (b): Tax appeals mechanisms						
Rule of law	1.515** (0.606)	0.740 (0.612)				
Constraints on the executive		0.201*** (0.068)		0.180** (0.083)		0.176** (0.067)
Bureaucratic quality			1.349*** (0.477)	0.618 (0.580)		
Corruption in government					2.155*** (0.544)	1.419** (0.552)
Constant	0.527 (0.510)	0.378 (0.457)	0.928*** (0.319)	0.644* (0.356)	0.720* (0.366)	0.435 (0.357)
F-stat	2.881**	3.868***	3.197**	3.240***	4.825***	4.983***
Adj. R-Sq.	0.107	0.289	0.180	0.293	0.211	0.347
Obs.	47	47	47	47	47	47
RMSE	0.662	0.591	0.634	0.589	0.622	0.566
Panel (c): Controls in the taxpayer registration system						
Rule of law	2.097*** (0.583)	1.362*** (0.384)				
Constraints on the executive		0.233*** (0.036)		0.240*** (0.054)		0.229*** (0.045)
Bureaucratic quality			1.340** (0.537)	0.424 (0.543)		
Corruption in government					2.334*** (0.657)	1.607** (0.603)
Constant	0.052 (0.391)	-0.224 (0.341)	0.800* (0.435)	0.386 (0.381)	0.499 (0.454)	0.051 (0.373)
F-stat	6.700***	12.979***	5.038***	8.655***	6.871***	11.967***
Adj. R-Sq.	0.302	0.503	0.285	0.452	0.327	0.522
Obs.	47	47	47	47	47	47
RMSE	0.667	0.563	0.675	0.591	0.655	0.552

All regressions are estimated by OLS and controlling for incidence of external an internal conflict, share of urban population, total resource rents and length of statehood. Heteroskedasticity-robust standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Summary and implications

- Evidence supporting the importance of political economy explanations of state capacity
- Higher constraints on the executive do not have a symmetrical effect on fiscal capacity
 - Positive effect on *accountability and transparency* dimension
 - Much less robust effect on the *effectiveness* dimension
- Building fiscally capable states in developing economies may rest on political institutions facilitating a citizen-ruler fiscal bargain