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Taxation under media capture

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Abstract

The paper investigates the implication of mass-media freedom on the level of taxation, using a panel-model approach. The data-set covers the period 2002-2010, including 120 states. The main obtained finding suggests a nonlinear cubic function, with U and inverted U-shapes. Except the minimal states, the study suggests the study suggests that a significant increase of taxes, without a major negative reaction of taxpayers, can be facile obtained if the mass-media is free or moderate controlled by govern and/or other interested groups. The policy response reaction has the same intensity in both cases.

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1. Introduction

In the public choice view, the level and structure of taxation are the result of collective actions, the quality and quantity of information received by voters having a great impact on taxation electoral choice. One of the most important informational filters is the mass-media, which could generate both imperfect and asymmetric information between electors. In this case, the decisional public vector concerning the level and structure of taxation is vitiated. As the voters receive "bad or super-realist" information, they will vote in taxation area based on these denaturised informational conditions. Moreover, the voters, in quality of taxpayers, approve the level and type of taxation on political environment, only if they receive benefits from public goods or obtain some financial socioeconomic transfers. The collective vector in this situation can be resulted at constitutional or post-constitutional stage of decision. Brennan and Buchanan (2006) show that the taxpayers control the "government size" using normal parliamentary process or interparty competition but from outside of system. In both cases, the best control of government size can be made only if the taxpayers are very good informed. In this way, Downs (1957) argues that the information should be viewed as a public good. Unfortunately, the informational benefits received by taxpayers are very low, because the information has a high marginal obtained cost. Thus, all taxpayers remain rationally under-informed regarding the main issues of fiscal framework, and their collective fiscal choice will be distorted. Mass-media is a very strong "informational filters", even if the state is democratic or autocratic. According to Wells and Hakanen (1997), mass-media includes newspapers, magazines, television, film, radio, and recording, and represents the informational products of modern media society. Because the mass-media is not completely "free", this think will generate both imperfect information and informational asymmetry between voters and politicians-bureaucrats, which affects the decisional tax vector (level and structure of taxation) through the collective actions.

Between authors who studied the implications of mass-media on the public policy area, can be mentioned: Shirer (1969); Strömberg (2001); Besley and Burgess (2001, 2002); Baron and McCaffery (2004); Besley and Prat (2006); Petrova (2008); Olper and Swinnen (2009); and Prat and Strömberg (2011).

Shirer (1969) realises a descriptive incursion in France after World War I, and demonstrated the importance of mass-media in the taxation environment. He argued that, in mentioned historical period, mass-media helped the persons with high income to avoid increase in taxation, as a consequence of rise of costs of war and reconstruction. Strömberg (2001) sees the mass-media as an endogenous variable. The author emphasis that if the voters are very good informed, they receive favourable policies. The main obtained results focused on the impact of mass-media on some policy issues: redistribution, size of the government sector, rents and corruption, effectiveness of lobby groups, and political business cycles. Performing an analysis in the case of Indian's states governments, for the period 1958-1992, Besley and Burgess (2001) illustrate the role of media and asymmetric information between citizens in the state policy context. Their finding allows a significant relationship between states responsibility and high levels of newspaper circulation, electoral turnout, and literacy rates. The same authors, Besley and Burgess (2002), investigate the same case of India, but on different perspective, using a panel-data approach. They suggest the functionality of connection between mass-media and voters behaviour. More precisely, through the mass-media, the preferences of citizens are reflected in public policy. Important conclusions obtain Baron and McCaffery (2004). The analysis focused on the people's perceptions regarding the progressive tax system, and it's based on a complex study, using questionnaires completed by 104 subjects, with ages 17-70 (72% females). As the authors note, the perception of progressiveness is "affected by the nature of the tax system and by the way it is framed, or

presented". In the same way, Besley and Prat (2006) reveal the major importance of media in government accountability. They consider that the media can be used in order to modify the govern behaviour regarding the political outcomes. Petrova (2008) performs a seriously study of relationship between revenues inequality and media capture. Talking about taxation issue, she notes that the rich people can pay the media in order to influence the voters' beliefs about their preferred level of taxation. Olper and Swinnen (2009) position the social groups in the centre of investigation. As the researchers note, the mass-media plays an important role in the distribution of information. More, the information has a major impact on the political market and public policy making. In a recent study about the importance of mass-media in the public area, Prat and Strömberg (2011) formulate three main conclusions: (a) Media scrutiny increases political accountability; (b) Media pluralism and a healthy commercial motive are effective defences against media capture; and (c) Voter information and voting outcomes are affected by the media.

All illustrated literature results reveal the presence of media impact on public policy, but few of them are focused on taxation impact. In such a context, the paper investigates the relationship between level of taxation and mass-media (illustrates by press freedom index), using a panel-model approach, with 120 countries, for the period 2002-2010. A set of control variables are entered in order to isolate the effect of interest variable. The main obtained finding suggests a nonlinear cubic function, with U and inverted U-shapes. Except the minimal states, the study suggests that a significant increase of taxes, without a major negative reaction of taxpayers, can be facile obtained if the mass-media is free or moderate controlled by govern and/or other interested groups. The policy response reaction has the same intensity in both cases.

The paper extends the literature in the field by focusing on the mass-media implications in economy and finds new evidences regarding the determinants of level of taxation. The panel-model approach for 120 countries and testing of nonlinearity are other two novelties of this paper. The investigation has two concrete conditions, formulate in this way: first one, all voters utilize only the mass-media informational channel, and second one, all voters receive the mass-media information with the same intensity and frequency.

The rest of the paper is organized as follows: Section 2 contains the methodology and data, while Section 3 illustrates the empirical results. Section 4 concludes.

2. Methodology and data

The impact of mass-media on the level of taxation are explored based on an unbalanced large data-set, with 120 cross-sections (120 countries, as Table I in Appendix shows), for the period 2002-2010, using a panel model approach. The countries were selected considering several criteria, such as: level of economic development, form of socioeconomic system, culture and type of political regime. Even if considered period is relatively short (press freedom index is officially available from 2002 to 2010), there is sufficient number of observations (1080) to capture all important investigated issues. Moreover, according to Hsiao (2007), the panel-models have quality to capture the complexity of human behaviour than a single cross-section or time series data.

Two main variables are used in order to analyze the connection between taxation level and mass-media: the level of taxation, as dependent variable, and the press freedom index, as independent variable.

The level of taxation (τ) illustrates the amount of tax revenues as percentage of GDP. The indicator is a measure of what percentage of production is transferred to general government in the form of compulsory, non-refundable payments. A low-level indicator shows a reduced compulsory transfer to general government trough taxation.

The Press Freedom Index (π) measures the intensity of freedom that journalists and news organisations enjoy in each country, and the efforts made by the authorities to respect and ensure respect for this freedom. This dimension takes account not only of abuses attributable to the state, but also those by armed militias, clandestine organisations and pressure groups. The maximum level is 0 (very high press freedom), and minimum level is 105 (very low press freedom).

The main hypothesis of our investigation is that the level of press freedom determines the level of taxation, based on a function with this shape:

$$\tau = f(\pi), \tag{1}$$

where τ - the amount of tax revenues as percentage of GDP, and π - the Press Freedom Index. The scatter diagram of this function is showed in Figure 1, in Appendix. Nearest Neighbor Fit method (degree = 3, span = 0.999) uses to perform the scatter diagram suggests a cubic connection between taxation level and press freedom index with U and inverted U-shape (the outliers values of taxation level and press freedom index are eliminated). Also, this form is tested with Ramsey's Reset Tests.

Using natural logarithmic of variable τ, the basic OLS naiv panel-model is as follows:

$$\ln(\tau)_{it} = \alpha + \beta\, \pi_{it} + \varepsilon_{it}, \tag{2}$$

where α - intercept, β - slop, i - country, t - time and remainder, and ε_{it} - the error term, which varies over both country, and time. We also note that the endogeneity issue cannot be evidenced because there is not a reverse causality between variables (press freedom determines taxation, while taxation doesn't determines the press freedom).

The indentified cubic effect of press freedom index is isolated entering three types of control variables: one inspired from appropriate tax literature, one derived by macroeconomic policy, and another one which reveals robustness variables. In this case, the extended cubic panel-model becomes:

$$\ln(\tau_{it}) = \alpha + \beta_0 \pi_{it} + \beta_1 \pi^2{}_{it} + \beta_2 \pi^3{}_{it} + \sum_{k=1}^{n} \beta_k X_{k,it} + \mu_i + \lambda_t + \varepsilon_{it}, \tag{3}$$

where α - intercept, $\beta_{0,1,2}$ - coefficients of interest variables π, π^2 and π^3, β_k - coefficient of control independent variable k by n type, X - control independent variables, μ_i - stands for country fixed effects, λ_t - time-specific effect that controls for unaccounted common time-varying factors, i - country, t - time, and ε_{it} - the error term.

Per capita gross domestic product (GDP), the size of industrial sector and the size of agricultural sectors are the first group of control variables. GDP per capita measures per capita GDP in U.S. dollars and has a strong influence on government tax revenues (e.g. Tosun and Abizadeh, 2005, Katircioglu, 2010). The size of industrial sector and the size of agricultural have a significant impact on tax revenues (e.g. Agbeyegbe at al., 2006) and reveal the value added by industrial/agricultural sector as percent of GDP.

The second group of control variables includes variables from macroeconomic policy area, such as: public debt, government consumption expenditure, balance of trade and net foreign investments. Public debt reveals the level of general government gross debt as percent of GDP. The evidence of relationship between public debt and tax revenues are shown by Battaglini and Coate (2008). Government consumption expenditure quantifies the general government final consumption expenditure as percentage of GDP, registering a relevant correlation with tax revenues, as Taha and Loganathan (2008) note. Balance of trade is the difference between monetary value of exports and imports of output in an economy, as percent of GDP. Rodrik (1998) and Gupta (2007) demonstrate the influence of this variable on tax revenues. Net foreign direct investments (FDI) are the difference between inward foreign direct investment and outward foreign direct investment as percent of GDP. Some

contributions analyse the effects of foreign direct investment flows on the level of taxation, such as: Mintz (1994), Richter and Wellisch (1996), Huizinga and Nielsen (1997, 2002), Wildasin and Wilson (1998), Wildasin (2003) or Huizinga and Nicodème (2006).

The third set of control variables is for robustness and includes: government effectiveness, freedom from corruption, level of democratization, political stability and literacy. The government effectiveness captures the perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies (-2.5 shows a weak governance performance, while 2.5 a strong governance performance one). The impact of government effectiveness on collected tax revenues is very strong, according to Hanousek and Palda (2004) and Lisi (2011). Freedom from corruption index measures the corruption intensity. The level 100 illustrates low corruption, while a score of 0 indicates a very corrupt government. Ghura (1998), Friedman et al. (2000), Fjeldstad and Tungodden (2001) or Imam and Jacobs (2007) explore and demonstrate the impact of corruption on taxation. The level of democratization are represented by Polity2 index, with values from +10 (strongly democratic regime) to -10 (strongly autocratic regime). Mutascu (2011) demonstrates the impact of democratization's level on tax revenues. Political stability expresses the number of years since the most recent regime change or the end of transition period defined by the lack of stable political institutions. The implications of political stability on taxation are put in evidenced by Cukierman et al. (1992); Volkerink and De Haan (1999); Bohn (2002); Aizenmana and Jinjarak (2008); Azzimonti (2010); Melo (2011) or Rieth (2011). The last variable for robustness is the literacy index, which indicates how many adults can read and write in a certain area or nation, as percent in total adult population. As Kenney and Winer (2001) and Mahadavi (2008) note, this determinant is significant and strong correlated with collected tax revenues.

All considered variables are treated as elasticity, except the variables with not strictly positive values (government debt, balance of trade, net FDI, government effectiveness, polity2 and regime durability). The descriptive statistics of variables and their sources are presented in Table II, respectively Tables III in Appendix.

In our panel-model approach, the model may have heterogeneity in the data. As the investigated sample is unbalanced, we test this propriety only in the case of cross-section and period fixed-effects models, because the random-effects are not consistent under unbalanced data-set. In this demarche, F-test permits to choose between pooled model and fixed-effects model. The next section shows the main empirical results of explored function, performing several econometric scenarios (models 1-7), as Table IV, in Appendix, presents.

3. Empirical results

The first outputs reveal that the suggested nonlinear relationship between level of taxation and press freedom index is reinforced by Ramsey's Reset Tests, in the case of naive OLS model (1). In other words, Ramsey's Reset Tests, assuming squares and cubes, cubes only, and squares only, confirm the scatter diagram: there is a nonlinear relationship between level of taxation and press freedom index, with cubic form, as model (2) in Table II shows.

Entering the control variables, the results of OLS models (3)-(5) demonstrate that GDP per capita, size of industrial sector, government consumption, balance of trade and literacy are significant and positive correlated with dependent variables (the coefficient of net FDI is not conclusive). Only the size of agricultural sector, level of democratization and political regime durability are significant, but with negative impact on τ, while the rest of control variables (e.g. government debt, government effectiveness and corruption) are not conclusive.

The most important results show that the interest variable π is significant in all scenarios and negative correlated with τ. The interest variable π^2 also is significant in all cases, but positive correlated with τ, while variable π^3 is significant, with negative sign.

Further, as the panel-data model may have heterogeneity in data, we investigate this aspect only in the case of cross-section and period fixed-effects models (the random-effects are not consistent under unbalanced data-set). For both cross-section fixed-effects model (6) and period fixed-effects model (7), the values of F-test clearly suggest that the fixed-effects are more appropriate then OLS estimations. The cross-section fixed-effects model (6) indicates that the interest variable π is insignificant, while π^2 and π^3 register negative and positive signs, respectively. Positives and significant also are control variables GDP per capita, size of industrial sector, government consumption and literacy. Two significant control variables - size of agricultural sector and government debt - are negative impact on τ. The rest of control variables are not statistically significant. Finally, the period fixed-effects model (7) reveals that all interest variables are significant, with negative effects on dependent variable for π and π^3 and positive for π^2. Four control variables are conclusive and have positive impact on τ: size of industrial sector, government consumption, balance of trade and literacy. Significant but negative correlated with τ are the size of agricultural sector, level of democratization and political regime durability. In this last model, GDP per capita, government debt, net FDI, government effectiveness and level of corruption are not conclusive.

Based on these results show above, we conclude that period fixed-effects model (7) is more appropriate to estimate the cubic relationship between taxation level and press freedom index, under control of a specific set of variables. Considering the coefficients of model (7), tax cubic function in respect to π has a particular tendency, as Figure 2, in Appendix, illustrates. We also note that:

$$\tau : [0,105] \to (0,1) \tag{4}$$

The tax cubic function in respect to π has an oscillating trend, with two critical points: one minimum ($\pi_{min.}$) and another maximum ($\pi_{max.}$). π_{1a} and π_{1b} are the roots of the first derivative cubic function, while π_2 is the root of the second derivative of the same function.

Considering the definition interval of the function [0, 105], the tax cubic function in respect to π decreases to π_{1a}, increases between two critical points (π_{1a}, π_{1b}), and decreases from π_{1b}. Moreover, there is an inflection point $\pi_{inf.}$ in which the accelerated increasing trend becomes slowed. Therefore, the relationship between level of taxation and press freedom index is cubic, with U and inverted-U shapes.

4. Conclusions

Press freedom has a significant impact on the level of taxation, which can depend by other determinants also. Having U and inverted U-shape, the cubic function between press freedom and taxation reveals three main zones: in the left side, a zone with very high press freedom and high taxation, in the middle, a zone with medium level of press freedom and medium taxation, and in the right side, a very low press freedom and low taxation.

First area shows that the high level of taxation is assimilated with high press freedom, the connection registering a low elasticity (the taxation reduces slowly, as the press freedom decreases). The voters control the level of taxation because they have very relevant information about taxation through the free mass-media filter. Therefore, they accept a high level of taxation because there is a collective awareness of benefits offer by public goods and socioeconomic transfers.

The middle zone is characterised by medium taxation, with medium press freedom. In this case the tendency is flattened. The voters don't control in totality the level of taxation, because they are under-informed through the manipulated mass-media filter. This conducts to

a false individual perception regarding the public benefits, in reality the taxpayers accepting a medium level of taxation with "poor" public outputs. The right side of diagram corresponds to the controlled mass-media area. In these minimal systems, the taxation is very low because the public sector is reduced and taxpayers don't have any control over voting.

In the context of tax policy implications, except the minimal states, the study suggests that a significant increase of taxes, without a major negative reaction of taxpayers, can be facile obtained if the mass-media is free or moderate controlled by govern and/or other interested groups. The policy response reaction has the same intensity in both cases.

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Appendix

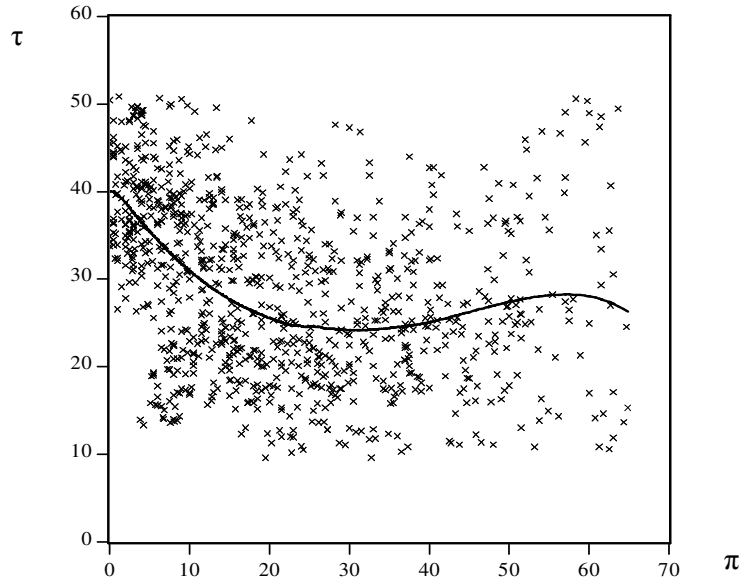

Figure 1 - The relationship between taxation level and press freedom index

π	0	π_{1a}	π_2	π_{1b}	105
$f'(\pi)$	----------	0	++++++++++++++++++	0	----------
$f''(\pi)$	++++++++++++++++++	0	----------		
Trend of $f(\pi)$	Decrease	$\pi_{min.}$	Increase	$\pi_{max.}$	Decrease
Form of function			$\pi_{inf.}$		

Figure 2: The tendency of cubic tax function in respect to press freedom index

Table I: List of analyzed countries

Countries				
Albania	China,P.R.: Mainland	Indonesia	Mauritius	Saudi Arabia
Algeria	Colombia	Iran, I.R. of	Mexico	Senegal
Argentina	Costa Rica	Ireland	Moldova	Slovak Republic
Armenia	Croatia	Israel	Mongolia	Slovenia
Australia	Cyprus	Italy	Morocco	Spain
Austria	Czech Republic	Jamaica	Mozambique	Sudan
Azerbaijan, Rep. of	Denmark	Japan	Nepal	Swaziland
Bahrain, Kingdom of	Djibouti	Jordan	Netherlands	Sweden
Bangladesh	Dominican Republic	Kazakhstan	New Zealand	Switzerland
Belarus	Ecuador	Kenya	Nicaragua	Tajikistan
Belgium	Egypt	Korea, Republic of	Niger	Togo
Benin	El Salvador	Kuwait	Nigeria	Trinidad and Tobago
Bolivia	Estonia	Kyrgyz Republic	Norway	Tunisia
Botswana	Ethiopia	Lao People's Dem.Rep	Pakistan	Turkey
Brazil	Fiji	Latvia	Panama	Uganda
Bulgaria	Finland	Lebanon	Paraguay	Ukraine
Burkina Faso	France	Lesotho	Peru	United Arab Emirates
Burundi	Georgia	Libya	Philippines	United Kingdom
Cambodia	Germany	Lithuania	Poland	United States
Cameroon	Ghana	Macedonia, FYR	Portugal	Uruguay
Canada	Greece	Madagascar	Qatar	Uzbekistan
Central African Rep.	Guatemala	Malawi	Romania	Venezuela, Rep. Bol.
Chad	Hungary	Malaysia	Russian Federation	Vietnam
Chile	India	Mali	Rwanda	Zambia

Table II: Descriptive statistics

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
Tax revenues (US dollars)	30.52554	29.513	67.215	9.58	11.59891	891
Press freedom index	24.14114	18.25	97	0	21.26251	891
GDP per capita (US dollars)	11244.65	3913.578	93156.84	112.5174	15798.95	891
Size of industrial sector as % of GDP	30.88582	29.02899	78.51812	10.7517	10.89504	891
Size of agricultural sector as % of GDP	12.31029	8.169961	59.72044	0.369359	11.82593	891
General government gross debt as % of GDP	49.11823	43.159	210.247	0.55	32.0215	891
Government final consumption expenditure as % of GDP	15.49628	15.0751	39.83057	2.675277	5.620947	891
Balance of trade as % of GDP	-4.47345	-2.70051	45.83854	-100.971	14.19453	891
Net FDI as percent of GDP	2.651249	2.067586	46.50057	-22.7899	4.916446	891
Government effectiveness	0.152559	-0.1	2.34	-1.62	0.948335	891
Freedom of corruption	41.9349	34	100	10	22.3447	891
Polity2 index	5.004489	8	10	-10	6.046819	891
Political regime durability	28.61728	16	200	0	33.02996	891
Literacy index	0.871416	0.943445	1	0.143552	0.178791	891

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Table III: Sources of data

Variable	Source
Tax revenues (US dollars)	International Monetary Fund online data-base (2011).
Press freedom index	Reporters Without Borders (RWB) online data-base (2011).
GDP per capita (US dollars)	United Nations Conference on Trade and Development (UNCTAD) online data-base (2011).
Size of industrial sector as % of GDP	World Bank online data-base (2011).
Size of agricultural sector as % of GDP	World Bank online data-base (2011).
General government gross debt as % of GDP	International Monetary Fund online data-base (2011).
Government final consumption expenditure as % of GDP	World Bank online data-base (2011).
Balance of trade as % of GDP	International Monetary Fund online data-base (2011).
Net FDI as percent of GDP	United Nations Development Programme online data-base (2011).
Government effectiveness	World Bank online data-base (2011).
Freedom of corruption	The Heritage Foundation online data-base (2012).
Polity2 index	Polity™ IV Project Political Regime Characteristics and Transitions, 1800-2010 Dataset (2011).
Political regime durability	Polity™ IV Project Political Regime Characteristics and Transitions, 1800-2010 Dataset (2011).
Literacy index	United Nations Development Programme online data-base (2011).

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Table IV: Empirical results of panel regressions

Dependent variable: ln tax revenues (ln τ)

Independent variables	Model						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
constant	3.472701*** (0.016543)	3.755924*** (0.014349)	3.280904*** (0.117456)	1.344716*** (0.179076)	1.575647*** (0.178031)	2.733418*** (0.254693)	1.686686*** (0.182563)
press freedom index (π)	-0.005164*** (0.000184)	-0.044790*** (0.003585)	-0.016412*** (0.001878)	-0.009539*** (0.002421)	-0.013253*** (0.002005)	0.001910 (0.001434)	-0.013937*** (0.001727)
press freedom index (π^2)		0.001058*** (0.000119)	0.000461*** (6.18E-05)	0.000274*** (7.07E-05)	0.000338*** (5.83E-05)	-0.000101*** (3.06E-05)	0.000346*** (5.46E-05)
press freedom index (π^3)		-7.13E-06*** (9.41E-07)	-3.45E-06*** (5.05E-07)	-2.07E-06*** (5.38E-07)	-2.43E-06*** (4.66E-07)	8.00E-07*** (2.31E-07)	-2.47E-06*** (4.49E-07)
ln GDP per capita			0.022355*** (0.007051)	0.022981 (0.014945)	0.037503** (0.018219)	0.035239*** (0.012082)	0.021551 (0.017491)
ln size of industrial sector as % of GDP			0.102841*** (0.022206)	0.168996*** (0.017758)	0.133592*** (0.017351)	0.139817*** (0.035751)	0.138924*** (0.018845)
ln size of agricultural sector as % of GDP			-0.174259*** (0.010846)	-0.081202*** (0.014692)	-0.083400*** (0.014016)	-0.130619*** (0.034716)	-0.084254*** (0.013920)

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general government gross debt as % of GDP				-0.000459*** (0.000171)	-8.08E-05 (0.000218)	-0.000831* (0.000482)	0.000168 (0.000194)
ln government final consumption expenditure as % of GDP				0.557152*** (0.020116)	0.566511*** (0.020731)	0.103281*** (0.028926)	0.575885*** (0.019562)
balance of trade as % of GDP				0.001342** (0.000636)	0.001569*** (0.000565)	0.000628 (0.000999)	0.001953*** (0.000555)
net FDI as percent of GDP				0.001999** (0.001000)	0.001132 (0.001251)	0.000779 (0.001028)	0.000452 (0.001502)
government effectiveness					-0.030530 (0.030364)	-0.024632 (0.028013)	-0.015208 (0.033764)
ln freedom of corruption					-0.048527 (0.045552)	0.016908 (0.026497)	-0.052510 (0.046107)
polity2 index					-0.003276* (0.001694)	-0.002895 (0.002701)	-0.003961** (0.001730)
political regime durability					-0.000286** (0.000136)	4.90E-05 (0.000618)	-0.000325* (0.000117)
ln literacy index					0.091582** (0.035612)	0.929958*** (0.221806)	0.106156*** (0.034294)
Type of estimation	Naive OLS	OLS	OLS	OLS	OLS	FE:CS	FE:PE

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Model summary

R-squared	0.073211	0.189062	0.445518	0.659863	0.66903	0.2246	0.681014
RESET-test (squares and cubes)	F = 75.550157, with p-value = P(F(2,1056) > 75.5502) = 2.16e-031						
RESET-test (cube only)	F = 60.544751, with p-value = P(F(1,1057) > 60.5448) = 1.7e-014						
RESET-test (squares only)	F = 62.525793, with p-value = P(F(1,1057) > 62.5258) = 6.59e-015						
F-test						32.407259 Prob.=0.0000	4.071864 Prob.=0.0001

(a) (…) denotes the t-stat;
(b) FE:CS and FE:PE denote cross-section fixed-effects, respectively period fixed-effects;
(c) ***, **, and * denote significance at 1, 5 and 10 % level of significance, respectively.

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