Institutional Constraints and Fiscal Policy Stability *

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Veto player theory (Tsebelis, 2002) predicts that the number of veto players influencing policy stabilities. While studies in OECD countries have shown supportive evidence (Tsebelis and Chang, 2004), there is few work on policy stability in nondemocracies. This project uses a new dataset from GSRE (Global State Revenues and Expenditures dataset) and perform an empirical test on veto player and budget stability in authoritarian countries. Preliminary analysis show that even in authoritarian countries, institutional constriants (veto players) lead to incremental budget changes.

Keywords: veto player, public policy

Introduction

Veto player theory (Tsebelis, 2002) defines 'veto players' as individuals or institutions whose agreement is required for a change of the status quo. This theory predicts that: when the number of veto players increase, the winning set that can defeat status quo will shrink, which in turn leads to higher policy stability. Since veto player is ultimately related to the level of institutional constraints, a collary is that institutional checks leads to more stable, incremental policy outcomes. With many checks and balances in the government, it will be harder to move policies from status quo equibilibrium.

Tsebelis and Chang (2004) apply veto player theory in the budget changes of the 19 OECD countries. In their analysis, parties with more polarized positions are modeled as potential veto players who could have blocked the policy proposals. Their results show that countries with more veto players have more stable budget policies.

On the other hand, veto player theory also implies that more veto players make politicians harder to adjust current policies. This is particularly salient in coutries with multiple veto players (e.g. the United States). During some time periods with exogenous shocks, the policy stability can be harmful and politicians may react to the long-time stability with rapid changes of policies, which forms a policy punctuation.

This theoretical expectation leads to another potential hypothesis: the amount of veto power may leads to larger policy punctuations. Punctuated Equilibrium Theory (PET) (John and Bevan, 2012, Jones and Baumgartner (2014)) argues that government budget shifts over due to the over-attention and under-attention to certain policy areas. Consequently it features with long periods of stability and short periods of radical changes. Considering the institutional constraints, we also want to test the effect of veto player on policy punctuations.

^{*}Replication files are available on the author's Github account (http://github.com/haowang666). Current version: April 13, 2017

Our study contributes to the existing literature in two parts: First, with the newly released GSRE data, we extend the coverage to a much broader sample size. Till now most empirical studies on budget changes are drawn from OECD countries, although a few studies have started looking at nondemocratic cases, they are mostly cases studies (Baumgartner et al., 2017, Lam and Chan (2015)). Second, we systematically evaluate the two theories. Our results show that institutional constraints lead to more stable policy changes. However, there is little evidence that institutional constraints lead to policy punctuation.

Argument

Institutional Constraints

Policy Punctuations

Veto player \Rightarrow unable to change policy rapidly \Rightarrow long term incremental changes and short-term rapid changes \Rightarrow punctual equilibrium (Epp and Baumgartner, 2016; Keefer and Stasavage, 2003).

Data

Data in this project comes from various sources. The dependent variable comes from the GSRE project (Global State Revenues and Expenditures dataset). GSRE is a comprehensive budget dataset based on the previous released historical documents from the International Monetary Fund (IMF). Comparing with the IMF COFOG dataset, GSRE increases coverage and accuracy of budgeting data for most authoritarian regimes and some democratic regimes. Since GSRE is built on IMF historical documents, it covers all independent states that have been or are the members of the IMF and are being coded as an authoritian regime in the (Geddes, Wright and Frantz, 2014) dataset.

Data on deliberative democracies and other regime-related variables come from the Variaties of Democracy (Vdem) project (Coppedge et al., 2016). Unlike the widely used democracy index like Polity (Marshall, Gurr and Jaggers, 2015), Vdem provides multidimensional measurements of regimes, including both democracies and autocracies.

Data on institutional constraints come from the political constraints index (POLCON) (Henisz, 2000). Political constraint index measures the risk of policy changes. Henisz uses a quantitative model to capture the competitiveness portion of the definition of democracy (competitiveness and participation) with a proxy of number of independent veto points over policy outcomes and distribution of preferences of those actors. POLCON is based on strong assumptions about each actors veto power. In the newest version, measure is also modified to take into account the extent of alignment across branches of government using data on the party composition of the executive and legislative branches.

Data on decentralization draws from the Political Institution Index (Beck et al., 2001).

Measuring Dependent Variables

To evaluate the budget-stability hypothesis and punctual equilibrium hypothesis, we create two different dependent variables. The volatility index measures the budget shifts of a certain country at a single time point. We use L-Kurtosis score to measure the degree of punctuations (peakness).

Volatility Index

I measure the budget stability as the simple euclidean distance of the between-year percentage differences. It can be written in the following equation: S_{jt} is the volatility index of the jth country at a certain year t. Since government budget has various categories: p_{jit} denotes the percentage of ith category out of total expenditure of the country j at year t. S_{it} will increase as the difference between p_{it} and p_{it-1} increases.

$$S_{jt} = \sqrt{\sum_{i=1}^{i} (p_{jit} - p_{jit-1})^2}$$
 (1)

For the percentage of each expenditure term p_{it} , $p_{it} \in [0,1]$, S_{jt} has the same boundary as [0,1]. Larger score means more volatile budget policies.

L-Kurtosis Score

To evaluate the distribution of budget shifts, we calculated the L-Kurtosis score of policy changes of each country across the available time spans. Specifically, we calculate the between-year difference of budget percentages, and then using L-Kurtosis statistics to find the L-Kurtosis (LK) score. L-Kurtosis (LK) is the 4th L-moment of the momemnt statistics. It is used to summarize the peakness of the variable distributions. An L-Kurtosis score of 0.123 approximites a Gaussian distribution (also see (Baumgartner et al., 2017; Breunig and Jones, 2011)). Higher LK score means heavy tails and high peaks. Figure 1 shows an example of LK score and distributions. In this figure, the red line has a LK score of 0.84, makes it more 'punctuated' than the blue line: it features long-time incremental changes and short-term radical shifts (for detailed calculation, check (Hosking, 1990)).

Independent Variables

Veto Player (Institutional Constraints)

We use two measurements of institutional constriants: POLCON index and

Decentralization

modeled by regional power index

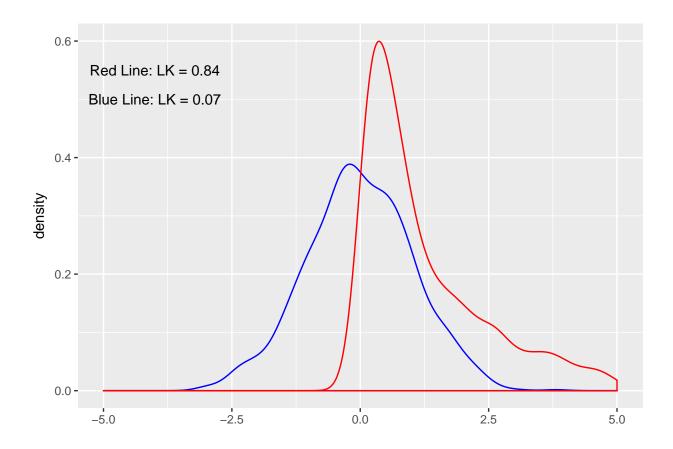


Figure 1: LK Score Example

Information Processing

modeled by levels of consulation and engagement

Corruption and Election Irregularity

Other Controls

Education, GDP, GDP grow rate,

Method and Results

GSRE dataset contain lots of missing data, we did 5 multiple imputations and report results of the original dependent variable as well as the 5 imputed ones.

Table 1 reports pooled OLS result. Table 2 reports fixed effect result. Table 3 reports L-Kurtosis score result. Table 4 reports twoway fixed effect result, as a robustness check. (Beck and Katz, 1995), (Beck and Katz, 2011)

Pooled OLS with Lagged DV and Panel Corrected Standard Errors

Fixed Effect Panel Data

Fiexed Effect with Two Way Effects

OLS with L-Kurtosis

Table 1: Lagged DV with PCSE

	Dependent variable:							
	(1)	(2)	(3)	(4)	(5)	(6)		
Constraints	-0.006 (0.015)	-0.018 (0.017)	-0.023 (0.017)	-0.016 (0.018)	-0.023 (0.017)	-0.035** (0.017)		
Party	-0.026^* (0.014)	-0.011 (0.015)	-0.008 (0.015)	-0.017 (0.016)	-0.008 (0.015)	0.004 (0.015)		
Consult	0.007** (0.003)	-0.003 (0.004)	-0.004 (0.004)	-0.002 (0.004)	-0.003 (0.004)	-0.002 (0.004)		
Federalism	-0.004 (0.010)	0.011 (0.011)	0.004 (0.011)	0.014 (0.012)	0.007 (0.011)	0.017 (0.011)		
Corruption	0.020 (0.013)	0.020 (0.015)	0.023 (0.014)	0.020 (0.015)	0.024* (0.014)	0.023 (0.014)		
Polity	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.0004 (0.001)	0.001 (0.001)	0.001 (0.001)		
Censorship	-0.005* (0.003)	0.007** (0.003)	0.011*** (0.003)	0.008** (0.003)	0.009*** (0.003)	0.009*** (0.003)		
Education	0.002 (0.001)	-0.003 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.001 (0.002)	-0.001 (0.002)		
GDP pc	0.003 (0.004)	0.022*** (0.005)	0.023*** (0.005)	0.025*** (0.005)	0.023*** (0.005)	0.021*** (0.005)		
GINI	0.0004 (0.0003)	-0.0005 (0.0003)	-0.0002 (0.0003)	-0.0001 (0.0003)	-0.0003 (0.0003)	-0.0002 (0.0003)		
Constant	0.031 (0.035)	-0.020 (0.040)	-0.029 (0.039)	-0.050 (0.040)	-0.032 (0.039)	-0.027 (0.039)		
Observations R ²	2,605 0.029	2,605 0.260	2,605 0.242	2,605 0.219	2,605 0.243	2,605 0.238		

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 2: Fixed Effect Regression Results

			Depender	ıt variable:		
	(1)	(2)	(3)	(4)	(5)	(6)
Constraints	-0.033 (0.020)	-0.035 (0.024)	-0.038 (0.023)	-0.015 (0.024)	-0.030 (0.023)	-0.069^{***} (0.024)
Party	0.027 (0.027)	-0.029 (0.032)	-0.058* (0.031)	-0.035 (0.033)	-0.055^* (0.031)	-0.038 (0.032)
Consult	-0.011* (0.006)	0.006 (0.007)	0.002 (0.007)	0.008 (0.007)	0.004 (0.007)	0.010 (0.007)
Federalism	0.006 (0.022)	0.007 (0.026)	0.013 (0.025)	0.010 (0.026)	-0.007 (0.025)	0.005 (0.026)
Corruption	-0.005 (0.034)	-0.108*** (0.040)	-0.064^* (0.039)	-0.086** (0.041)	-0.059 (0.039)	-0.050 (0.040)
Polity	0.002* (0.001)	0.003** (0.001)	0.001 (0.001)	0.001 (0.001)	0.002 (0.001)	0.002* (0.001)
Censorship	0.017*** (0.006)	-0.003 (0.007)	0.013** (0.006)	0.002 (0.007)	0.005 (0.006)	0.004 (0.006)
Education	-0.006 (0.004)	-0.006 (0.005)	-0.003 (0.005)	-0.006 (0.005)	-0.004 (0.005)	-0.006 (0.005)
GDP pc	0.037*** (0.013)	0.041*** (0.016)	0.025* (0.015)	0.044*** (0.016)	0.028* (0.015)	0.034** (0.015)
GINI	0.0005 (0.001)	-0.00002 (0.001)	0.0001 (0.001)	0.0004 (0.001)	0.001 (0.001)	0.001 (0.001)
Observations R ²	2,666 0.013	2,666 0.011	2,666 0.012	2,666 0.009	2,666 0.008	2,666 0.011

Note: *p<0.1; **p<0.05; ***p<0.01

Table 3: OLS Regression with L-Kurtosis as Dependent Variable

			Depender	ıt variable:		
	(1)	(2)	(3)	(4)	(5)	(6)
Constraints	0.004	-0.004	0.001	0.0003	0.002	0.003
	(0.007)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)
Party	-0.003	0.001	-0.002	0.0001	0.0004	0.001
	(0.005)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
Consult	-0.0005	0.0004	-0.00004	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Federalism	0.002	0.0003	-0.001	0.002	-0.0003	0.002
	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Corruption	0.003	0.003	0.004*	0.006***	0.006***	0.004**
	(0.004)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
Polity	-0.00002	0.0002	0.0001	0.00004	-0.0001	-0.0002
	(0.0004)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Censorship	0.001	0.0002	0.0003	-0.001	0.0004	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Education	0.001*	-0.001**	0.0001	-0.0004*	-0.0002	-0.0003
	(0.0005)	(0.0002)	(0.0003)	(0.0002)	(0.0002)	(0.0002)
GDP pc	0.001	0.001	0.0002	0.002*	0.001	0.001
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
GINI	0.00005	-0.0001	-0.00004	-0.0001	-0.0001**	-0.00005
	(0.0001)	(0.00005)	(0.0001)	(0.00005)	(0.00004)	(0.00004)
Constant	-0.011	0.008	0.012*	0.002	0.005	0.004
	(0.012)	(0.006)	(0.007)	(0.006)	(0.006)	(0.005)
Observations	108	108	108	108	108	108
\mathbb{R}^2	0.195	0.124	0.080	0.163	0.160	0.180
Adjusted R ²	0.093	0.013	-0.036	0.057	0.054	0.076

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 4: Two Way Fixed Effect Regression Results

			Dependen	t variable:		
	(1)	(2)	(3)	(4)	(5)	(6)
Constraints	-0.034^* (0.020)	-0.034 (0.024)	-0.033 (0.023)	-0.011 (0.024)	-0.027 (0.023)	-0.067^{***} (0.024)
Party	0.020 (0.027)	-0.029 (0.032)	-0.062** (0.031)	-0.036 (0.032)	-0.061** (0.031)	-0.042 (0.032)
Consult	-0.008 (0.006)	0.008 (0.007)	0.004 (0.007)	0.012* (0.007)	0.008 (0.007)	0.012* (0.007)
Federalism	-0.007 (0.022)	-0.013 (0.026)	0.001 (0.025)	0.002 (0.026)	-0.023 (0.025)	-0.011 (0.026)
Corruption	-0.023 (0.036)	-0.122*** (0.042)	-0.069^* (0.040)	-0.072^* (0.042)	-0.067^* (0.040)	-0.057 (0.041)
Polity	0.001 (0.001)	0.002 (0.001)	0.0005 (0.001)	-0.0001 (0.001)	0.001 (0.001)	0.002 (0.001)
Censorship	0.018*** (0.006)	-0.002 (0.007)	0.014** (0.006)	0.003 (0.007)	0.006 (0.006)	0.006 (0.006)
Education	-0.002 (0.006)	-0.001 (0.008)	0.006 (0.007)	0.009 (0.008)	0.004 (0.007)	0.001 (0.007)
GDP pc	0.028** (0.014)	0.043*** (0.016)	0.019 (0.015)	0.041** (0.016)	0.021 (0.015)	0.028* (0.016)
GINI	0.0004 (0.001)	-0.0001 (0.001)	0.0001 (0.001)	0.0004 (0.001)	0.0005 (0.001)	0.0005 (0.001)
Observations R ²	2,666 0.011	2,666 0.011	2,666 0.014	2,666 0.013	2,666 0.011	2,666 0.012

Note:

*p<0.1; **p<0.05; ***p<0.01

Appendix

Descriptive Statistics

Here I provide summary statistics of the variables I used in this study

summary statistics of deliberative democracy

Table 5: Deliberative Democracy Statistics

Statistic	N	Mean	St. Dev.	Min	Max
Deliberative Democracy	6,373	0.201	0.225	0.001	0.881
Justification on Public Policy	6,382	-0.067	1.226	-3.125	3.415
Justification on Common Goods	6,382	0.083	1.153	-3.394	2.868
Respect for Counterarguments	6,382	-0.526	1.297	-3.257	2.726
Range of Consultation	6,382	-0.194	1.267	-3.211	3.713
Range of Engagement	6,382	-0.266	1.311	-3.244	3.159

summary statistics on institutional constriants

Table 6: Institutional Constraints

Statistic	N	Mean	St. Dev.	Min	Max
Judical Constraints	6,382	0.450	0.269	0.006	0.979
Legislative Constraints	6,354	0.385	0.282	0.024	0.959
Institutionalization of Party	6,381	0.492	0.273	0.006	0.986
Institutionalizaed Democracy	5,904	2.874	3.609	0	10
Institutionalizaed Autocracy	5,904	4.403	3.517	0	10
Political Constraints Index-5	5,296	0.222	0.290	0.000	0.890
Political Constraints Index-3	6,079	0.147	0.196	0.000	0.688

summary statistics on federalism

summary statistics on curruption and election irregularities

summary statistics on other control variables

dependent variable components

In the following table I report the components of dependent variables. It is measured as the percentage expenditure of total expenditure. Two indicators are dropped out in

Table 7: Division of Power (centrl-regional) Index

Statistic	N	Mean	St. Dev.	Min	Max
Division of Power	5,774	0.304	0.330	0.000	0.991
Regional Government Power	5,782	-0.325	1.286	-2.664	2.775
Local Government Power	5,852	0.013	1.249	-2.733	2.326

Table 8: Corruption and Election Irregularities

Statistic	N	Mean	St. Dev.	Min	Max
Corruption Index	6,382	0.552	0.232	0.028	0.946
Executive Corruption Index	6,382	0.564	0.264	0.018	0.979
Vote Buying	1,531	-0.090	1.328	-3.033	3.228
Election Irregularities	1,531	-0.175	1.348	-3.095	3.290

Table 9: Other Control Variables

Statistic	N	Mean	St. Dev.	Min	Max
Media Censorship	6,382	-0.311	1.434	-3.036	3.316
Education	6,184	4.470	2.691	0.004	13.285
GDP pp(logged)	5,839	7.629	0.886	5.315	10.667
GDP growth	5,807	1.763	6.388	-61.493	86.946
Income Inequality	4,137	42.720	10.359	15.000	73.900
Civial War	6,200	0.090	0.286	0	1
Oil Production Per Capita	6,164	347.425	2,506.486	0.000	78,588.800

the further analysis due to techniqual concerns. The variable subpentrans contains too few points, and the variable pensions must be dropped due to the convengence issue in multiple imputation.

Table 10: Components of Budget Stability Measurements

Statistic	N	Mean	St. Dev.	Min	Max
expend_security_EXP	3,034	0.166	0.123	0.000	0.712
expenddefence_EXP	2,418	0.143	0.119	0.00001	0.712
exp_public_order_EXP	1,300	0.059	0.034	0.000	0.248
wagessalaries_EXP	3,981	0.293	0.128	0.00000	0.859
pensions_EXP	1,131	0.058	0.065	0.000	0.392
total_welfare_EXP	2,927	0.238	0.127	0.00003	0.920
education_EXP	2,624	0.133	0.061	0.00002	0.388
health_EXP	2,337	0.058	0.032	0.00001	0.212
social_protection_EXP	1,451	0.055	0.073	0.000	0.599
housing_EXP	1,084	0.035	0.036	0.000	0.420
owelfarespend_EXP	1,334	0.067	0.077	0.00000	0.510

dependent variable statistics

Table 11: Volatility Index Table

Statistic	N	Mean	St. Dev.	Min	Max
Original	5,299	0.103	0.144	0.00000	1.110
Imputation 1	5,299	0.249	0.176	0.00001	1.318
Imputation 2	5,299	0.256	0.172	0.00001	1.085
Imputation 3	5,299	0.245	0.171	0.00001	1.810
Imputation 4	5,299	0.253	0.173	0.00001	1.121
Imputation 5	5,299	0.249	0.169	0.00001	1.064

Missing Cases

GSRE contains lots of missing cases. To avoid losing statistical powers and potential bias due to listwise deletion, this article employs multiple imputation of the GSRE part data. Results reported in the paper are from the first imputation. Appendix includes the rest 4 imputations.

The total missing map is showing in the correspoding figure. In this table, the components represent the pertentage expenditure of each sector in terms of total expenditure.

I also calculated resutls without multiple imputation: points that are missing in the GSRE dataset is set to be 0. Theoretically in this situation missing cases will contribute

Table 12: LK Score Table

Statistic	N	Mean	St. Dev.	Min	Max
Original	158	0.003	0.007	-0.015	0.053
Imputation 1	158	0.013	0.004	0.001	0.026
Imputation 2	158	0.013	0.004	-0.008	0.034
Imputation 3	158	0.013	0.004	0.001	0.030
Imputation 4	158	0.013	0.004	0.001	0.025
Imputation 5	158	0.013	0.004	0.001	0.022

Missingness Map

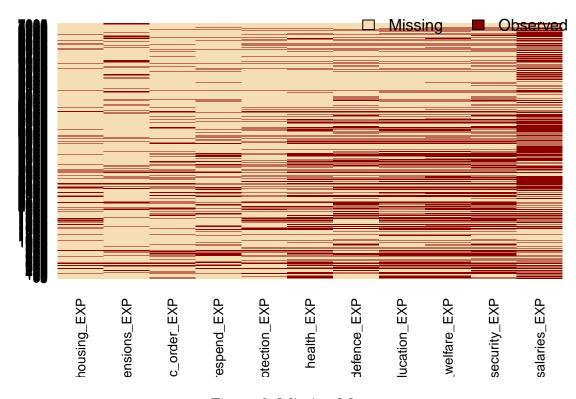


Figure 2: Missing Map

zero effects to the policy stability indicator. I calculate dependent variable while filling missing cases as 0. After the DV is imputed, I recoded observations with 0 values as missing (This is because a completely missing case will yield 0 as the outcome).

The density plot of stability index without imputation is shown in the following figure

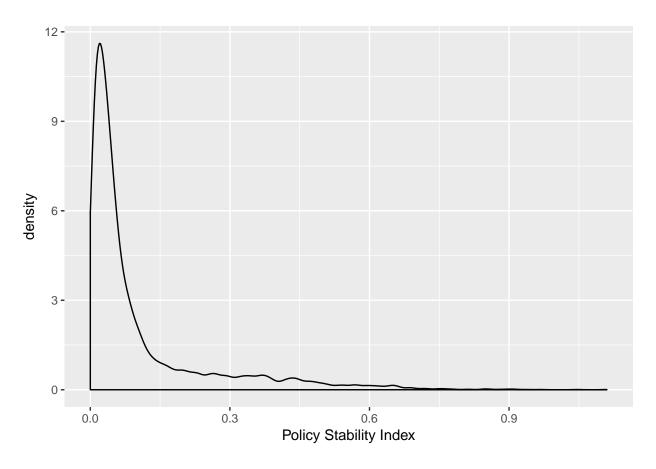


Figure 3: Policy Stability Index Density

The relationship between the raw DV and the imputed DV is shown in the following graph. Due to the page limits only the relationships between the original dependent variable and the first two imputed dependent variables are displayed here.

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