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Does direct democracy matter for fiscal policy volatility?

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Abstract

This study examines the relationship between direct democracy and fiscal policy volatility in a global sample of 131 countries during 1975-2018. The results show that direct democracy is an important factor when shaping fiscal policy volatility outcomes. The estimates reveal that a higher direct democracy potential decreases fiscal policy volatility. The observed negative link between direct democracy and policy volatility is robust to the inclusion in the analysis of different explanatory variables that may affect both direct democracy and fiscal volatility. Likewise, the findings do not depend the econometric specification, the identification of the discretionary component of fiscal policy or the impact of outliers. A closer look at different institutions reveals that the observed negative effect is due to the scope of bottom-up participatory procedures such as citizen initiatives rather than to top-down mechanisms like plebiscites or obligatory referendums.

1 Introduction

A greater scope of direct democracy institutions fostering citizen participation might decrease policy volatility due to a higher collective intelligence level in the decision-making process (Landemore, 2017). The insight provided by different studies analyzing the effects of (i) additional and diverse problem solvers (Hong and Page, 2004), (ii) the constraints implied by additional veto players (Hug and Tsebelis, 2002; Tsebelis, 1999) and (iii) the higher efficiency stemming from the aggregation of useful signals as to which policy to choose (Dutt and Mobarak, 2016) support the view that citizen participation in policy design through direct voting processes should increase stability . Nevertheless, detractors of direct democracy point out that by putting political issues directly to the citizens, economic policy might turn erratic and uncertain given that policy will become more responsive to a changing, politically immature and uneducated public opinion.

Studies analyzing the effect of representative democracies on the volatility of fiscal policy usually find a negative relationship (Agnello and Sousa, 2014; Dutt and Mobarak, 2016; Fatás and Minhov, 2013;). Thus, it seems that a movement towards representative democratic institutions, when compared to dictatorships, leads to a more prudent fiscal stance.

However, the effect of direct democracy institutions on fiscal policy volatility has not been studied yet due to the lack of comparable and reliable data measuring direct democracy across-countries. This omission is potentially important given that direct and representative democracy institutions are distinct from each other. While representative systems focus on making rulers responsive to citizens through electoral competition and emphasize the importance of protecting individual and minority rights against the tyranny of the majority, direct democracy institutions emphasize direct popular voting processes in which citizens register their choice or opinion on specific issues through a ballot (Altman, 2017). Accordingly, it is important to disentangle the effects of representative democracy on policy volatility from those of direct popular voting.

To shed light on this issue, this study investigates the link between direct democracy and fiscal policy volatility in a sample of 131 countries for the period 1975-2018 employing the indicator recently developed by Altman (2017) and a metric of fiscal policy volatility calculated by means of instrumental variable (IV) regressions.

2 Data

The sample countries have been selected with the objective of maximizing geographic and temporal coverage for both the dependent and explanatory variables. The list of countries included in the analysis is provided in the Appendix.[1]

2.1 Measuring Direct Democracy and Policy Volatility

The analysis of the effects of direct democracy on fiscal policy volatility requires data. Therefore, to measure direct democracy this study employs the composite index developed in Altman (2017) by means of factor analysis. This indicator captures cross-country differences in the scope and potential of direct democracy as the result of differences in (i) the ease of initiation and approval of each direct democracy mechanism (MDD) (i.e popular initiatives , referendums, obligatory referendums, authorities plebiscites,) and (ii) the consequences of the vote. For each direct democracy mechanism (MDD), and for any country i at period t the index is calculated as:

$$MDD_{it} = [\exists_{it}(1 - S_{it})CT_{it} + (1 - SQD_{it})AQ_{it}]D_{it} \times TC_{it} \tag{1}$$

Ease of initiation is measured by the existence of a direct democracy process ($\exists$), the number of signatures needed (S) and the time limits to collect signatures (CT). Ease of approval is measured by both, the status quo ability to defend itself (SQD) and approval quorums (AQ). On the other hand, the consequences and the impact of direct democracy procedures are measured by its decisiveness (D) (i.e, binding or consultative) and its threat capability (TC). Finally, these mechanism-specific scores are aggregated to produce a direct democracy practice potential ($DDPP$) indicator for each country-year:[2]

$$DDPP_{it} = 1.5PI_{it} + 1.5RF_{it} + OR_{it} + PL_{it} \tag{2}$$

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[1] The main criterion to include a country in the sample, has been the existence of a complete series along the time dimension. By doing so, the use of potentially controversial interpolation procedures has been avoided. Due to the lack of complete data series since 1975, the set of countries from the former USSR have been left out of the analysis.

[2] For further details on the calculations of each sub-indicator see Alatman (2017).

On the other hand, fiscal policy volatility is measured as the standard deviation of the discretionary component of fiscal policy identified as the variation in fiscal policy that cannot be explained by current macroeconomic conditions (i.e, by the state of the business cycle). To that end, the following regression explaining government final consumption expenditure as a percentage of GDP (G) (which is the chosen proxy for fiscal policies) is estimated for each of the 131 sample countries:

$$\ln \Delta G_{it} = \alpha_i + \gamma_i \ln \Delta Y_{it} + u_{it} \tag{3}$$

where Y denotes real GDP. Each of the country-by-country time-series regressions relies on a instrumental variable (IV) strategy, which allows to control for the possible reverse causality running from government spending to output. In particular, GDP is instrumented with a vector of control variables that include a time trend, the inflation rate and an index of oil prices. With the estimates of $\hat{u}_{it}$ in hand, the volatility of discretionary fiscal policy is calculated as $\sqrt{var\left(\hat{u}_{it}\right)}$. This metric reflects fiscal activism and facilitates the comparison of results with earlier studies analyzing the effects of the democracy on policy and output volatility (Fatás and Mihov, 2013; Agnello and Sousa, 2014).

2.2   Preliminary Evidence

Figure (1) provides a first graphical illustration on the association between the average values of the direct democracy index and the logarithm of fiscal policy volatility during 1975-2018. The scatter plot suggests the existence of a negative relationship between the scores of the direct democracy index developed by Altman (2017) and the metric of fiscal policy volatility. This means that on average countries with higher direct democracy scores display a less volatile fiscal policy whereas those countries where the scope of direct democracy procedures is limited are characterized by a higher degree of fiscal policy volatility. Indeed, the pairwise correlation between the two variables is statistically significant ($\rho = -0.17$ with p-value $= 0.00$).

Nevertheless, the information provided by Figure (1) should be treated with caution, as the observed connection between direct democracy and policy volatility may simply be a spurious correlation driven by the omission of other variables or the role played by outliers. In view of these potential prob-

Figure 1: Direct democracy and Policy volatility (1975-2018).
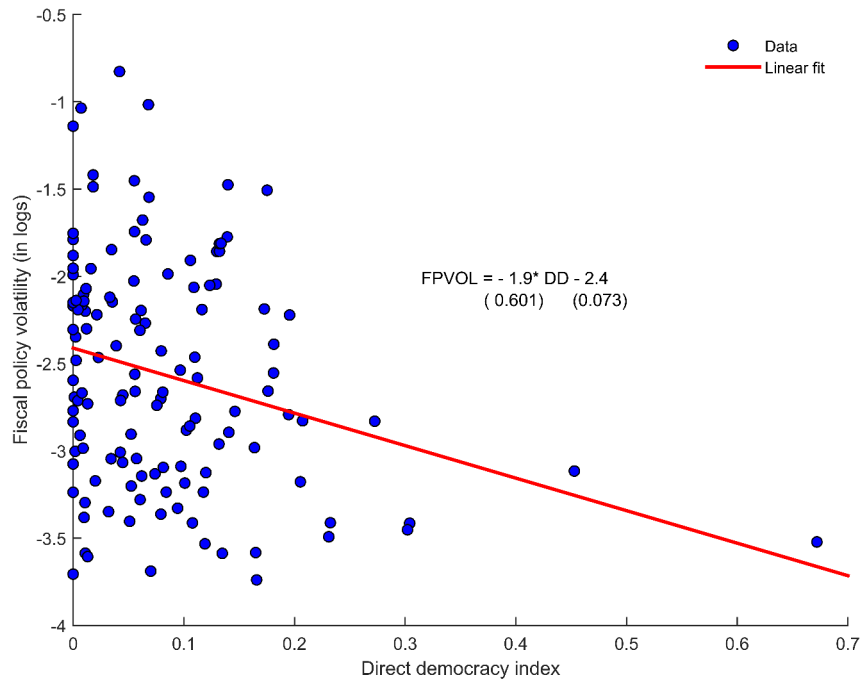
lems, in the next section, a more appropriate statistical analysis on the link between these variables is developed.

3   Econometric Model

The model used to investigate the relationship between direct democracy and policy volatility reads as: [3]

$$\ln \sigma_{it}^g = \alpha + \lambda DD_{it} + X_{it}\beta + D_r\theta + D_t\gamma + \epsilon_{it} \tag{4}$$

where $\ln \sigma^g$ denotes the logarithm of fiscal policy volatility, DD is the direct democracy index and λ is the key parameter of interest. D_r is a matrix of regional dummies and D_t is a matrix of time dummies.

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[3]The year groupings defining the temporal sample size T go as follows: 1975-1979, 1980-1984, 1985-1989,..., 2015-2018. Thus, $T = 9$ and the metric of policy volatility, σ_{it}, is calculated in regularly-spaced windows of five years except for the final period, which comprises a window of your years.

The use of geographical and time-period fixed effects helps to control for unobserved regional and time heterogeneity. In turn, θ and γ are their corresponding parameter vectors.

X is a matrix of regressors that may correlate with both, the volatility of fiscal policy and the index of direct democracy. β is the parameter vector of the control variables. The set of controls in X includes historical, geographical, economic, socio-demographic and institutional factors. In particular, the specification includes a set of legal origin dummies and considers the possible influence of colonial legacies on contemporary political institutions and policy outcomes by means of a dummy variable identifying former European colonies. Controls for geographical characteristics refer to the impact of absolute latitude and country size. To further control for differences in economic characteristics, the model incorporates real GDP per capita, the share of natural resource rents in the GDP, an index of economic globalization and the volatility of the terms of trade. The model also controls for differences in population size, human capital levels (proxied by the average years of education) and the share of catholic, muslim and protestant religion followers. Indexes measuring the extent to which the ideal of liberal democracy is achieved and the strength of rule of law are introduced to capture differences in the institutional settings across countries. Finally, an index measuring the degree of political regime presidentialism is included.[4]

4   Results

Table (1) presents the results obtained when estimating different specifications of the model shown in Equation (4).[5] The main finding is that the estimated coefficient of the direct democracy variable is in all cases negative and statistically significant at the 5% level, indicating the existence of a negative relationship between direct democracy and fiscal policy volatility. As observed in Columns (1) to (4), the negative relationship is not affected by the inclusion in the analysis of the different controls, confirming that the observed association between direct democracy and policy volatility shown in Figure (1) is not simply a spurious correlation resulting from the omission of additional covariates. In fact, the magnitude of the coefficient of the measure of direct democracy tends to be relatively stable in the various specifications, which increases our confidence in suggesting that the relationship

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[4]Table A3 in the Appendix presents the detailed definitions, sources and descriptive statistics of the variables.
[5]Tables A1 and A2 in the Appendix report all the parameter estimates.

between direct democracy and policy volatility is not driven by an omitted variable.[6]

Table 1: Main Results

	Baseline specifications				Robustness checks			
	Model (1)	Model (2)	Model (3)	Model (4)	Level spec. (5)	Alternative Volatility (6)	Direct demo. Outliers (7)	Policy vol. Outliers (8)
Direct democracy	-0.564**	-0.512**	-0.626***	-0.600***	-0.073**	-0.786**	-0.660**	-0.490**
	(0.240)	(0.209)	(0.201)	(0.204)	(0.032)	(0.320)	(0.313)	(0.192)
History and geography	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Economic factors	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Socio-demographic	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Institutions	No	No	No	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.284	0.358	0.381	0.394	0.171	0.415	0.382	0.393
Countries	131	131	131	131	131	131	127	126
Observations	1179	1179	1179	1179	1179	1179	1143	1134

Notes: The dependent variable in Columns (1) to (4) is the logarithm of the measure of policy volatility described in the second section. Columns (5) to (8) report different robustness checks. HAC Standard errors in parenthesis * Significant at 10% level, ** significant at 5% level, *** significant at 1% level.

The robustness of the observed link between direct democracy and policy volatility is investigated in Columns (5) to (8). As a first check, Column (5) reports the results of a level-level specification. Although the quality of the fit indicated by the R^2 of the model in this specification is lower, the observed negative link between direct democracy and volatility remains significant. In a second check, a different fiscal policy volatility variable is identified following the IV strategy pointed by Dutt and Mobarak (2016). The identification of the discretionary component of fiscal policy for each country in this context is given by the estimated residuals of Equation (5):

$$G_{it} = \beta_{0i} + \beta_{1,i}G_{it-1} + \beta_{2,i}\ln Y_{it} + \delta Z_{it} + u_{it} \tag{5}$$

where $\ln Y$ is the logarithm of real GDP, and Z is a vector of control variables including inflation, inflation squared and an index of oil prices. The country-by-country IV regressions in this case instrument GDP with two lags of GDP growth because of the possible reverse causality from government

[6]As an alternative to the employment of the Liberal Democracy index control variable taken from the VDEM database, robustness checks on the validity of the results shown in Tables (1) and (2) have been carried out using a composite index of democracy that combines the indicators of Civil Liberties and Political Rights from the Freedom House with the Polity 2 (see Hadenius and Teorell, 2005; 2007). The main findings of the study remain unaltered when using this metric of democracy and can be provided upon request.

spending to output. As shown in Column (6) this approach produces similar results. Columns (7) and (8) show the negative effect is robust to the exclusion of outliers in the direct democracy indicator and the policy variable.[7]

Table (2) provides evidence on the specific direct democracy mechanisms that might be responsible for the observed negative link. As shown in Columns (1) to (3), bottom-up mechanisms exert a negative effect on fiscal policy volatility. This result can be explained by the fact that bottom-up direct democracy institutions increase the constraints that governments face in the course of policy implementation limiting fiscal activism. Therefore, we find that citizen initiative and bottom-up procedures add the electorate as an additional veto player to policy-making processes and prevent the construction of logrolling coalitions that can challenge the status quo, which is in line with the predictions of Hug and Tsebelis (2002). Columns (4) to (6) show that the link between fiscal policy and direct democracy is not statistically significant at the 5% level for top-down direct democracy institutions such as the plebiscite or the obligatory referendum.

Table 2: Direct democracy mechanisms

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)
Bottom-up	-0.506*** (0.177)					
Popular referendums		-0.116* (0.069)				
Citizen initiatives			-0.291*** (0.084)			
Top-down				-0.233* (0.134)		
Plebiscites					-0.046 (0.045)	
Obligatory referendums						-0.089* (0.054)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Regional effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of countries	131	131	131	131	131	131
Observations	1179	1179	1179	1179	1179	1179
R^2	0.393	0.391	0.395	0.392	0.391	0.391

Notes: The dependent variable is in all cases the measure of policy volatility described in the second section. All regressions include the full set of controls. HAC Standard errors in parenthesis. * Significant at 10% level, ** significant at 5% level, *** significant at 1% level.

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[7]An observation i is defined as an outlier if either $\bar{\sigma}^g_i$ or $\bar{DD}_i \notin [Q_1 - 1.5IQR, Q_3 + 1.5IQR]$.

5   Conclusions

This letter investigates the link between direct democracy and fiscal policy volatility in a sample of 131 countries during 1975-2018. The results show that direct democracy decreases fiscal policy volatility which is in line with the additional veto player theory. This stabilizing effect is robust to the inclusion of additional regressors, the identification procedure of policy volatility and the exclusion of outliers. This result is driven by the scope of bottom-up institutions such as the citizen initiative rather than by top-down procedures.

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