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Popular protest and political budget cycles: A panel data analysis

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HIGHLIGHTS

- Do governments facing popular protest use fiscal policy for re-election purposes?
- Popular protest is measured by anti-government demonstrations and general strikes.
- We find that the magnitude of PBCs depends on the popularity of the government.
- The effect of protest on the manipulation is strongest in young democracies.

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ABSTRACT

We test the hypothesis that governments facing popular protest are more likely to use fiscal policy for re-election purposes, employing data of 65 democratic countries – both developed and developing – over the period 1975–2005. Using the number of anti-government demonstrations and general strikes in pre-election years as measures of popular protest, our results lend support to this hypothesis. The effect of protest on the manipulation of fiscal policy for re-election purposes is strongest in young democracies.

1. Introduction

As voting behaviour is to some extent based on voters' material wellbeing and the country's economic performance (Franzese, 2000), incumbents have powerful incentives to use fiscal policy for re-election purposes (Nordhaus, 1975). Several recent studies suggest that political budget cycles (PBCs) exist (Shi and Svensson, 2006; Alt and Lassen, 2006), but these studies differ in their assessment of the circumstances that make election-motivated budget deficits more likely.[1] For instance, Brender and Drazen (2005) argue that in young democracies, where the electorate does not have much experience with elections, voters are more likely to 'fall' for the trick of making the economy look good right before elections.

There is evidence that the popularity of the incumbent matters. If the polls suggest that the incumbent is likely to win the election, there is little need to manipulate fiscal policy for re-election purposes (Frey and Schneider, 1978; Golden and Poterba, 1980; Lewis-Beck and Stegmaier, 2000; Kayser, 2005; Baleiras, 1997). A related issue that has received limited attention so far is the role of popular protest. In line with the view that the incumbent's popularity matters for the occurrence of PBCs, we hypothesize that governments facing mass popular protest will be more inclined to use fiscal policy to please the electorate. We employ data of 65 democratic countries – both developed and developing – over the period 1975–2005. Using the number of anti-government demonstrations and general strikes in pre-election years as measures of popular protest, our results lend support to our hypothesis. The effect of protest on the occurrence of PBCs is strongest in young democracies.

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[1] See de Haan and Klomp (2013) for an extensive survey of this literature. For a more general survey on the political economy of budget deficits, we refer the reader to Eslava (2011).

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The remainder of this paper is structured as follows. The next section gives a description of the methodology and data used. Section 3 presents our empirical findings and the final section concludes.

2. Data and methodology

We use a large unbalanced panel dataset of 65 developed and developing countries over the period 1975–2005. As the PBC theory presumes that competitive elections take place, we only include country-years with a Polity IV democracy score of at least six. Table A.1 in the Appendix lists all countries and years included. The fiscal data are taken from the *International Financial Statistics* and the *Government Finance Statistics* of the IMF, while the election data come from electionsource.org and various issues of the Political Handbook of the World. Table A.2 in the Appendix provides a detailed description of all data used and their sources. The model can be specified as:

$$FISC_{it} = \alpha_i + \beta FISC_{it-1} + \gamma X_{jit-1} + \mu POP_{it-1} + \lambda ELEC_{it} + \eta(ELEC_{it} \times POP_{it-1})\varepsilon_{it}. \quad (1)$$

The variable $FISC_{it}$ is a fiscal policy indicator (budget balance or total spending) in country i in year t, X_{jit-1} is a vector of (lagged) control variables with j elements, $ELEC_{it}$ is our election variable as described below, POP_{it} is our measure of popular protest, α_i is a country specific intercept, and ε_{it} is an error term. We use an election variable suggested by Franzese (2000) that takes the timing of an election in the course of the year into account. It is calculated as $M/12$ in an election year and $(12 - M)/12$ in a pre-election year, where M is the month of the election. In all other years its value is set to zero.

We only include elections if the government has sufficient time to change its fiscal policies. It usually takes some time before the impact of election-motivated fiscal policies becomes visible. For instance, the incumbent may have little opportunity to use expansionary fiscal policy in elections that take place shortly after the fall of government. That is why an election is included if the election is held in the fixed date (year) specified by the constitution, or if the election occurs in the last year of a constitutionally fixed term for the legislature. Also when an election is announced more than one year in advance, it is taken up in the analysis.[2]

We use a popular protest indicator based on the number of anti-government demonstrations and general strikes taken from Databanks International (2005). An anti-government demonstration is defined as any peaceful public gathering of at least 100 people for the primary purpose of displaying or voicing their opposition to government policies, while a strike is defined as work suspension of 1000 or more industrial or service workers that involves more than one employer and that is aimed against national government policies. On average, there are about 1.2 public protests (demonstrations and/or strikes) in a certain country-year, with a maximum of about 5 in India. So, the number of protests varies greatly across countries. We allow for the possibility that the strength of an individual protest diminishes with the total number of protests by using the natural logarithm of the number of protests.[3]

As public protests may not be exogenous, we use an instrumental variables approach suggested by Newey (1987). We include variables related to the culture of and opportunities for anti-government protest. First, the effect of protest is arguably stronger if the protest is organized by special interest groups, such as labour unions.[4] Second, mass demonstrations or strikes are more easily to organize in more densely populated areas. To measure this, we use urban population share reported in the World Bank Development Indicators. Finally, some countries may have more protest than others because interests are much more fractionalized. We use the index of ethnolinguistic fractionalization from Alesina et al. (2003) to proxy this.

Table 1
Estimation results of the first-stage IV model.

	Total protest (1)	Demonstrations (2)	Strikes (3)
First stage			
Interest groups	0.409 [2.75]**	0.587 [3.05]**	0.305 [2.89]**
Urban population share	0.225 [1.98]**	0.351 [2.05]**	0.074 [1.82]*
Fractionalization	0.562 [1.88]*	0.785 [1.91]*	0.345 [1.41]
Number of countries	65	65	65
Number of observations	1412	1412	1412

Note: Estimates of Eq. (1). t-values are shown in square brackets.
* Indicates significance at 10%.
** Indicates significance at 5%.

The correlation between these variables and government spending or the budget balance is about zero. We check the validity of our instruments by the Sargan test, which illustrates that our instruments are valid ($p > 0.05$). The results of the first-stage regression are reported in Table 1 and support our idea that popular protest is driven by the variables chosen. We use the fitted values of the first-stage regression as our instrumental variable in the second-stage.

The vector X_{jit-1} contains control variables suggested by previous studies. The controls are included with a one-year lag. As suggested by Brender and Drazen (2005), we include real GDP per capita to control for the level of development of a country as this could influence voters' preferences for public goods as well as the size of the tax base. The growth rate of real GDP captures the influence of the business cycle. A high dependency ratio may reduce the tax revenue and increase spending on, for instance, social security (Klomp and de Haan, forthcoming). Inflation may affect government receipts and expenditures through nominal progression in tax rates and tax brackets, and via price-indexation of receipts and expenditures. On the other hand, unexpected inflation erodes the real value of nominal government debt so that the overall effect of inflation on the budget balance is not clear a priori (Mink and de Haan, 2006). Finally, we include a dummy variable that is one when a country is a member of a monetary union at time t. Most monetary unions apply a constraint on the government balance, such as the Stability and Growth Pact within the European Economic and Monetary Union (EMU).

We also include several political control variables suggested by previous studies. Persson and Tabellini (2002) argue that elections may have a different effect on fiscal policy under proportional and majoritarian electoral rules. Proportional elections induce politicians to seek support from larger groups in the electorate. It is then plausible to expect larger expansions under proportional electoral rules than under majoritarian electoral rules. Likewise, there may be differences between parliamentary vs. presidential systems. In

[2] Some government in our sample have the possibility to call elections endogenously within one year. So, these governments have the incentive to schedule new elections when they believe to have enough support among the voters to win the next election. However, to test the robustness of our results on this issue, we re-estimate the model including also the endogenous elections. The results do not differ substantially from those reported (results are available upon request).

[3] We use ln(0.0001 + actions) for all countries to avoid losing observations with zero actions.

[4] Measured by the number of special interest groups reported in various issues of the World Guide to Trade Associations (Zils, 2013).

Table 2
Estimation results of the second-stage IV model.

	Fiscal balance			Government spending		
	Total protest (1)	Demonstrations (2)	Strikes (3)	Total protest (4)	Demonstrations (5)	Strikes (6)
Second stage						
Lag of the fiscal variable	0.588 [2.00]**	0.652 [2.15]**	0.748 [2.08]**	0.810 [2.07]**	0.728 [2.12]**	0.819 [2.20]**
Real GDP per capita	0.556 [1.61]	0.530 [1.67]*	0.524 [1.73]*	−0.357 [1.85]*	−0.360 [1.78]*	−0.381 [1.78]*
Growth rate of real GDP per capita	0.008 [2.41]**	0.008 [2.44]**	0.008 [2.23]**	−0.005 [2.11]**	−0.006 [1.91]*	−0.006 [2.09]**
Inflation rate	−0.013 [−1.49]	−0.013 [−1.52]	−0.014 [−1.30]	0.009 [1.10]	0.008 [1.04]	0.008 [0.97]
Age dependency ratio	−0.028 [−2.30]**	−0.031 [−2.07]**	−0.032 [−2.33]**	0.015 [2.29]**	0.014 [2.03]**	0.014 [1.98]**
Partisan cycle	0.453 [1.98]**	0.514 [2.20]**	0.490 [2.50]**	−0.344 [2.15]**	−0.353 [1.99]**	−0.367 [2.17]**
Parliamentary systems	−1.940 [−1.15]	−1.910 [−1.18]	−2.108 [−1.24]	−1.293 [−0.91]	−1.449 [−0.88]	−1.494 [−0.92]
Majoritarian systems	−3.257 [−2.74]**	−2.842 [−2.50]**	−2.833 [−2.61]**	2.031 [2.28]**	2.014 [2.15]**	2.206 [2.46]**
Monetary union	2.316 [1.24]	2.080 [1.35]	2.359 [1.47]	−1.424 [1.52]	−1.448 [1.38]	−1.629 [1.19]
Protest	−0.831 [−1.40]	−0.925 [−1.51]	−0.452 [−1.36]	1.079 [1.77]*	1.219 [1.92]*	0.630 [1.59]
Access to information	0.156 [1.01]	0.135 [1.05]	0.129 [0.97]	−0.212 [−0.98]	−0.209 [−0.89]	−0.186 [−1.00]
Elections	−0.672 [−2.18]**	−0.744 [−2.15]**	−0.849 [−2.13]**	0.567 [2.67]**	0.588 [3.00]**	0.630 [2.90]**
Protest × Elections	−0.145 [−1.98]**	−0.161 [−2.04]**	−0.093 [−1.74]*	0.210 [2.20]**	0.239 [2.69]**	0.129 [1.88]*
Number of countries	65	65	65	65	65	65
Number of observations	1412	1412	1412	1412	1412	1412
Sargan test (p-value)	0.812	0.773	0.751	0.642	0.726	0.692
Wald test on exogeneity (p-value)	0.000	0.000	0.000	0.000	0.000	0.000

Note: Estimates of Eq. (1). t-values are shown in square brackets.
* Indicates significance at 10%.
** Indicates significance at 5%.

contrast to a parliamentary system, in a presidential system the executive cannot be brought down by the legislature, but it is directly accountable to the voters and this may affect fiscal policy. We therefore include dummy variables that are 1 for majoritarian system and parliamentary systems, respectively. We also include a partisan variable to control for differences between right wing and left wing governments in fiscal policy. According to the partisan approach, politicians focus upon the interests of their respective constituencies. There is evidence suggesting that spending priories differ among right wing and left wing governments, but whether partisan factors influence budget deficits is less clear (cf. Hallerberg and Clark, 2000). Our partisan variable is measured on a scale running from −1 (complete left wing) to +1 (full right wing). Finally, Shi and Svensson (2006) argue that access to information affects the likelihood that a PBC occurs. As a proxy for the public's access to information, we use the sum of radios, newspapers, televisions and internet access points per capita. In unreported results that are available on request, we also interacted this information variable with our election variable.[5]

3. Results

Table 2 reports the estimation results for the election cycle, conditional on popular protest, on the fiscal balance (column (1)) and government spending (column (4)). Our results confirm the conclusions of a number of recent studies, that upcoming elections affect fiscal policy. Our results suggest that the fiscal balance is about 0.7%-point of GDP lower in an election year. This is mainly due to an increase in government spending of about 0.6%-point of GDP in an election year. In addition, it turns out that there is a significant interaction between elections and popular protest confirming our hypothesis. Governments facing strong popular protest are spending more in a pre-election year, which in turn increases the budget deficit.

To illustrate this conditionality, we use the methodology suggested by Ai and Norton (2003) and Brambor et al. (2006), i.e., we plot the marginal effects of elections on fiscal policy conditional on popular protest based on the estimated cross-partial derivative. Fig. 1 shows the marginal effect of elections on the fiscal balance (vertical axis), conditional on popular protest (horizontal axis). The dashed lines show the 95% confidence intervals. The marginal effect is statistically significant effect when the upper and lower bounds of the confidence interval are both above (or below) zero. There appears to be a threshold for popular protest above which the marginal effect turns significant. For country-years above this threshold, the marginal effect of elections becomes significant (the upper and lower bounds of the confidence interval are both below zero). Similar results are found for government spending (see Fig. 2).

In columns (2)–(3) and (5)–(6) of Table 2, we split our popular protest measure into demonstrations and strikes. The results

[5] In contrast to Shi and Svensson (2006), we do not find a direct or conditioning impact of access to information on election-induced fiscal policy.

Table 3
OLS and system-GMM estimation results.

	Fiscal balance		Government spending	
	Total protest OLS (1)	Total protest System GMM (2)	Total protest OLS (3)	Total protest System GMM (4)
Protest	−1.031 [−1.50]	−0.738 [−1.43]	1.491 [1.89]*	1.143 [1.67]*
Elections	−0.813 [−2.18]**	−0.588 [−2.01]**	0.751 [2.81]**	0.393 [1.97]**
Protest × Elections	−0.195 [−1.99]**	−0.127 [−1.76]*	0.127 [2.05]**	0.198 [1.78]*
Number of countries	65	65	65	65
Number of observations	1412	1412	1412	1412
Sargan test (*p*-value)		0.645	0.682	0.574
Arellano–Bond AR(1)		0.000		0.000
Arellano–Bond AR(2)		0.715		0.611

Note: Estimates of Eq. (1). *t*-values are shown in square brackets.
Estimated including the same control variables as in Table 2.
* Indicates significance at 10%.
** Indicates significance at 5%.

Table 4
Sample split democratic history.

	Young democracies		Old democracies	
	Fiscal balance (1)	Government spending (2)	Fiscal balance (3)	Government spending (4)
Elections	−0.847 [−2.88]**	0.722 [3.97]**	−0.566 [−1.92]**	0.488 [2.64]**
Popularity × Elections	−0.167 [−2.97]**	0.305 [3.38]**	−0.127 [−2.39]**	0.138 [3.32]**

Note: Estimates of Eq. (1). *t*-values are shown in square brackets.
Estimated including the same control variables as in Table 2.
** Indicates significance at 5%.

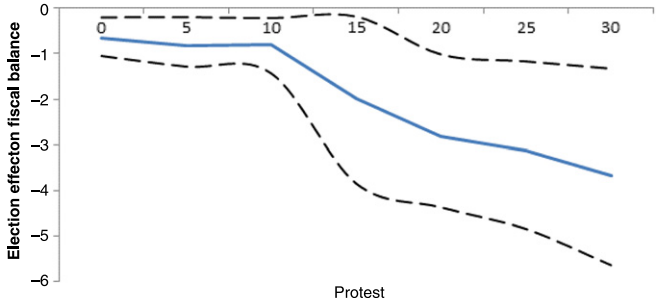

Fig. 1. Interaction of PBC and protest: fiscal balance. The graph shows the marginal effect of elections on fiscal policy conditional on popular protest. The dotted lines indicate the 95% significance interval. The effect is significant if both lines of the significance interval are below or above zero.

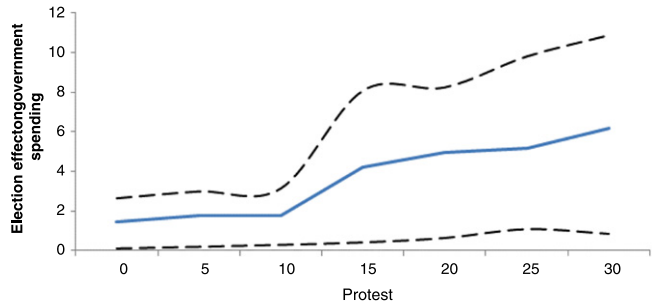

Fig. 2. Interaction of PBC and protest: government spending. The graph shows the marginal effect of elections on fiscal policy conditional on popular protest. The dotted lines indicate the 95% significance interval. The effect is significant if both lines of the significance interval are below or above zero.

suggest that demonstrations have a larger conditional effect on election cycles than strikes.[6]

To show the robustness of our results, we report in Table 3 the OLS and system-GMM results. The system-GMM approach combines the set of moment conditions available for the first-differenced equations with the additional moment conditions implied for the levels equation. The main advantage of this method is that it addresses the potential endogeneity of the variables. As long as the model is over-identified, validity of the assumptions underlying both the difference and the system estimators can be tested through Sargan tests of orthogonality between the instruments and the residuals and through tests of second or higher order residual autocorrelation (Arellano and Bover, 1995). The results reported in Table 3 point in the same direction as our previous findings, i.e. governments facing popular protest increase their spending in a pre-election year.

Finally, according to Brender and Drazen (2005), a political budget cycle (PBC) is primarily a phenomenon of developing economies due to limited experience with democratic elections. To examine the impact of the age of democracy, we consider countries that have been democratic more than 20 years on a row since 1945 as old democracies. In Table 4 we re-estimate our model using the broad protest measure for samples of young and established democracies. The results indicate that both the election variable and the interaction term are significantly higher in the young democracies sample, confirming the results by Brender and Drazen (2005). Still, also in established democracies the election and interaction effects are significant.

[6] We also constructed the conditional graphs using the number of demonstrations or general strikes. It turns out that these are similar to Figs. 1 and 2 (results are available upon request).

Table A.1
Data used.

Variable	Description	Source
Real GDP per capita	Real GDP per capita in constant US$ from 2000	World Bank World Development Indicators
Growth rate GDP per capita	Growth rate of GDP per capita	World Bank World Development Indicators
Inflation rate	Change in GDP deflator	World Bank World Development Indicators
Age dependency ratio	The population younger than 15 and older than 65 as a share of the population between 64 and 15	World Bank World Development Indicators
Partisan cycle	Government ideology (see main text)	World Bank Database of Political Institutions
Parliamentary systems	Dummy variable that is one if the election is in a parliamentary system	World Bank Database of Political Institutions
Majoritarian systems	Dummy variable that is one if the election is in a majority electoral system	World Bank Database of Political Institutions
Monetary union	Dummy variable taken the value 1 if a country year is a member of a monetary union, otherwise 0.	Various sources
Access to information	The sum of radios, newspapers, televisions and internet access points per capita.	World Bank World Development Indicators
Protest	The number of anti-governmental demonstrations and general strikes in a country year	Databanks International (2005)

Table A.2
Sample of countries and years.

Country:	Included since:	Country:	Included since:
Albania	1991	Japan	1975
Argentina	1983	Korea (South)	1975
Australia	1976	Lithuania	1992
Austria	1975	Luxembourg	1976
Bangladesh	1977	Malaysia	1978
Belgium	1977	Mali	1979
Bolivia	1985	Mauritius	1981
Brazil	1982	Mexico	1976
Bulgaria	1990	Nepal	1981
Canada	1986	Netherlands	1977
Chile	1975	New Zealand	1977
Colombia	1975	Nicaragua	1984
Costa Rica	1975	Norway	1977
Cyprus	1975	Panama	1989
Czech Republic	1993	Paraguay	1978
Denmark	1977	Peru	1980
Dominican Rep	1978	Philippines	1960
Ecuador	1979	Poland	1991
El Salvador	1977	Portugal	1976
Estonia	1991	Romania	1990
Fiji	1975	Slovakia	1994
Finland	1975	South Africa	1994
France	1977	Spain	1978
Germany	1976	Sri Lanka	1978
Greece	1975	Sweden	1978
Guatemala	1975	Switzerland	1975
Honduras	1982	Trinidad	1976
Hungary	1990	Turkey	1976
Iceland	1975	United Kingdom	1975
India	1977	United States	1976
Ireland	1977	Uruguay	1985
Israel	1977	Zambia	1978
Italy	1975		

4. Conclusions

There is some evidence suggesting that the existence or magnitude of a PBC may be conditional on the popularity of the incumbent government. In this paper we extend this literature by testing the hypothesis that popular protest, proxied by the number of anti-government demonstrations and general strikes, affects the probability that the incumbent uses fiscal policy for re-election purposes. Our evidence lends support to this hypothesis. Our results also suggest that the effect of demonstrations is stronger than the effect of general strikes. We also find that the effect of protest on the manipulation of fiscal policy for re-election purposes is strongest in young democracies.

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Appendix

See Tables A.1 and A.2.

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