Why are Political Budget Cycles Larger in Monetary Unions?

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Abstract

Independent central banks typically counteract a positive fiscal shock by increasing the interest rate which prevents (or at least reduces) electoral manipulation by the fiscal authority. In this paper, we argue that this mechanism is less effective in a monetary union because the single central bank must weigh the policies of all its member countries. We find that the ECB does actually respond weaker to (common) elections in few countries and stronger to elections in many countries, yet this response fails to deter the fiscal authorities from manipulating in any case. In fact, small countries in the EMU manipulate more than their non-EMU counterparts.

Keywords: political cycles; elections; fiscal manipulation; monetary union; fiscal policy; independent central bank.

JEL Classification Codes: D72, E32, E62, H62

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1 Introduction

Since Nordhaus (1975), researchers have studied government attempts to manipulate the electorate to improve her re-election chances. The literature has shown that countries do exhibit Political Budget Cycles (PBCs), but only under certain conditioning factors. PBCs occur less often and are weaker in countries with (i) less uninformed voters (Shi & Svensson, 2006; Veiga et al., 2017; Bohn, 2019; Bohn & Veiga, 2021; also implicitly included in Brender & Drazen, 2005; Gootjes et al., 2021; and Bohn & Sturm, 2021), (ii) a higher level of economic development (de Haan & Klomp, 2013; Schuknecht, 1996), (iii) a more mature democracy (Akhmedov & Zhuravskaya, 2004; Brender & Drazen, 2005), (iv) more checks and balances (Streb et al., 2009), (v) more fiscal transparency (Alt & Lassen, 2006), (vi) more and stronger fiscal rules (Alt & Rose, 2009; Gootjes et al., 2020), (vii) less corruption (Shi & Svensson, 2006), (viii) a parliamentary system (Persson & Tabellini, 2003), (ix) an expected downturn (Bohn & Sturm, 2021), (x) a large expected winning-margin for the incumbent (Aidt et al., 2011; Bohn & Veiga, 2020), (xi) a lower level of public debt (Bohn & Veiga, 2019) and (xii) an independent central bank (Drazen, 2000; Haga, 2015).

This paper focusses on central bank independence as a deterrent to PBCs. More specifically, this paper contributes to the literature by (i) investigating whether the European Central Bank (ECB) adjusts policy based on member country election periods, and (ii) investigating to what extent the ECB is able to limit PBCs in the context of a monetary union. To our knowledge, this paper is the first to conceptually and empirically investigate the role of a central bank in curbing election-year spending in the context of a monetary union.

The conceptual argument is as follows. In an election year, an incumbent government may be tempted to increase government spending to increase her winning probability (either by signalling her type as in Rogoff & Sibert (1988), or by persuading uninformed

voters as in Shi & Svensson (2006)). The central bank interprets such a sudden increase in government spending as a positive demand shock. If the central bank is independent and has a preference for inflation stability, she would increase the interest rate to counteract the government's fiscal stimulus (Drazen, 2000). Given that the government is aware that her manipulations would be rendered less effective and more expensive by the central bank increasing rates, the government reduces its fiscal stimulus. This mechanism is also corroborated by empirical work by Haga (2014) who finds that central bank independence significantly reduces fiscal spending in election years.

However, we argue that this mechanism is weakened in a monetary union. One single individual central bank aims at inflation (and potentially output) stability in the entire monetary union, not just one country. As such, the central bank's response must depend on the size of the countries in an election year relative to the size of the entire monetary union. Consequently, governments in their decision to manipulate will now account for a smaller central bank response than if they were not in a monetary union. That is, the central bank in a monetary union will react weaker to an individual government's manipulation. This is important, because it suggests that fiscal manipulation is, all else equal, more prevalent in monetary unions. Overall we expect that the ECB is independent and thus does react to electoral manipulation by raising rates. However, each country will only account for its own marginal impact on overall inflation and total output while making the decision to manipulate.

To test the mechanism, we use a sample of 96 months for the determination of the Main Refinancing Rate (MRR) of the ECB, and a sample of 260 quarters in 12 countries for the determination of the government primary budget balance. We use both a monetary and a fiscal approach, because an ECB response to electoral pressure does not necessarily imply that governments limit their election-year spending. For instance, it could be the case that the ECB's reaction is too weak, or that governments in their decision to manipulate only account for their proportional impact on the monetary union's economy

and the resulting ECB response.

We find that the ECB reacts to electoral pressure by increasing the MRR. However, its response is weak for small countries, or a small number of elections overall. Thus, small EMU member countries in an election year with no other EMU member countries in an election year de facto operate without the supervision of an independent central bank. Nevertheless, in spite of the ECB's response to elections in large countries (or many elections at the same time), we find no evidence that countries manipulate less when the ECB gets involved.

These results imply that, all else equal, PBCs are stronger in a monetary union, as the role of the independent central bank in curbing PBCs is diminished. To compensate for this loss and limit fiscal manipulation, we recommend to ensure that PBCs are kept in check by using other proven deterrents of PBCs such as fiscal rules, and checks and balances (Streb et al., 2009; Gootjes et al., 2021).

The remaining structure of this paper is as follows. In Section 2, we present the methodology for both the monetary and the fiscal analysis. Section 3 displays the results. In Section 5, we discuss and conclude.

2 Methodology

This section presents our sample and variables, and outlines our empirical models.

2.A The Monetary Mechanism

To test the effect of elections on central bank policy, we created a single measure that accounts for all elections within the EMU. For an individual country i, $ElectoralPressure_{im}$ is equal to 1 in month m if there is an election within 11 months, and also during the

election month. To alleviate endogeneity concerns, we exclude snap elections. That is, we only include predetermined elections. We then generated a measure meant to encompass the total pressure from all N EMU member country elections on ECB policy:

$$EMUElectoralPressure_m = \sum_{n=1}^{N} CapitalShare_n * ElectoralPressure_{nm}. \quad (1)$$

In the analyses, we use three variants of $EMUElectoralPressure$. Firstly, we weigh each member country n's individual impact on electoral pressure by multiplying their electoral pressure with their ECB capital share. Secondly, we give each country an equal weight in ECB decision-making (akin to setting the $CapitalShare$ to $1/N$ for all member countries. Lastly, to investigate a potential unique role for the largest countries, we split the unweighted $EMUElectoralPressure$ into a component for Germany and France, and another component for the remaining member countries.

To test the effect of electoral pressure on ECB policy, we determine the Main Refinancing Rate (MRR) of the ECB in a standard Taylor-rule setup. That is, the MRR is determined by 3 observables: (i) the expected Consensus Economics (a global macroeconomic forecast bureau) inflation rate for the entire EMU one year from now, (ii) the expected Consensus Economics economic growth rate for the entire EMU one year from now, and (iii) EMU-wide electoral pressure:

$$MRR_m = \beta_0 + \beta_1 E[\pi_{m+12}] + \beta_2 E[y_{m+12}] + \beta_3 EMUElectoralPressure_m + \epsilon_m, \quad (2)$$

Arguably, the role of the ECB changed dramatically after the 2008 financial crisis. The ECB moved to unconventional measures to curb the financial and debt crises.[1] Given this change in behavior, we decided to exclude the sample period after 2006. This leaves

[1] We attempted to include the period from 2006 by exploiting variation in shadow interest rates (Black, 1995; Wu & Xia, 2017; Wu & Xia, 2020). Unfortunately, those analyses suffered from a unit root.

us with a monetary analysis that includes 96 months, starting from January 1999 and ending in December, 2006.

Table 1 shows the descriptive statistics of the monetary sample.

Table 1: Descriptive Statistics: Monetary Analysis

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
MRR	96	2.909	0.890	2.000	4.750
Forecasted Inflation	96	1.857	0.253	1.139	2.330
Forecasted Growth	96	2.096	0.568	1.273	3.347
Weighted EMU Electoral Pressure	96	18.42	14.55	0.000	56.18
Unweighted EMU Electoral Pressure	96	2.427	1.304	0.000	5

The second aim of the paper is, conditional on an ECB response to electoral pressure, to see whether individual member countries adjust their fiscal manipulation based on ECB interest rates movements. There may, however, be several confounding factors that affect both government policy and monetary policy simultaneously. To find a plausible causal effect, we use the model in Eq. (2) to predict three different MRRs. The first is the endogenous MRR purely based on expected inflation and economic growth. The second and main MRR of interest is the exogenous MRR based on variance in EMU-wide electoral pressure. Because all included elections are predetermined, they offer plausibly exogenous variance in the ECB's MRR. The third is the residual MRR.

2.B The Fiscal Mechanism

While the previous section outlined how we tested the ECB's response to elections, it still does not say anything about ECB effectiveness in curbing fiscal manipulation at the individual government level. For this purpose, we have collected *quarterly* data on the

primary general[2] government budget balance from Eurostat as a dependent variable:

$$\begin{aligned} Balance_{iq} &= \beta_0 + \beta_1 Balance_{iq-4} + \beta_2 y_{iq-4} + \beta_3 \pi_{iq-4} + \beta_4 Debt_{iq-4} + \beta_5 MRR_q \\ &+ \beta_6 ElectoralPressure_{iq} + \beta_7 ElectoralPressure_{iq} * MRR_q + \psi_q + \tau_t + \mu_i + \epsilon_{iq}, \end{aligned} \tag{3}$$

where y is economic growth, π is the Consumer Price Inflation rate, $Debt$ is public debt as a percentage of GDP, and $ElectoralPressure$ is generated as defined in the previous section (though quarterly as opposed to monthly). As explained in the previous section, we include three different MRRs (one based on the Taylor Rule, one based on electoral pressure, and the residual of Eq. (2)). Conceptually, we expect that $\beta_7 > 0$ if individual governments reduce their fiscal manipulation as a response to an increased MRR. Further, we include seasonal fixed effects, ψ_q, year fixed effects, τ_t, and country fixed effects, μ_i. Countries are only included in the quarters in which they are a member of the EMU.

Table 2 shows the descriptive statistics of the government-level sample. It shows that we have a total of 260 observations, with an average of 21.67 quarters included for all 12 countries. On average, 16.5% of the sample concerns quarters with electoral pressure. On average, economic growth in the EMU was 0.615%, and inflation 0.566%.

Table 2: Descriptive Statistics: Fiscal Analysis

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
Balance	260	0.651	3.83	-13.8	11.4
Electoral Pressure	260	0.165	0.372	0.00	1
Public Debt	260	65.4	29.4	6.80	112
Economic Growth	260	0.615	0.784	-1.50	4.6
Inflation	260	0.566	0.629	-1.38	2.47
ECB Main Refinancing Rate (MRR)	260	2.64	0.786	2	4.75

[2] While the central government is preferable, data is still limited. Arguably, using general government data makes it less likely to find significant results (Potrafke, 2020).

3 Results

Table 3 shows the main result of our monetary analysis. In all models, we find that the effect of forecasted inflation and forecasted growth on the MRR is larger than 1. That is, the result is in line with the Taylor principle: for each percent increase in expected inflation, the nominal interest rate must rise by more than 1% to increase the real interest rate. In column 1, we include the weighted variant of $EMUElectoralPressure$. That is, the larger a country's capital share in the ECB, the larger the weight of their electoral pressure. In this setup, we find that an increase in EMU-wide electoral pressure increases the MRR. This implies that the ECB does react weaker in years with a single election, or in years with elections of a few small countries. In column 2, we use the unweighted variant of $EMUElectoralPressure$. That is, each country's election has an equal weight. Again, we find that the ECB reacts stronger if there are multiple elections in a single year. Given that the explained variance of model 2 is somewhat smaller than model 1's, the weighted variant seems to be better able to explain the variance in the ECB's MRR. Lastly, in column 3, we split $EMUElectoralPressure$ into the unweighted elections of Germany and France, and the rest of the EMU. Indeed, we find that the ECB reacts very strongly to German and French elections, and much weaker (the effect becomes insignificant) to all other elections combined. As such, our results are in line with an independent single central bank only partially trying to deter PBCs.

Table 3: Monetary Analyses

Dependent variable: ECB Main Refinancing Rate$_m$	(1) Weighted	(2) Unweighted	(3) Germany & France
Forecasted Inflation$_{m+12}$	1.055***	1.372***	1.097***
	(5.22)	(6.54)	(5.26)
Forecasted Growth$_{m+12}$	1.150***	1.183***	1.229***
	(12.92)	(12.17)	(13.44)
EMU Electoral Pressure$_m$	0.0231***	0.214***	
	(6.48)	(5.06)	
EMU Electoral Pressure Germany & France$_m$			0.504***
			(5.93)
EMU Electoral Pressure Germany & France Excluded$_m$			0.0940
			(1.87)
Constant	-1.886***	-2.639***	-2.062***
	(-4.53)	(-5.57)	(-4.42)
# Observations	96	96	96
Adjusted R^2	0.703	0.662	0.706

t statistics in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

To test the effect of the ECB's policies on fiscal manipulation, we need a plausibly exogenous variation in the ECB's MRR. For this purpose, we predict the MRR using model 1 in Table 3 and split it up into two parts: (i) a rule-based component, in which the MRR is determined by forecasted inflation and forecasted growth, and (ii) a political discretionary component, in which the MRR is determined by $EMU Electoral Pressure$. In Figure 1 we graph the trajectory of the rule-based and political discretionary MRR, and their combination. To ease comparison, the rule-based MRR is rescaled such that its average is equal to that of the predicted MRR. In terms of interpretation, the red line represents the expected interest rate if the only factors that mattered were the forecasted inflation and growth rates. Any discrepancy between the red and the blue line is caused by electoral pressure on the central bank. One clear example is the sharp drop in the predicted MRR based on the Taylor Rule. In this instance, the predicted MRR dropped

much less due to substantial electoral pressure in the same months.

Figure 1: Main Refinancing Rates over Time

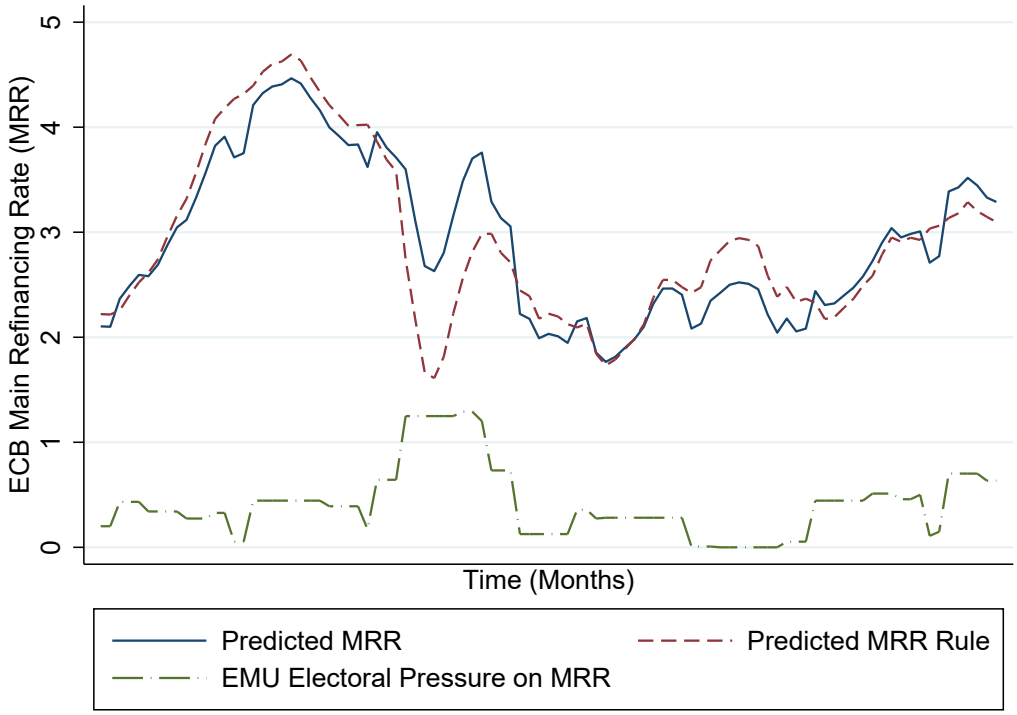


Table 4 shows the main result of our fiscal analysis. Column 1 shows the baseline regression with no role for monetary policy. There we find the common result of a significant and negative effect of elections on fiscal policy. We find that, on average, European Monetary Union member countries have a balance that is 0.532%-points of GDP lower during the year leading up to the election. We find the same result for the MRR based solely on the Taylor Rule throughout all three models in Table 4. In column 2, we include the MRRs based on the weighted variant of $EMUElectoralPressure$, in column 3 those based on the unweighted variant, and in column 4 we use the model with Germany and France separately. In all of these models, we find no significant effect of the ECB's change in the MRR as a response to EMU-wide electoral pressure on fiscal manipulation, as the interaction term is consistently insignificant. Thus, the ECB is ineffective in curbing PBCs overall.

Table 4: Fiscal Analyses: EMU

Dependent variable: $Balance_q$	(1) Base	(2) Weighted	(3) Unweighted	(4) Germany & France
$Balance_{q-4}$	0.732***	0.733***	0.729***	0.736***
	(10.58)	(10.56)	(10.15)	(10.35)
Electoral $Pressure_q$	-0.523***	1.952	1.820	1.601
	(-3.38)	(0.84)	(0.68)	(0.71)
Public $Debt_{q-4}$	-0.0102	-0.0161	-0.0131	-0.0114
	(-0.55)	(-0.74)	(-0.62)	(-0.54)
Economic $Growth_{q-4}$	-0.105	-0.0945	-0.0907	-0.101
	(-0.50)	(-0.46)	(-0.44)	(-0.49)
$Inflation_{q-4}$	-0.594**	-0.572**	-0.607**	-0.538**
	(-2.78)	(-2.31)	(-2.59)	(-2.27)
MRR $Rule_q$		0.352	0.286	0.160
		(0.59)	(0.53)	(0.30)
MRR $Political_q$		-0.311	-0.340	-0.779
		(-0.34)	(-0.39)	(-1.14)
MRR $Residual_q$		-0.541	-0.592	-0.273
		(-1.22)	(-1.16)	(-0.55)
Electoral $Pressure_q$ * MRR $Rule_q$		-0.523	-0.491	-0.496
		(-1.07)	(-1.00)	(-1.07)
Electoral $Pressure_q$ * MRR $Political_q$		-0.531	-0.0254	0.166
		(-0.93)	(-0.03)	(0.28)
Electoral $Pressure_q$ * MRR $Residual_q$		0.260	0.0232	-0.0700
		(0.42)	(0.05)	(-0.12)
Constant	0.677	-0.0620	0.0270	0.513
	(0.45)	(-0.02)	(0.01)	(0.19)
# Observations	260	260	260	260
# Countries	12	12	12	12
Overall R2	0.731	0.727	0.730	0.732
Year FE	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes

t statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

The results in Table 4 signal that it is indeed only the marginal effects of each coun-

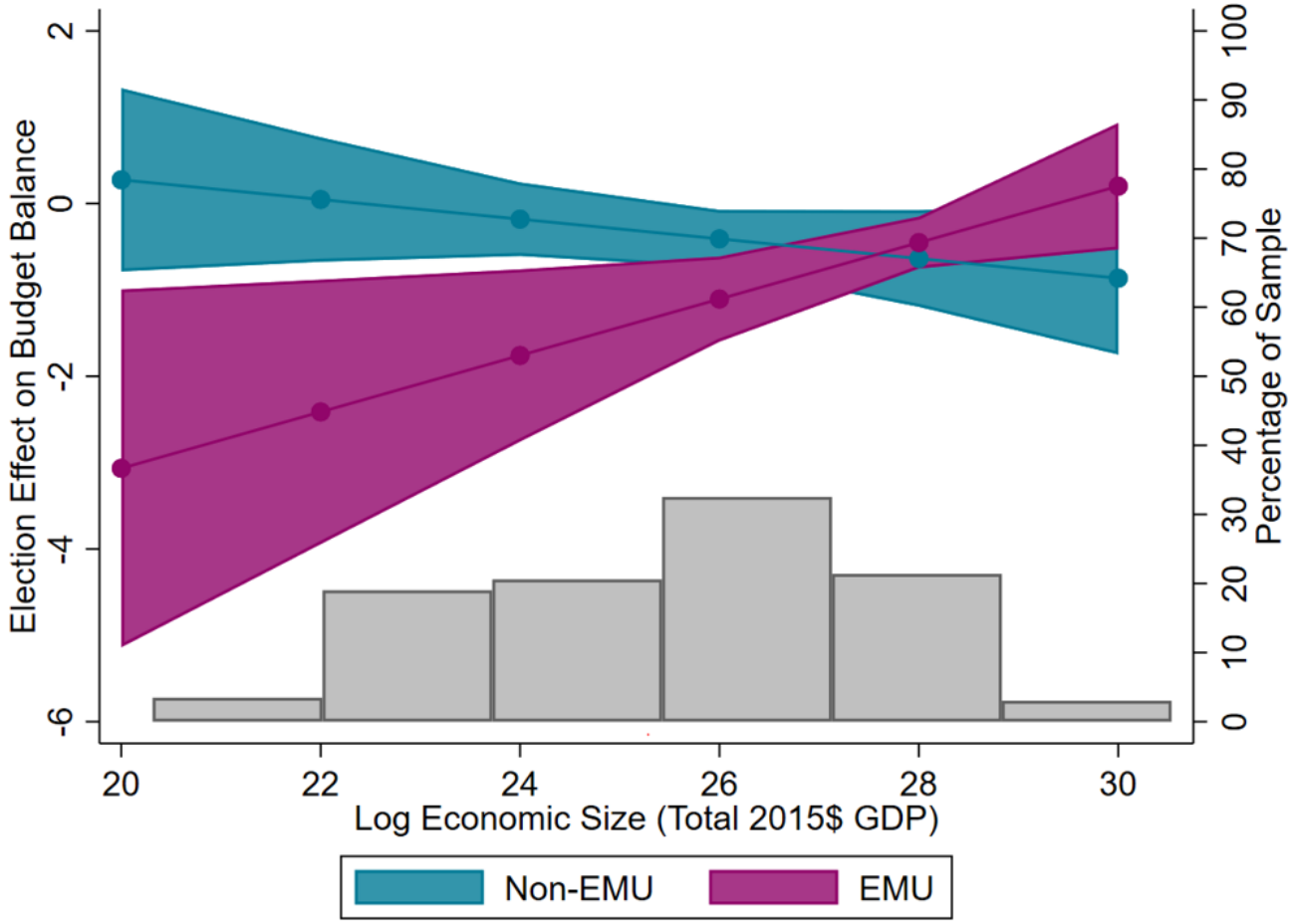
try's fiscal stimulus on total output and inflation that affects each individual country's decision to manipulate. To test this in a more formal setup, we extend our sample by including non-EMU countries in the same timeperiod (though now at the annual level given data availability). The results of this analysis are shown in Table 5. In Column (1) we once again find that the average country does increase the deficit in an election year; this time by 0.288% of GDP. In Column (2), we find a first indication that manipulation is exacerbated in the EMU (by 0.417% of GDP on average), though this effect is insignificant. In Column (3), we see that the economic size of a country is irrelevant for fiscal manipulation on average. However, in Column (4) we confirm our suspicion that it is the marginal effect of fiscal manipulation that counts. That is, small countries manipulate more, but only those that are in the EMU. Large countries do not manipulate more than their non-EMU counterparts. We argue that this is because they continue to have a large marginal effect on EMU-wide inflation and output. Figure 2 shows the results of Table 5 in the form of a marginsplot.

Table 5: Fiscal Analyses: EMU & Non-EMU

Dependent variable: Balance	(1) Base	(2) EMU	(3) Country Size	(4) EMUxCountry Size
$Balance_{t-1}$	0.327***	0.321***	0.317***	0.287***
	(3.23)	(3.21)	(3.05)	(2.79)
$Election_t$	-0.288*	-0.237	2.643	2.554
	(-1.87)	(-1.36)	(1.17)	(1.07)
$Growth_t$	0.151***	0.153***	0.117**	0.0950*
	(2.97)	(2.99)	(2.17)	(1.79)
$Inflation_{t-1}$	0.00490	0.00445	0.0125	0.0177
	(0.27)	(0.24)	(0.70)	(1.02)
Public $Debt_{t-1}$	0.0219**	0.0226**	0.0292**	0.0283**
	(2.14)	(2.18)	(2.20)	(2.13)
EMU_t		-3.062***		240.2**
		(-7.24)		(2.17)
$Election_t * EMU_t$		-0.417		-12.16***
		(-1.61)		(-2.98)
$ln(TotalGDP_t)$			5.647*	5.750*
			(1.80)	(1.90)
$Election_t * ln(TotalGDP_t)$			-0.117	-0.114
			(-1.35)	(-1.22)
$EMU_t * ln(TotalGDP_t)$				-9.313**
				(-2.20)
$Election_t * EMU_t * ln(TotalGDP_t)$				0.441***
				(2.90)
Constant	-1.138*	-0.613	-144.0*	-144.8*
	(-1.93)	(-1.10)	(-1.81)	(-1.88)
# Observations	493	493	493	493
# Countries	70	70	70	70
Year FE	Yes	Yes	Yes	Yes

t statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 2: Fiscal Effect Elections by EMU Membership and Country Size



4 Discussion and Conclusion

Using a sample of 96 months, this paper has found that the European Central Bank responds to elections by increasing the interest rate, or by decreasing the interest rate at a slower pace. The results also show that the ECB does actually respond differently to (common) elections in few and small countries compared to elections in many and large countries. If, in a given year, there is a single election in a small member country, the ECB has no incentive to respond with a large interest rate increase, as the EMU focusses on the entire monetary union. As for elections in large countries, the ECB does increase the interest rate, but not sufficiently to deter PBCs there either.

We then went one step further to test if the ECB's response had a visible impact on individual member country's election-year spending. Using a sample of 260 quarters in 12 EMU member countries, we found no evidence that individual countries manipulate less in response to ECB contractionary policy following electoral pressure.

Overall, these results suggest that, all else equal, budget cycles are larger in countries that are part of a monetary union. A single independent central bank's response to election-year spending is weaker in a monetary union, and member countries do not significantly decrease election-year spending if the ECB gets involved, as they only account for their relative share in ECB decision-making.

In fact, in an analysis based on annual observations with non-EMU countries included, we show that smaller countries in the EMU manipulate more than larger countries and smaller countries that are not in the EMU. This result highlights that being part of a monetary union weakens the effectiveness of central bank independence as a deterrent to fiscal manipulation, as each country only accounts for its own marginal impact on aggregate inflation and output in its decision to manipulate.

To reduce fiscal manipulation in a monetary union, we recommend to double-down on policies that the literature has proven to deter PBCs, such as relatively more stringent fiscal rules and checks and balances (Streb et al., 2009; Gootjes et al., 2021).

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