Fiscal Rule Stretching in Europe During Financial Market Stress and Crises

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Abstract

Elected governments have incentives to stretch accounting rules by classifying loss-making and/or indebted endeavors, such as public industries and pension schemes, as off of the public balance sheet. Doing so improves the appearance of the incumbent government to cost-conscious voters. We expect rule stretching to be especially prevalent during periods of financial market stress and crises given the typically high expense of responding to these events. In addition, types of policy options available to assist troubled financial institutions, such as bad banks and bank nationalizations, are often hard to classify as being inside or outside of the government sector, thus making it more likely that governments will tend to stretch how they are classified. To test these proposition, we examine revisions to government debt and deficit figures made by the European statistical agency–Eurostat. These revisions frequently occur because this politically independent agency re-classifies organizations as being within the government sector, when a national government had originally classified them as outside. We find that debt figures are more likely to be revised upwards for years close to national elections, especially when these are required non-endogenous elections. These effects are strengthened further by financial market stress. Our research

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underlines the importance of having a vigilant and politically independent government statistical agency during periods of financial market stress to ensure reliable government finance statistics.

1 Introduction

This paper examines why governments manipulate their publicly reported data on debt and deficits. This research question affects other literatures in political science in interesting ways. One strand examines the relationship between the reporting of data and the quality of governance (e.g., Hollyer, Rosendorff, and Vreeland 2014). Alt, Lassen, and Wehner (2014) explore the relationship among the transparency of fiscal data, elections and pressure from the European Union. Another strand focuses on the economic vote, and it finds that voters generally do not pay attention to revised figures (see Kayser and Peress 2015).

I should explore the exact paper(s) from Mark to cite on this.

While their focus is on the role of the media in reporting such figures, our paper builds on the insights in Kayser and Peress and on Alt, Lassen, and Wehner's work on elections and transparency to explore the implications of their argument for government action. If voters care most about reported, rather than actual, figures then governments have an incentive to manipulate them before elections. One would expect greater manipulation in ways that make the government look better as elections approach. We can measure these activities by looking at revisions of budget figures, and particularly debt. We also explore three alternative hypotheses. The first centres on the role of international institutions. Governments may report figures in ways to please an international actor, which in turn can damage the standing of the government in the eyes of its voters. The second considers institutional arguments about who does the numbers. In some countries, the government does the reporting, while in others an independent body plays this role. The final alternative focuses on "shocks" to the economy, which in turn affect government statistics. Countries with more shocks may engage in more revisions, with the bias depending upon the nature of the shocks (positive or negative). Of course, these three arguments may be related in theoretically interesting ways. For example, a country experiencing a positive shock may be more likely to call an election in countries where elections are endogenous.

Our dataset is composed of only European Union member states. This is useful for several reasons. They face one international organisation that has two sets of rules on economic matters for its members that are often closely related, namely those rules for Member States inside the eurozone and those outside. The face one accounting regime and they have one body, Eurostat, that enforces it. This means that differences across countries are less likely to be because of different accounting standards. They are all parliamentary

or semi-presidential systems where parliamentary elections are crucial for the formation of governments.

We find that...

2 Political budget cycles and fiscal gimmicks

The revision of government-reported statistics is of interest for several reasons.

The reporting of statistics, or the lack of it, may tell one about the overall governance of a given country. Hollyer, Rosendorff, and Vreeland (2014) argue that the lack of reporting is not random. They collect the availability of data for 125 over a thirty-year period and they use a Bayesian Item Response (IRT) model to create a transparency index. They use this data to predict the quality of governance in autocracies. In other work, they anticipate that this type of transparency affects government accountability as well as collective action (Hollyer, Rosendorff, and Vreeland 2013a, 2013b).

While Hollyer, Rosendorff, and Vreeland (2013a, 2013b) consider how voters react when they get data, there is a separate literature that focuses on how voters react, and in particular whether signals they receive from economic data about the competence of the government in managing economic policy. One debate considers whether voters or prospective or retrospective. On the latter, the assumption is that voters observe outcomes, and they decide whether to support the incumbent government. There is a growing literature on "real-time fiscal policy." Kayser and Peress (2015) find that...

We build on this insight for the first explanation that we examine. Building on Downs (1957) and especially Nordhaus (1975), one would anticipate that there are oppotunistic business cycles where governments manipulate macro-economic tools at their disposal in an effort to make the economy look better before an election. Clark (2003) finds the the tools one uses depends upon the logic of the Mundell-Fleming model: if one assumes that capital is mobile, governments use monetary policy when the exchange rate is flexible and fiscal policy when the exchange rate is fixed. Both Nordhaus and Clark, however, focus on actual economic output from the use of these instruments. We are interested in the perceived figures prior to an election. There is a possible spin-off on the Clark argument. One can expect that extra spending in EU member states with flexible exchange rates has no macro-economic payoffs, while it does have payoffs in countries with fixed exchange rates, which will mostly be those in the eurozone. [1]

There is evidence that countries intentionally distort statistics so that they receive some sort of payoff from an international organisation. For example, some African countries kept their per capita incomes below

[1] Exceptions would be those countries that fix their exchange rate to the euro or that have very narrow bands. Some central and East European Countries, for example, had currency boards that maintained a de facto fix. Denmark has chosen not to join the eurozone, but it maintains a tight fix between its kronor and the euro.

the level of X so that they continued to receive payments for y. In this case, governments keep certain figures below a given cutoff an international organisation sets.

Reported outcomes in terms of economic and fiscal data have a real impact on policy especially in European Union countries. GDP figures affect what type of co-financing governments receive from the European Union for a range of activities, such as environmental protection, guarantees for loans that Small and Medium-sized Enterprises (SMEs) take, and the construction of roads. [2] Under the Stability and Growth Pact, all Member States are expected to have budget balances no worse than 3 percent of GDP and debt burden no greater than 60 percent of GDP. The European Commission decides each year whether a member state has an "excessive deficit," with those earning this distinction under the Commission subject to an "excessive deficit procedure." Member states must propose corrective methods. The subset that are also eurozone members face potential penalties, such as fines. Member states that do not adjust their performance also could lose their access to structural and cohesion funds, which are the largest part of the European Union budget.

One could ask whether countries that have clear biases concerning future performance have similar biases concerning current performance. A literature on forecasting considers why there are biases in forecasting numbers. Some governments seem to be eternal optimists; they report figures that that always appear to be better than turn out to be. Others are chronic pessimists, and they have positive "surprises." Looking at European Union member states, work from the early years of the euro finds that (Hallerberg and Strauch 2002). In more recent work, Hallerberg, et al. (2009) find that European Union member states that fit most closely a "fiscal contracts" approach to budgeting have more conservative forecasts than member states that fit better a "delegation to a strong finance minister" approach.

This discussion leads us to an institutional argument to explore.

De Castro, Pérez and Rodríguez-Vives (2013) Alt, Lassen and Wehner (2014)

one could explore these intra-governmental differences as well if space/time/i The pre-dictions, however, are not so clean. I can imagine that if you have fiscal con-

3 Cost-shifting during financial crises

Gandrud and Hallerberg (2016)

[2] The amounts can be substantial as a percentage of total funding for a given project, up to 85 percent of the cost of the project in regions judged to be "", which are those with a per capita income below 75 percent of the European Union average.

4 Hypotheses

H_1: Debt revisions will be smaller for years further from national government elections.

H_2: Debt revisions will be greater for years when there are endogenous elections.

H_3: The effects predicted by H_1 and H_2 will be stronger when a country also has high credit provision stress.

5 Empirical tests

5.1 Eurostat revisions

To test these hypotheses we gathered all of the revisions that Eurostat made to EU member debt and deficit figures from 2003 through 2013.[3] Eurostat publishes revisions bi-annually–typically once at the end of April and again again in late October. These revisions cover government finance statistics released within the previous four years. As such, the unit of analysis in the following regressions is biannual revision point for each fiscal year. For every year that government statistics are revised, there are up to seven revision points.[4]

We created a variable of *cumulative revisions for debts and deficits* over these four year periods and used them as our dependent variables. For debt revisions, it ranged from -1.1 and 12.7 percent of GDP. For deficit revisions it ranged from -4.5 and 1.1 percent of GDP. It is important to note that all of these revisions were not due to revisions in the denominator, i.e. GDP. Eurostat reports these types of changes separately. As De Castro, Pérez and Rodríguez-Vives (2013) found for similar Eurostat data in shorter pre-financial crisis sample, there is a clear tendency for debt statistics to be revised upward and deficit statistics downward, indicating that policies are more expensive than initially reported.

5.2 Right-hand variables

To test whether governments are more likely to stretch the rules closer to elections, we use Gandrud's (2015) *years to election* variable. The election year is recorded as zero. Not only do we expect that governments are more likely to use rule stretching as elections approach, but that rule stretching should be more prevalent when governments are not able to choose the when the election occurs so as to present themselves in the best fiscal light to voters. As such, we also include a dummy variable that is one for *required elections* (e.g.

[3] PDF files with the figures were downloaded from http://ec.europa.eu/eurostat/news/news-releases.
[4] The first revisions occur October of the initial reporting year.

non-endogenous elections) and zero for all other years. The variable is from Brender and Drazen (2008). It was updated and corrected by Hallerberg and Wehner. We expect that that revisions will be greater for years when there is a non-endogenous election.

To examine how responding to financial market stress may exacerbate governments' fiscal accounting rule stretching behavior, we included Gandrud and Hallerberg's (2015) continuous "FinStress" measure of real-time perceptions of financial market stress. This measure is created by analyzing monthly content from Economist Intelligence Unit texts on banking and financial markets using a statistical method called kernel principal component analysis. Unlike previous post-hoc dichotomous measures of financial crisis (e.g. measures compiled by Laeven and Valencia, 2012; Reinhart and Rogoff, 2010), the authors argue this measure captures what we are most interested in when trying to understand policy choices: what stress policy-makers perceived and so responded to at the time. It also does not rely on ad hoc methods of determining when a crisis ended, but instead charts its perceived intensity over time. To make this measure comparable with our other variables, we found yearly averages. FinStress is able to vary between zero and one, with higher values indicating more perceived financial market stress. In the sample it varies between 0.12 and 0.76.

Because hypothesize that the effect of election timing on rule-stretching will increase at higher levels of financial market stress, we will focus on interacting FinStress with the election timing and non-endogenous elections variables.

As Eurostat has more time to examine member state government policies, e.g. how separate they are in practice from the government sector, we would expect on average that the cumulative revisions will grow over the course of the four year period during which they are revised. So we also include a variable counting the years since the original year that the revised figure is from on the right-hand side.

5.3 Results

Tables 1 and 2 showing results from linear regressions with cumulative debt and deficit revisions, respectively, as the dependent variable. All models include country fixed effects.

We can see in Table 1 that election timing is estimated to have a negative effect on debt revisions in models where it is not interacted with FinStress. As the election timing variable is larger, i.e. the further away the next election, government debt figures tend to be revised less. Or stated another way, debt revisions are larger for years closer to elections. This finding is similar in direction and magnitude to what De Castro, Pérez and Rodríguez-Vives (2013) found with similar data over a shorter time-span. A new finding can be seen in model 2 of Table 1. Debt revisions are larger in years where a government was required to hold

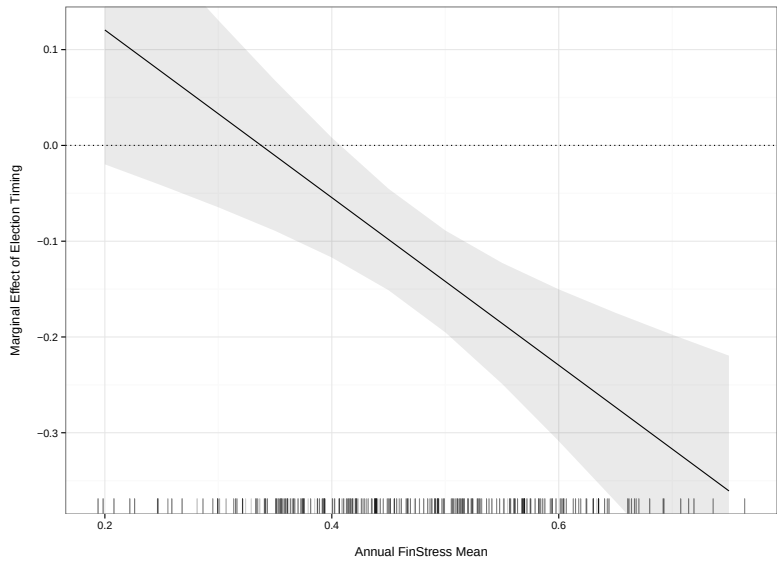
Table 1: Linear Regression Estimation of Debt Revisions

	Dependent variable:					
	Cumulative Debt Revisions					
	(1)	(2)	(3)	(4)	(5)	(6)
Yrs. Since Original	0.218^{***}	0.176^{***}	0.219^{***}	0.172^{***}	0.217^{***}	0.173^{***}
	(0.040)	(0.038)	(0.040)	(0.038)	(0.040)	(0.038)
Yrs. to Election	-0.119^{***}		-0.119^{***}		0.296^{**}	
	(0.032)		(0.032)		(0.141)	
Endog. Election		0.749^{***}		0.723^{***}		-3.686^{***}
		(0.182)		(0.182)		(0.777)
Non-Endog. Election		0.094		0.069		-0.395
		(0.099)		(0.099)		(0.403)
FinStress			0.081	-0.720^{*}	1.411^{**}	-1.398^{***}
			(0.379)	(0.377)	(0.581)	(0.420)
Yrs. to Elect.*FinStress					-0.875^{***}	
					(0.290)	
Endog. Elect.*FinStress						9.389^{***}
						(1.609)
Non-Endog. Elect.*FinStress						1.034
						(0.899)
Constant	1.081^{***}	0.401^{*}	1.038^{***}	0.783^{***}	0.485	1.196^{***}
	(0.231)	(0.215)	(0.305)	(0.293)	(0.355)	(0.306)
Country FE?	Yes	Yes	Yes			
Observations	1,430	1,263	1,430	1,263	1,430	1,263
R^2	0.249	0.287	0.249	0.289	0.254	0.309
Adjusted R^2	0.233	0.270	0.233	0.272	0.237	0.291
Note:						*p<0.1; **p<0.05; ***p<0.01

Table 2: Linear Regression Estimation of Deficit Revisions

	Dependent variable:					
	Cumulative Deficit Revisions					
	(1)	(2)	(3)	(4)	(5)	(6)
Yrs. Since Original	-0.058^{***}	-0.042^{***}	-0.057^{***}	-0.040^{***}	-0.057^{***}	-0.041^{***}
	(0.017)	(0.015)	(0.017)	(0.015)	(0.017)	(0.015)
Yrs. to Election	0.035^{**}		0.035^{**}		0.042	
	(0.013)		(0.014)		(0.061)	
Endog. Election		-0.041		-0.031		0.110
		(0.071)		(0.071)		(0.307)
Non-Endog. Election		0.009		0.019		-0.318^{**}
		(0.039)		(0.039)		(0.160)
FinStress			0.020	0.287^{*}	0.043	0.156
			(0.162)	(0.148)	(0.249)	(0.166)
Yrs. to Elect.*FinStress					-0.015	
					(0.125)	
Endog. Elect.*FinStress						-0.299
						(0.637)
Non-Endog. Elect.*FinStress						0.776^{**}
						(0.356)
Constant	-0.246^{**}	-0.236^{***}	-0.256^{**}	-0.389^{***}	-0.266^{*}	-0.330^{***}
	(0.099)	(0.084)	(0.130)	(0.115)	(0.152)	(0.121)
Country FE?	Yes	Yes	Yes			
Observations	1,430	1,263	1,430	1,263	1,430	1,263
R^2	0.217	0.289	0.217	0.291	0.217	0.294
Adjusted R^2	0.201	0.273	0.200	0.274	0.200	0.276
Note:						*p<0.1; **p<0.05; ***p<0.01

Figure 1: Marginal Effect of Election Timing (years to election) at Various Levels of Financial Market Stress on Debt Revisions



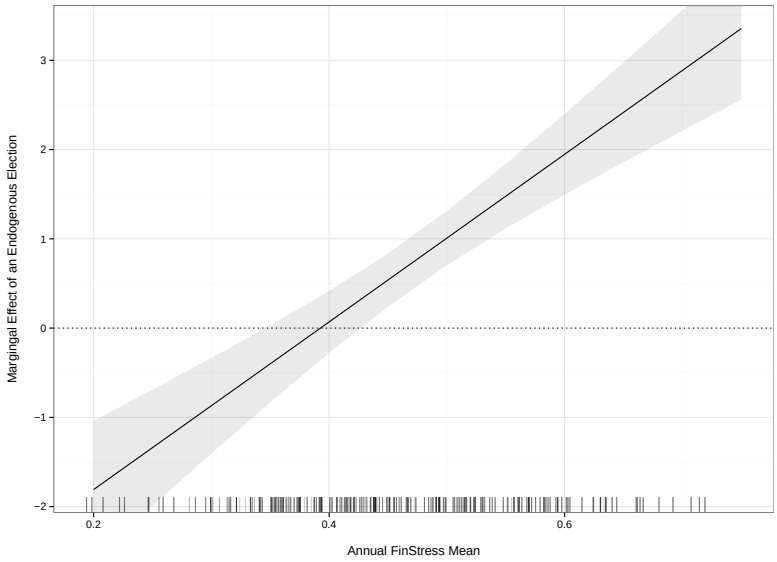
Shaded area represents 95% confidence interval.

an election compared to other years. We can see that, in line with our third hypothesis, these two effects increase for years that also have higher credit market stress as measured by the FinStress variable.

Figures 1 and 2 show marginal effects of the election variables at various levels of credit market stress. At high levels of FinStress, e.g. above 0.55, the marginal effect of being one more year removed from an election on debt revisions is

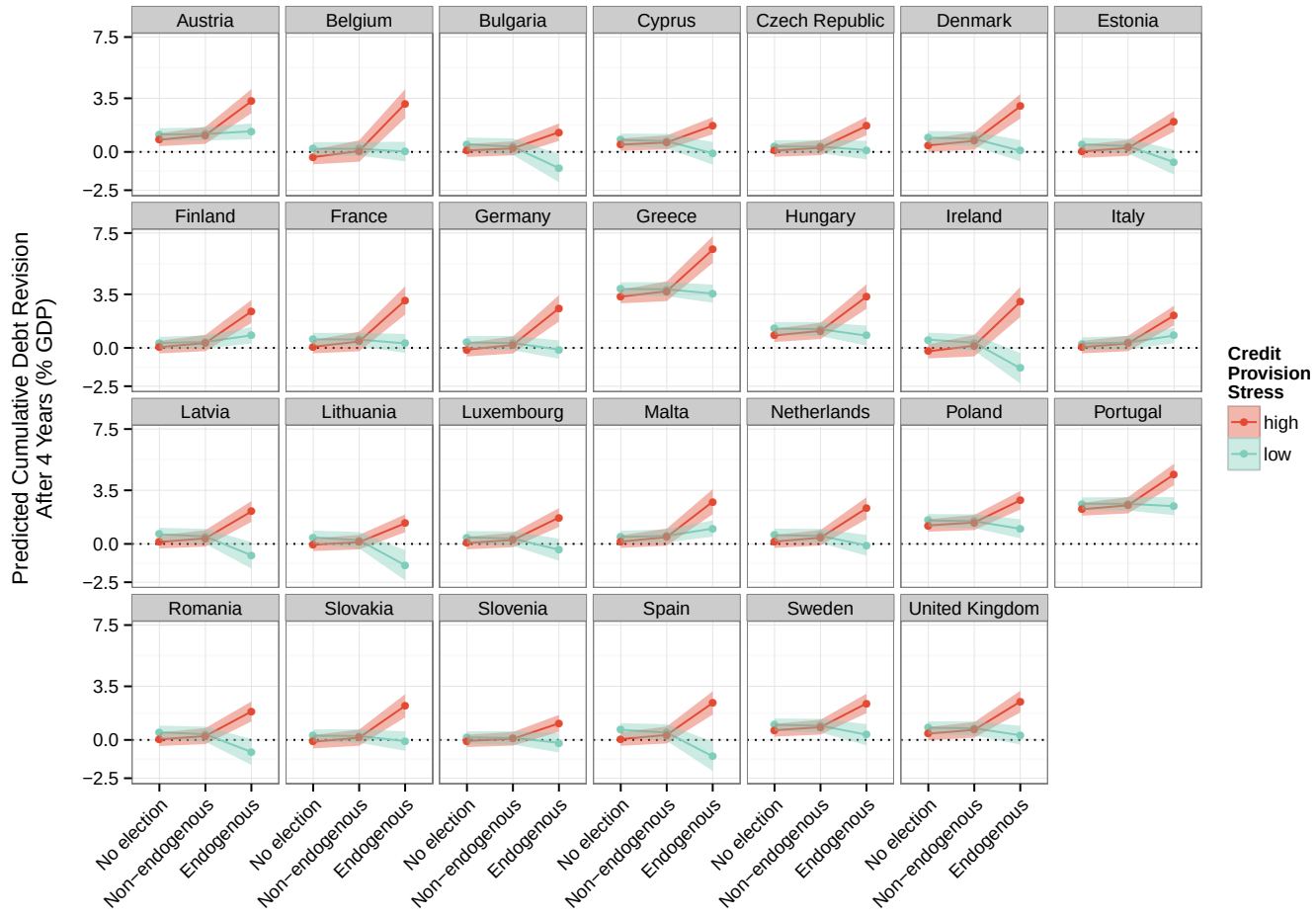
6 Conclusion

Figure 2: Marginal Effect of an Endogenous Election at Various Levels of Financial Market Stress on Debt Revisions



Shaded area represents 95% confidence interval.

Figure 3: Predicted Debt Revisions in Four Years After Publication for Years with Different Election Types/Non-election Years



High and Low stress values refer to country minimum and maximum FinStress scores in the sample.

Croatia excluded due to a small number of revision years.

Shaded areas show 95% confidence intervals.

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