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## Political Responsibility for Different Crises \*

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### Abstract

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# 1 Introduction

Large-scale crises are associated not only with economic downturn, but also with political turnover. In this paper, we study the impact of different crises, such as sovereign defaults, banking crises, economic recessions on the political turnover of different politicians, such as heads of the state, prime ministers, central bank governors, etc. In particular, we assess the political costs, which are associated with the crisis.

We first conduct the exercise based on annual frequency. Then, in the smaller sample at quarterly frequency, we redo the exercise and perform Granger causality tests to identify a plausible causal linkage between the economic crisis and political turnover. Many recent papers rely on timing for the identification in macroeconomics (Ramey, 2011; Yeyati and Panizza, 2011).

Our first key finding is that banking crises are followed by the downfall of the government at the level of chief executive as well as the governor of the central bank. The impact is stronger in democratic regimes, but also is present in non-democratic ones. While controlling for the GDP growth only partially reduces the impact of the crisis on banking crisis on states head turnovers, the controlling for exchange rate partially mitigate the impact of the banking crisis on the CB governors turnovers.

Our second main insight is that after controlling for the election dates external sovereign defaults have no effect on political turnover, which we interpret as external sovereign default having a small impact on the population. Hence, politicians are only punished through regular election in democratic regimes. On the contrary, banking crises and domestic sovereign defaults have large impact on the country population. Therefore, politicians are punished through regular (e.g. elections) and irregular turnovers (e.g. coup d'état) in both democratic and non-democratic regimes.

There is large literature on career concerns of politicians. Majority of papers focus either on the regular changes through elections in democratic regimes (Treisman, 2015) or study a particular non-democratic country, like China (Li and Zhou, 2005). However, through the history crises have often happened in non-democratic countries. Furthermore, even in democratic countries many changes of government have been irregular. In this paper, we provide evidence on effect of a crisis on the tenure of top officials for both democratic and non-democratic regimes.

There is also a large literature on causes and consequences of macroeconomic crises. Reinhart and Rogoff (2009) provide a visual history of financial crises, including sovereign default, banking, currency, stock market crashes and inflation, from 1800 to the present for sixty-six countries. They show that banking crises and domestic defaults are typically associated with a very severe recession. Laeven and Valencia (2013) contrast output losses across different crises and finds that sovereign debt crises tend to be more costly than banking crises, and these in turn tend to be more costly than currency crises. Jorda et al. (2016) further shows that credit growth is a powerful predictor of financial crises and that financial crises were associated in the past with substantial “deleveraging”. We show that banking crisis leads to the general government downfall, including head of the state and head of the central bank. This results are not driven by the recession. After controlling for the election dates, we observe no direct impact of sovereign default on the change of politician.

Fewer papers studies the political component of economic downturns. While the good economic performance typically improves incumbents’ reelection prospects (Brender and Drazen, 2008), the economic crises reduce these prospects: the far-right parties increase their vote share by 30% after a financial crisis Funke et al. (2016); sovereign defaults are associated with the increased probability of downfall of incumbent governments in democratic countries Chwioroth et al. (2014), significant increases in the probability of finance minister turnover (Borensztein and Panizza, 2009), but not the turnover of the head of states (Livshits et al., 2014). We confirm the latter and show that sovereign defaults has a negligible impact on the turnover of the central bank governors. The evidence regarding chief executive turnover is mixed. Finally, Herrera et al. (2014) show that political booms, measured by the rise in governments’ popularity, predict financial crises.

## 2 Methodology

We estimate the probability of politicians’ turnover in country  $i$  at the time  $t$ , conditional on the set of controls, including economic variables (GDP growth, inflation rate, exchange rate, etc.) and political variables (polity score, election dates, etc.). Our goal is to estimate the impact of the crisis on the probability of turnover. Given that both the political turnover and the crisis are not very frequent events, we start with annual data to have as

broad coverage as possible. Then we repeat our exercise at quarterly and monthly frequencies on a smaller sub-sample of the data. Higher frequency provides us with possibility to use the timing of the events to see whether the crisis precedes the political turnover or vice versa. Using the Granger causality test, we formally assess it. The reason why we use both quarterly and monthly frequencies is the availability of some important control variables such as GDP, which is collected only at quarterly frequency.

We estimate the following fixed effect panel regression separately for each politician type (head of state, central bank governor, finance minister):

$$Pr(PT_{i,t}^j = 1) = \alpha_i^j + \beta^j C_{i,t}^k + \beta^j X_{i,t-1}, \quad (1)$$

where  $Pr$  is a probability of political turnover of politician type  $j$  in country  $i$  in period  $t$  and  $C_{i,t}^k$  is the crisis of type  $k$  in country  $i$  in period  $t$ .

### 3 Data

In order to identify the effect of the default announcement on leaders tenure, we combine several datasets. Further, we provide a description of the data based on a frequency and types of data (economic or political).

The main variables of interest, political tenures, come from two datasets. First, Archigos dataset (Goemans et al., 2009) documents the tenure of the head of states at daily frequency for 180 countries for the period 1875-2015. Second, we rely on the Dreher et al. (2008), which provides us with data at monthly frequency on tenure of central bankers for 159 countries starting in 1970. For other political variables we employ data about election dates provided in another Archigos data set “Elections 1919-2006” Goemans et al. (2009) to identify the term of the leader.

*At annual frequency*, we employ the Reinhart and Rogoff dataset (Reinhart and Rogoff, 2009), which contains 297 banking, 306 external defaults, 83 domestic defaults, 635 currency crashes, 376 stock market crashes and 442 episodes of hyperinflation in the last 200 years. They also provide exchange rate, inflation and debt to GDP data at annual frequency. Nominal GDP series in local currency are either obtained from Jorda et al. (2016)

or from Dincecco and Prado (2013). GDP (in PPP real international dollars) and population data are obtained from Maddison (2003). On the political side, the characteristics of political system, including polity score are taken from Cheibub et al. (2010).

*At higher frequency*, default and renegotiation dates at daily frequency are taken from Cruces and Trebesch (2013), while daily banking crises dates are from Laeven and Valencia (2013). We supplement this data with Pesaran et al. (2009), which provides at quarterly frequency real GDP, the rate of inflation, the nominal equity price index, the exchange rate of a country expressed in US dollars, short-term interest rate and long-term interest rate. These datasets are compatible in terms of the time frame. the observations starts in 1970. Overall at quarterly frequency after 1970, our data sample consists of 196 countries, 104 of which have experienced 186 default episodes and 63 banking crises over the last five decades. During this period of time the countries of interest have changed 1229 heads of central banks and 1236 state leaders.

## 4 Results

Due to the data restrictions, mentioned in the previous section, we perform our analysis, at two different frequencies. First, we perform the analysis on the large set of countries at annual frequency and control for the main macroeconomic characteristics as well as the characteristics of political systems. Then, we switch to quarterly frequency to explore the timing of the events to partially address the endogeneity issue. We further perform the Granger causality test.

### 4.1 Annual data

Our original hypothesis is that the crisis reduces tenure, so consequently politicians have an incentive to delay default as long as possible. There are two ways how the crisis can affect tenure: through regular changes, elections, and irregular changes, for example coup d'état. The former ones are expected by politicians. Therefore, we should expect the distribution of crises to be concentrated on the post-election dates. The crisis happens due to bad policies (too much borrowing) or bad luck (large output drops). We exploit the richness of the dataset in the dimensions of political positions, its responsibilities and the political turnover. We start with the head of states, who are in charge of the whole

economy, which we measure by the GDP growth. Then, we look at CB governors, who are in charge of the monetary policy, price stability, stability of the financial sector and banking supervision.

As expected, any election has a strong impact on the probability of the turnover of the head of state. Table 1 presents the estimated linear probability and logistic regression models for the head of state turnover. As Table 1 shows default on external debt has no significant impact on the head of state tenure while default on domestic debt increases the yearly chances of being displaced by 34 % which coincides with the idea that voters care more about their own savings than about the general situation with state's budget. When the crises dummies are lagged, coefficients for both external and domestic defaults appear to be no longer statistically significant. Instead of them, in both linear probability and logit models lag of the banking crises dummy become significant. This situation could be due to the fact that one of the common consequences of the domestic default is an ongoing distortion of savings which often leads to deposit runoffs.

Table 2 presents results but this time the left hand side variable is CB governor's turnover. Similarly to the case with the head of state turnover, only default on domestic debt has a significant effect on the CB's governor tenure and not the one on external debt. The main differences with Table 1 are that elections do not statistically predict turnover of the CB head while the currency crises does. The former result is expected since in most countries there is no direct election of central bank governor and central banks often have some degree of independence from a government. The latter result that the currency crises have a significant impact on CB governor's tenure implies that since currency control is one of the roles of CB, its head is held accountable for currency crises and not the head of state.

## 4.2 Quarterly data

Unfortunately, Cruces and Trebesch (2013) provides only data on the external defaults. Therefore, those are the only type of defaults that we can study at the quarterly frequency. Tables 3 and 4 present results on the effects of different types of crises on the head of state and central bank governor's tenures respectively. As it is in the case with annual data, external default has no significant effect on neither head of the state's nor on CB governor's tenure. While in the current time period banking crises has no effect on the head of state turnover, its effect becomes significant if we use lag of banking crises as a

Table 1: Head of state changes

	(1)	(2)	(3)	(4)
	Linear	Linear, lagged	Logit	Logit, lagged
External	0.0489 (0.0544)		0.236 (0.333)	
Domestic	0.340*** (0.0822)		1.569*** (0.444)	
Banking	0.0652 (0.0341)		0.382 (0.201)	
Pres. election	0.674*** (0.0982)	0.649*** (0.111)	0 (.)	0 (.)
Parl. election	0.757*** (0.0605)	0.778*** (0.0612)	0 (.)	0 (.)
Currency	0.0329 (0.0243)		0.204 (0.150)	
Stock Market	-0.0199 (0.0232)		-0.126 (0.152)	
L.External		0.0193 (0.0553)		0.185 (0.374)
L.Domestic		0.0868 (0.0854)		0.469 (0.504)
L.Banking		0.0995** (0.0359)		0.571** (0.219)
L.Currency		-0.00299 (0.0254)		-0.0136 (0.170)
L.hyperinflation		0.00997 (0.0392)		0.0705 (0.259)
L.Stock Market		0.0493 (0.0256)		0.360* (0.165)
Effects	FE	FE		
N	3513	3448	3453	3356
R2	0.0657	0.128		

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ 

Note: The first two columns are linear probability models with country-year fixed effects. The second two columns are logistic models with year fixed effects. Lagged stands for the lag of crisis dummies.



Table 2: Central bank governor changes

	(1)	(2)	(3)	(4)
	Linear	Linear, lagged	Logit	Logit, lagged
External	-0.0390 (0.0933)		0.503 (0.433)	
Domestic	1.071*** (0.147)		1.419* (0.676)	
Banking	0.0600 (0.0563)		0.440 (0.276)	
Pres. election	-0.0413 (0.145)	-0.0483 (0.162)	-0.153 (0.806)	-0.124 (0.892)
Parl. election	0.107 (0.0903)	0.122 (0.0925)	0.430 (0.456)	0.516 (0.474)
Currency	0.124** (0.0421)		0.496* (0.207)	
Stock Market	-0.0272 (0.0364)		-0.113 (0.197)	
L.External		0.0808 (0.0950)		0.384 (0.459)
L.Domestic		0.671*** (0.157)		1.426 (0.729)
L.Banking		0.221*** (0.0591)		0.798** (0.281)
L.Currency		-0.00131 (0.0433)		0.173 (0.227)
L.hyperinflation		0.0428 (0.0666)		0.494 (0.328)
L.Stock Market		0.0327 (0.0406)		0.101 (0.217)
Effects	FE	FE		
N	1637	1618	1637	1618
R2	0.0429	0.0771		

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ 

Note: The first two columns are linear probability models with country-year fixed effects. The second two columns are logistic models with year fixed effects. Lagged stands for the lag of crisis dummies.

Table 3: Head of state changes

	(1)	(2)	(3)	(4)
Banking	0.0117 (0.75)		0.620 (0.85)	
External	0.00971 (1.05)		0.473 (0.93)	
Pres. election	0.783*** (46.12)		7.189*** (11.70)	7.188*** (11.70)
Parl. election	0.905*** (66.77)		0 (.)	0 (.)
L.Banking		0.0961*** (5.91)		2.010*** (4.85)
L.External		-0.00396 (-0.41)		-0.238 (-0.33)
L.Pres. election		-0.00314 (-0.17)		
L.Parl. election		0.0143 (1.02)		
Effects	FE	FE		
N	73124	72953	73044	72908
R2	0.0941	0.00175		

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Note: The first two columns are linear probability models with country-year fixed effects. The second two columns are logistic models with year fixed effects. Lagged stands for the lag of crisis dummies.

predictor. Even more, our analyses at quarterly frequency estimates much higher effect of a lagged banking crises on the change of head of the state than at annual frequency  $1 - (1 - 0.0961)^4 = 33\%$  vs 9.95%. As Table 4 shows, results for the quarterly and annual frequency data are qualitatively similar for the head of CB turnover. The only statistically significant predictor of the CB governor's downfall is the banking crises.

Table 5 presents the results of the Granger causality test for the heads of states. As one can see, the banking crisis quarter or two quarters before causes the step down of the state head and not the other way around. Default and the change of state head have no apparent relationship, which confirms our previous regression analysis both at annual and quarterly frequency.

The similar is true for the central bank governors (see Table 6). However, the impact of the banking crisis is stronger. Surprisingly, we find that the central bank governors are

Table 4: Central bank governor changes

	(1)	(2)	(3)	(4)
Banking	0.102*		0.506	
	(0.0496)		(0.309)	
External	0.0117		0.163	
	(0.0325)		(0.204)	
Pres. election	0.0206		0.167	0.169
	(0.0606)		(0.403)	(0.403)
Parl. election	0.0346		0.236	0.236
	(0.0426)		(0.285)	(0.285)
L.Banking		0.122*		0.601*
		(0.0497)		(0.304)
L.External		0.0329		0.286
		(0.0325)		(0.200)
L.Pres. election		0.0857		
		(0.0606)		
L.Parl. election		0.100*		
		(0.0426)		
Effects	FE	FE		
N	59118	59114	59118	59019
R2	0.0136	0.0138		

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Note: The first two columns are linear probability models with country-year fixed effects. The second two columns are logistic models with year fixed effects. Lagged stands for the lag of crisis dummies.

Table 5: Granger Causality test

Hypothesis	p-value
Banking crisis causes the change of head of state	Yes(.0867)
Default causes the change of head of state	No(.61)
The change of head of state causes Banking	No(.458)
The change of head of state causes default	No(.812)

Note: 2 lags were used in the Granger-causality tests. The first column states that the hypothesis. The second column reports the p-value and whether we accept or reject the hypothesis

Table 6: Granger Causality test

Hypothesis	p-value
Banking crisis causes the change of CB governors	Yes(.018)
Default causes the change of CB governors	No(.76)
The change of CB governor causes banking crisis	No(.169)
The change of CB governor causes default	Yes(0.023)

*Note:* 2 lags were used in the Granger-causality tests. The first column states that the hypothesis. The second column reports the p-value and whether we accept or reject the hypothesis

often replaced prior to default and not after. The replacement of central bank governors a quarter prior to default actually reduces the probability of default.

Overall, we find no evidence of the impact of (external) sovereign default on political turnover of the head of state or central bank governors. In other words, contrary to Yeyati and Panizza (2011)’s suggestion, it seems that there is no immediate political cost at the top associated with (external) sovereign default. One possible explanation is that population does not punish a politician for default because by defaulting the politician makes the optimal choice. This story is consistent with the strategic sovereign default story (Eaton and Gersovitz, 1981; Arellano, 2008). Alternatively, the politician has no choice, but to default, which is in line with the idea of excusable default (Grossman and Huyck, 1988; Collard et al., 2015). Hence, the politician should not be punished.

## 5 Conclusion

In this paper, we analyze the impact of banking crises and external sovereign default on political turnover at the level of the head of the state and central bank governors. We find that banking crises lead to the downfall of the government including both the head of state and the central bank governor. On the contrary, external default has no impact on central bank governor, but affects the re-election prospects of the heads of states.

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