

# **Electoral Cycles in Macroprudential Regulation**

## **Online Appendix**

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## A. Additional Tables and Figures

Table A1—: Descriptive Statistics

	Observations	Mean	Median	Std. Dev.
<i>Macroprudential policy indices</i>				
Sector-specific capital buffer index	3,248	0.011	0.000	0.185
Targeted policy index	3,130	0.028	0.000	0.314
<i>Components of the sector-specific capital buffer index</i>				
Real estate capital buffer	3,248	0.006	0.000	0.120
Consumer credit capital buffer	3,248	0.002	0.000	0.055
Other sectoral capital buffer	3,248	0.003	0.000	0.094
<i>Components of the targeted policy index</i>				
Loan-to-value (LTV) ratio	2,886	0.008	0.000	0.142
Debt service-to-income (DSTI) limit	2,886	0.006	0.000	0.105
Housing-related taxes	2,886	-0.003	0.000	0.192
Concentration limit	2,643	0.011	0.000	0.152
Loan provisioning rules	2,886	0.012	0.000	0.144
Risk weights	2,886	0.007	0.000	0.127
<i>Broader macroprudential tools</i>				
General capital requirements	3,024	0.021	0.000	0.144
Interbank exposure	1,035	0.021	0.000	0.151
Reserve requirements (LC)	3,248	-0.013	0.000	0.331
Reserve requirements (FC)	3,248	0.010	0.000	0.258
<i>Financial sector variables</i>				
Bank capitalization (%)	2,988	8.294	7.800	3.280
Lending concentration	3,104	65.218	64.470	20.571
Cost to income ratio (%)	3,176	59.007	58.060	15.436
Non-performing loans (%)	2,940	5.509	3.243	6.014
Return on assets	3,140	1.131	1.163	1.530
Z-score	3,180	12.474	11.536	7.554
Foreign bank share (%)	3,136	33.703	32.000	24.424
<i>Macroeconomic variables</i>				
Government exp./GDP	2,944	0.175	0.184	0.046
Money market rate	3,149	5.541	4.165	6.719
Growth in CB reserves	3,008	0.147	0.102	0.286
Real credit growth	2,887	0.085	0.062	0.163
Real GDP growth	2,932	0.036	0.033	0.052
$\Delta$ Current account/GDP	2,954	0.046	0.000	4.047
Trade/GDP	2,984	0.882	0.734	0.530
Investment/GDP	2,888	0.229	0.224	0.044
Consumption/GDP	2,888	0.578	0.573	0.083
Inflation rate	3,076	0.045	0.030	0.060
Log(FX)	3,124	2.102	1.323	2.491

Table A2—: Descriptive Statistics of Additional Variables

	Observations	Mean	Median	Std. Dev.
<i>Election timing</i>				
Election quarter (t-1)	3,248	0.063	0.000	0.243
Election quarter (regular) (t-1)	3,248	0.046	0.000	0.211
Election quarter (irregular) (t-1)	3,248	0.017	0.000	0.128
Election quarter (close) (t-1)	2,634	0.032	0.000	0.176
Election quarter (not close) (t-1)	2,634	0.031	0.000	0.174
GDP forecast	3,162	3.363	3.400	1.907
Real house price growth	2,303	2.235	1.795	9.503
Banking sector ROE	3,140	13.571	14.941	12.969
Real credit growth	2,864	0.090	0.065	0.215
<i>Political characteristics</i>				
Voice and accountability	3,016	0.757	0.942	0.666
State interventionism	3,136	7.583	7.566	1.315
CB governor connections at MoF	3,234	0.409	0.000	0.492
Pol. ind. bank regulators	3,248	1.672	1.000	1.344
Unified opposition	3,168	0.521	0.492	0.233
<i>Political connections and lobbying</i>				
Campaign finance limits	3,248	0.131	0.140	0.045
Connected firms	2,352	0.083	0.016	0.159
Connected banks	3,192	0.632	0.000	1.020
Connected CB governor	3,234	0.378	0.000	0.485
<i>Uncertainty</i>				
Log(EPU)	2,144	4.701	4.684	0.423
Log(WUI)	2,307	-1.690	-1.659	0.683
Stock price volatility	2,956	23.074	20.828	12.331
Log(VIX)	3,248	3.000	3.000	0.347

Table A3—: Variable Description and Sources

Description	Source
<i>Macprudential policy indices</i>	
Sector-specific capital buffer index	Index of changes in sector-specific capital buffers from Cerutti et al. (2017).
Targeted policy index	Combined index of changes in loan-to-value ratio caps, debt-service-to-income limits, housing-related taxes, concentration limits, loan provisioning rules, and risk weights, using data from Cerutti et al. (2017), Kuttner and Shim (2016), and Budnik and Kleibl (2018).
<i>Components of sector-specific capital buffer index</i>	
Real estate capital buffer	Index of changes in capital buffers targeting real estate lending from Cerutti et al. (2017)
Consumer credit capital buffer	Index of changes in capital buffers targeting consumer credit from Cerutti et al. (2017).
Other sector-specific capital buffer	Index of changes in capital buffers targeting other sectors from Cerutti et al. (2017).
<i>Components of targeted policy index</i>	
Loan-to-value ratio	Index of changes in caps to loan-to-value ratios from Kuttner and Shim (2016) and Budnik and Kleibl (2018).
Debt-service-to-income cap	Index of changes in caps to loan-to-value ratios from Kuttner and Shim (2016) and Budnik and Kleibl (2018).
Housing-related taxes	Index of changes in housing-related taxes from Kuttner and Shim (2016) and Budnik and Kleibl (2018).
Concentration limit	Index of changes in limits on specific large exposures from Cerutti et al. (2017) and Budnik and Kleibl (2018).
Loan provisioning rules	Index of changes in loan provisioning rules targeting specific sectors from Kuttner and Shim (2016) and Budnik and Kleibl (2018).
Risk weights	Index of changes in risk weights targeting specific sectors from Kuttner and Shim (2016) and Budnik and Kleibl (2018).
<i>Broader macroprudential tools</i>	
General capital requirements	Index of changes in overall capital requirements from Cerutti et al. (2017).
Interbank exposure	Index of changes in limits to interbank exposures from Cerutti et al. (2017).
Reserve requirements (LC)	The index of changes in reserve requirements on local currency exposures from Cerutti et al. (2017).
Reserve requirements (FC)	Index of changes in reserve requirements on foreign currency exposures from Cerutti et al. (2017).
<i>Financial Sector</i>	
Bank capitalization (%)	Ratio of bank capital and reserves to total assets. Capital includes tier 1 capital and total regulatory capital.
Lending concentration	The asset market share of a country's three largest banks.
Cost to income ratio (%)	Banks' costs divided by their income.
Non-performing loans (%)	The ratio of a country's non-performing to total outstanding loans.
ROA	The banking system's pre-tax return on assets.

Table A3: Variable Description and Sources (continued)

	Description	Source
Z-score	The Z-score captures the probability of default of a country's banking system by comparing its buffer (capitalization and returns) with the volatility of those returns. It is calculated for each bank as $(ROA + (equity/assets))/sd(ROA)$ using data from Bankscope and then aggregated to the country level using a weighted average based on each banks' total assets. Percentage of the total banking assets that are held by foreign banks.	World Bank GFD
Foreign bank share (%)		World Bank GFD
<i>Macroeconomic Variables</i>		
Government exp./GDP	Government expenditure scaled over GDP.	IMF; OECD
Money market rate	A typical short-term money market interest rate.	IMF; OECD
Growth in central bank reserves	The year-on-year growth of central bank reserves (or the monetary base, depending on availability), a measure of monetary policy.	IMF; OECD
Real credit growth	The inflation-adjusted year-on-year growth in financial sector claims on the private sector.	IMF
Real GDP growth	Year-on-year growth in gross domestic product, adjusted for inflation.	IMF; OECD
$\Delta$ Current account/GDP	The ratio of the current account to GDP.	IMF; OECD
Total trade/GDP	The sum of total exports and imports, scaled over GDP.	IMF; OECD
Investment/GDP	The ratio of gross fixed capital formation to GDP.	IMF; OECD
Consumption/GDP	The ratio of private household consumption to GDP.	IMF; OECD
Inflation rate	The year-on-year growth in a country's consumer price index.	IMF; OECD
Exchange rate (US\$)	A country's exchange rate vis-à-vis the US dollar.	IMF; OECD
Central bank rate	The central bank's official policy rate or the market rate explicitly targeted by the central bank.	IMF; BIS, national central banks
<i>Economic expansions and credit booms</i>		
GDP forecast	The World Bank's GDP forecast for the current year.	World Bank
Real house price growth	The year-on-year real growth in house prices.	BIS, OECD
<i>Elections</i>		
Pre-election	Dummy variable equal to 1 in quarters before a general election.	Various (see text)
Pre-election (regular)	Dummy variable equal to 1 in quarters before regular elections, defined as those taking place within a quarter after the anticipated date based on a country's term limit for chief executives or regular practice.	Author's calculation
Pre-election (close)	Dummy variable equal to 1 in quarters before close elections, defined as those where the vote share difference between the election winner and the runner-up is below the median across elections in the sample.	Author's calculation
<i>Political characteristics</i>		
Voice and accountability	Measure of voice and accountability.	World Governance Indicators
State intervention	Index of the degree of state ownership of assets.	Fraser Institute

Table A3: Variable Description and Sources (continued)

	Description	Source
CB governor connections at MoF	Dummy for whether the central bank governor previously worked at the Ministry of Finance.	Various, Mishra and Reshef (2019)
Politically independent bank supervision	An index for the number of times a country's bank supervisors are classified as independent from the government in the four survey waves of Barth, Caprio and Levine (2013).	Barth, Caprio and Levine (2013)
Unified opposition	The Herfindahl index of opposition parties in parliament. Higher values indicate a more unified opposition.	Cruz, Keefer and Scartascini (2018)
<i>Connectedness and lobbying</i>		
Connected firms	The share of politically connected firms (by market capitalization).	Faccio (2006)
Connected banks	The share of banks with at least one former politician on its board.	Braun and Raddatz (2008)
Connected CB governor	Dummy for whether the central bank governor previously worked at a private financial institution.	Various, Mishra and Reshef (2019)
Campaign finance limits	An index of legal limits on campaign financing. Constructed as sum of bans and limits on private income; regulations of spending; and reporting, oversight and sanctions in a given country.	IDEA Political Finance Database
<i>Uncertainty measures</i>		
Economic Policy Uncertainty	The index of economic policy uncertainty for all countries available at . I re-scale all country-level indices to 1 in 2008q1. For the EU countries that do not have data, I assign the aggregate European index. For Taiwan, I use the Chinese index.	Baker, Bloom and Davis (2016)
World Uncertainty Index	The index of world uncertainty, available on Nicholas Bloom's website.	Ahir, Bloom and Furceri (2018).
Stock price volatility	The average of the 360-day volatility of the national stock market index.	World Bank GFD
VIX	Expected stock market volatility implied by S&P 500 index options as calculated by the Chicago Board Options Exchange (CBOE)	St. Louis Fed (FRED)
<i>Macroprudential institutions</i>		
CBI (Dincer & Eichengreen)	Measure of central bank independence covering 2000 to 2010. I extend the series to 2014 using the growth rates of the data in Garriga (2016) (results are unchanged without this adjustment).	Dincer and Eichengreen (2014)
CBI (Crowe & Meade)	A measure of central bank independence in 2003.	Crowe and Meade (2007)
CB transparency (Dincer & Eichengreen)	Measure of central bank transparency covering 2000 to 2010. I extend the series to 2014 by assuming no change between 2010 and 2014 (results are unchanged without this adjustment).	Dincer and Eichengreen (2014)
CB transparency (Crowe & Meade)	Measure of central bank transparency in 2003.	Crowe and Meade (2007)
Financial stability committee (advisory)	Dummy variable equal to 1 if a country has a macroprudential committee consisting of multiple members but no decision making powers, and 0 otherwise.	Edge and Liang (2017)
Financial stability committee (power)	Dummy variable equal to 1 if a country has a macroprudential committee that has decision making powers over tools, and 0 otherwise.	Edge and Liang (2017)
Central bank majority powers	Dummy variable equal to 1 if a country's national central bank has more than 50% decision share over macroprudential tools.	Cerutti, Claessens and Laeven (2015)

Table A4—: Correlation Matrix of Macroprudential Tools

Notes: This table plots pairwise Pearson correlation coefficients of the macroprudential tools constructed from Cerutti et al. (2017), Kuttner and Shim (2016), and Budnik and Kleibl (2018).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
<i>Panel A. Macroprudential indices</i>															
(1) Sector-specific capital buffer index	1.00														
(2) Targeted policy index	0.29	1.00													
<i>Panel B. Components of sector-specific capital buffer index</i>															
(3) Real estate capital buffer	0.86	0.31	1.00												
(4) Consumer credit capital buffer	0.49	0.11	0.35	1.00											
(5) Other capital buffer	0.61	0.10	0.18	0.00	1.00										
<i>Panel C. Components of targeted policy index</i>															
(6) Loan-to-value (LTV) ratio	0.07	0.35	0.11	0.00	-0.00	1.00									
(7) Debt service-to-income (DSTI) limit	-0.00	0.33	0.00	0.00	-0.00	0.57	1.00								
(8) Housing-related taxes	0.00	0.52	0.00	-0.00	0.00	0.00	0.00	1.00							
(9) Concentration limit	-0.00	0.46	0.00	0.00	-0.00	-0.01	-0.01	0.05	1.00						
(10) Loan provisioning limits	0.22	0.38	0.16	0.00	0.22	-0.07	-0.08	0.00	-0.01	1.00					
(11) Risk weights	0.49	0.43	0.62	0.25	-0.00	0.07	0.08	0.00	-0.00	0.05	1.00				
<i>Panel D. Broader macroprudential tools</i>															
(12) General capital requirements	-0.00	0.00	0.00	0.00	-0.00	-0.01	-0.01	0.09	-0.02	0.09	-0.17	1.00			
(13) Interbank exposure	0.05	0.13	0.00	0.00	0.11	-0.01	-0.01	0.00	0.19	0.09	-0.00	0.03	1.00		
(14) Reserve requirements (LC)	0.09	-0.08	0.03	-0.00	0.14	0.00	-0.03	-0.00	-0.06	-0.04	-0.07	-0.03	0.01	1.00	
(15) Reserve requirements (FC)	-0.00	-0.00	0.00	0.00	-0.00	-0.00	0.03	0.00	-0.03	0.02	-0.00	-0.01	0.02	0.46	1.00

Table A5—: Tightening and Loosening Episodes, by Pre-Election Quarter

Notes: This table shows the number of tightening and loosening episodes for the prudential tools constructed from the data in Cerutti et al. (2017), Kuttner and Shim (2016), and Budnik and Kleibl (2018) that overlap with the election data criteria described above.

	Tightening episodes			Loosening episodes		
	Total	Pre-election quarters	Other quarters	Total	Pre-election quarters	Other quarters
<i>Macroprudential policy indices</i>						
Sector-specific capital buffer index	49	0	49	17	1	16
Targeted policy index	200	9	191	111	14	97
<i>Components of the sector-specific capital buffer index</i>						
Real estate capital buffer	33	0	33	14	1	13
Consumer credit capital buffer	8	0	8	2	0	2
Other capital buffer	15	0	15	5	0	5
<i>Components of the targeted policy index</i>						
Loan-to-value (LTV) ratio	40	5	35	18	2	16
Debt service-to-income (DSTI) limit	25	2	23	7	0	7
Housing-related taxes	48	2	46	58	8	50
Concentration limit	45	1	44	16	2	14
Loan provisioning limits	48	2	46	12	0	12
Risk weights	33	0	33	14	2	12
<i>Broader macroprudential tools</i>						
General capital requirements	64	5	59	0	0	0
Interbank exposure	23	0	23	1	0	1
Reserve requirements (LC)	111	6	105	156	11	145
Reserve requirements (FC)	86	3	83	50	2	48



Table A6—: Total Policy Actions and Number of Elections, by Country

Country	Number of policy actions		Type of Election	Number of Elections
	Sector-specific capital buffer index	Targeted policy index		
Argentina	2	4	Presidential	3
Australia	2	1	Legislative	5
Austria	0	0	Legislative	4
Belgium	0	4	Legislative	3
Brazil	8	2	Presidential	3
Bulgaria	3	9	Legislative	4
Canada	0	5	Legislative	5
Chile	0	1	Presidential	3
Colombia	0	0	Presidential	3
Croatia	2	5	Legislative	4
Czech Rep.	0	2	Legislative	4
Denmark	0	3	Legislative	4
Estonia	3	11	Legislative	3
Finland	0	4	Legislative	3
France	0	8	Presidential	3
Germany	0	1	Legislative	4
Greece	0	8	Legislative	5
Hungary	0	11	Legislative	3
Iceland	0	14	Legislative	4
India	8	10	Legislative	2
Indonesia	0	3	Presidential	2
Ireland	2	18	Legislative	3
Israel	4	3	Legislative	4
Italy	0	3	Legislative	4
Japan	0	0	Legislative	5
Latvia	3	5	Legislative	4
Lebanon	0	1	Legislative	4
Lithuania	0	9	Legislative	4
Malaysia	2	10	Legislative	3
Malta	0	5	Legislative	3
Mexico	0	2	Presidential	3
Mongolia	0	1	Legislative	4
Netherlands	0	6	Legislative	5
New Zealand	0	1	Legislative	4
Nigeria	1	0	Presidential	3
Norway	3	4	Legislative	4
Peru	1	4	Presidential	4

**Table A6: Total Policy Actions and Number of Elections, by Country (cont.)**

Philippines	1	4	Presidential	2
Poland	3	10	Legislative	4
Portugal	0	1	Legislative	4
Romania	0	11	Legislative	4
Russia	1	3	Presidential	4
Serbia	3	2	Legislative	5
Singapore	0	13	Legislative	3
Slovakia	0	6	Legislative	4
Slovenia	1	12	Legislative	4
South Africa	0	0	Legislative	2
South Korea	1	21	Presidential	3
Spain	1	6	Legislative	4
Sweden	1	7	Legislative	3
Switzerland	2	1	Legislative	3
Taiwan	0	3	Presidential	4
Thailand	4	10	Legislative	5
Turkey	3	6	Legislative	3
Ukraine	0	4	Presidential	2
United Kingdom	0	7	Legislative	3
United States	0	4	Presidential	4
Uruguay	1	2	Legislative	2
Total	66	311		207

Table A7—: List of Elections in Main Estimation Sample

Country	Quarter	Country	Quarter	Country	Quarter	Country	Quarter
2003q2	Argentina	2003q1	Estonia	2005q2	Lebanon	2009q3	Portugal
2007q4	Argentina	2007q1	Estonia	2009q2	Lebanon	2011q2	Portugal
2011q4	Argentina	2011q1	Estonia	2010q2	Lebanon	2000q4	Romania
2001q4	Australia	2003q1	Finland	2000q4	Lithuania	2004q4	Romania
2004q4	Australia	2007q1	Finland	2004q4	Lithuania	2008q4	Romania
2007q4	Australia	2011q2	Finland	2008q4	Lithuania	2012q4	Romania
2010q3	Australia	2002q2	France	2012q4	Lithuania	2000q1	Russia
2013q3	Australia	2007q2	France	2002q4	Latvia	2004q1	Russia
2002q4	Austria	2012q2	France	2006q4	Latvia	2008q1	Russia
2006q4	Austria	2001q3	United Kingdom	2010q4	Latvia	2012q1	Russia
2008q3	Austria	2005q2	United Kingdom	2011q3	Latvia	2001q4	Singapore
2013q3	Austria	2010q2	United Kingdom	2000q3	Mexico	2006q2	Singapore
2003q2	Belgium	2000q2	Greece	2006q3	Mexico	2011q2	Singapore
2007q2	Belgium	2004q1	Greece	2012q3	Mexico	2000q4	Serbia
2010q2	Belgium	2007q3	Greece	2003q2	Malta	2003q4	Serbia
2001q2	Bulgaria	2009q4	Greece	2008q1	Malta	2007q1	Serbia
2005q2	Bulgaria	2012q2	Greece	2013q1	Malta	2008q2	Serbia
2009q3	Bulgaria	2000q1	Croatia	2001q2	Mongolia	2012q2	Serbia
2013q2	Bulgaria	2003q4	Croatia	2005q2	Mongolia	2002q3	Slovakia
2002q4	Brazil	2007q4	Croatia	2009q2	Mongolia	2006q2	Slovakia
2006q4	Brazil	2011q4	Croatia	2013q2	Mongolia	2010q2	Slovakia
2010q4	Brazil	2002q2	Hungary	2004q1	Malaysia	2012q1	Slovakia
2000q4	Canada	2006q2	Hungary	2008q1	Malaysia	2000q4	Slovenia
2004q2	Canada	2010q2	Hungary	2013q2	Malaysia	2004q4	Slovenia
2006q1	Canada	2004q3	Indonesia	2003q2	Nigeria	2008q3	Slovenia
2008q4	Canada	2009q3	Indonesia	2007q2	Nigeria	2011q4	Slovenia
2011q2	Canada	2004q1	India	2011q2	Nigeria	2002q3	Sweden
2003q4	Switzerland	2009q2	India	2002q2	Netherlands	2006q3	Sweden
2007q4	Switzerland	2002q2	Ireland	2003q1	Netherlands	2010q3	Sweden
2011q4	Switzerland	2007q2	Ireland	2006q4	Netherlands	2001q1	Thailand
2005q4	Chile	2011q1	Ireland	2010q2	Netherlands	2005q1	Thailand
2009q4	Chile	2003q2	Iceland	2012q3	Netherlands	2006q1	Thailand
2013q4	Chile	2007q2	Iceland	2001q3	Norway	2007q4	Thailand
2002q2	Colombia	2009q2	Iceland	2005q3	Norway	2011q3	Thailand
2006q2	Colombia	2013q2	Iceland	2009q3	Norway	2002q4	Turkey
2010q2	Colombia	2003q1	Israel	2013q3	Norway	2007q3	Turkey
2002q2	Czech Republic	2006q1	Israel	2002q3	New Zealand	2011q2	Turkey
2006q2	Czech Republic	2009q1	Israel	2005q3	New Zealand	2000q1	Taiwan
2010q2	Czech Republic	2013q1	Israel	2008q4	New Zealand	2004q1	Taiwan
2013q4	Czech Republic	2001q2	Italy	2011q4	New Zealand	2008q1	Taiwan
2002q3	Germany	2006q2	Italy	2000q2	Peru	2012q1	Taiwan
2005q3	Germany	2008q2	Italy	2001q2	Peru	2004q4	Ukraine
2009q3	Germany	2013q1	Italy	2006q2	Peru	2010q1	Ukraine
2013q3	Germany	2000q2	Japan	2011q2	Peru	2004q4	Uruguay
2001q4	Denmark	2003q4	Japan	2004q2	Philippines	2009q4	Uruguay
2005q1	Denmark	2005q3	Japan	2010q2	Philippines	2000q4	United States
2007q4	Denmark	2009q3	Japan	2001q3	Poland	2004q4	United States
2011q3	Denmark	2012q4	Japan	2005q3	Poland	2008q4	United States
2000q1	Spain	2002q4	South Korea	2007q4	Poland	2012q4	United States
2004q1	Spain	2007q4	South Korea	2011q4	Poland	2004q2	South Africa
2008q1	Spain	2012q4	South Korea	2002q1	Portugal	2009q2	South Africa
2011q4	Spain	2000q3	Lebanon	2005q1	Portugal		

Table A8—: Cross Tabulation of Elections by Type

*Notes:* This table shows the proportion of elections that are defined as regular and close in the main estimation sample. Elections are “regular” if they are held within the time frame specified in a country’s constitution or by legislative practice. Elections are defined as “close” if the winner’s margin of victory is below the sample median.

Election type	Pre-election quarter	Other quarters	Total
<i>Panel A. Full sample</i>			
Irregular	53	3041	3094
Regular	154	0	154
Total	207	3041	3248
<i>Panel B. Subsample with data on vote outcomes</i>			
Not close	82	2431	2513
Close	84	0	84
Total	166	2431	2597

Table A9—: Elections and Macroprudential Regulation – Robustness

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Notes: This table shows coefficients from estimating equation 1, where the dependent variable is the sector-specific capital buffer index or the targeted policy index. Each cell represents the estimate from a separate regression. I only plot the estimated coefficient of the pre-election quarter dummy (t-1),  $\hat{\beta}$ , and the associated standard errors (clustered by country). Unless otherwise indicated, all estimations include country and year-quarter fixed effects and the baseline controls as in column 3 of Table 2. *AR(1)* and *AR(4)* refer to specifications with one or four lags of the dependent variable. *Mean group estimator* refers to regressions using the Pesaran and Smith (1995) estimator, which runs time series regressions country-by-country with a constant and reports the average estimated coefficients; note that the inclusion of a constant demeans the data similar to a panel regression with country fixed effects.

	Sector-specific capital buffer index		Targeted policy index	
	$\hat{\beta}$	SE	$\hat{\beta}$	SE
<i>Panel A. Model specification</i>				
Only country FE	-0.022	(0.010)	-0.092	(0.023)
AR(1)	-0.021	(0.009)	-0.099	(0.024)
AR(4)	-0.023	(0.010)	-0.103	(0.024)
Mean group estimator	-0.033	(0.020)	-0.219	(0.088)
Only periods close to elections	-0.028	(0.011)	-0.096	(0.025)
<i>Panel B. Sample selection</i>				
Only consensus democracies	-0.017	(0.009)	-0.103	(0.023)
No military leaders	-0.022	(0.010)	-0.097	(0.023)
Drop Africa	-0.022	(0.010)	-0.097	(0.023)
Drop Asia	-0.016	(0.010)	-0.119	(0.024)
Drop Americas	-0.022	(0.012)	-0.091	(0.027)
Drop Europe	-0.026	(0.014)	-0.051	(0.033)
Drop MENA	-0.021	(0.010)	-0.097	(0.024)
Drop countries without changes	-0.042	(0.024)	-0.105	(0.025)
Drop countries with most changes	-0.018	(0.010)	-0.102	(0.023)
Pre-crisis only	-0.033	(0.020)	-0.046	(0.032)
Post-crisis only	-0.020	(0.013)	-0.132	(0.044)
<i>Panel C. Additional controls</i>				
4 lags of controls	-0.012	(0.007)	-0.057	(0.025)
4 lags and leads of controls	-0.012	(0.007)	-0.057	(0.025)
Only bank controls	-0.014	(0.009)	-0.064	(0.024)
Only macro controls	-0.018	(0.009)	-0.085	(0.029)
Country $\times$ Election Year FE	-0.037	(0.021)	-0.084	(0.032)
Country $\times$ Quarter FE	-0.024	(0.011)	-0.092	(0.022)
Control for other tools	-0.022	(0.011)	-0.095	(0.024)
Regulation $\times$ Time FE	-0.037	(0.013)	-0.098	(0.028)
Region $\times$ Time FE	-0.020	(0.010)	-0.093	(0.025)
Development $\times$ Time FE	-0.028	(0.011)	-0.100	(0.023)

Table A10—: Testing for Electoral Cycles in Other Variables

Notes: This table tests for electoral cycles in variables other than macroprudential regulation using panel regressions of the type

$$C_{it} = \alpha_i + \mu_t + \sum_{h=-4}^4 \beta_h \text{Election}_{it} + \varepsilon_{it}$$

where  $C_{it}$  is one of the control variables in vector  $\mathbf{X}'$  of equation 1 (shown in the left column). Each row reports the  $\hat{\beta}$ s of separate regressions, where I plot the estimates for the two pre-election quarters. The dependent variables are standardized to have a mean of 0 and a standard deviation of 1. All models include country and year-quarter fixed effects. Standard errors are clustered by country.

	Pre-election (t-1)		Pre-election (t-2)	
	$\hat{\beta}$	SE	$\hat{\beta}$	SE
<i>Panel A. Financial sector variables</i>				
Bank capitalization (%)	0.025	(0.025)	0.007	(0.024)
Lending concentration	-0.049	(0.027)	-0.035	(0.025)
Cost to income ratio (%)	-0.066	(0.031)	-0.077	(0.028)
Non-performing loans (%)	0.008	(0.037)	0.002	(0.038)
Return on assets	0.008	(0.033)	0.035	(0.036)
Z-score	0.003	(0.021)	0.006	(0.018)
Foreign bank share (%)	-0.021	(0.013)	-0.016	(0.012)
<i>Panel B. Macroeconomic variables</i>				
Government exp./GDP	0.001	(0.026)	-0.007	(0.022)
Money market rate	-0.037	(0.036)	-0.039	(0.033)
Growth in CB reserves	0.068	(0.060)	0.033	(0.057)
Real credit growth	-0.078	(0.058)	-0.079	(0.053)
Real GDP growth	0.054	(0.050)	0.045	(0.056)
$\Delta$ Current account/GDP	-0.111	(0.122)	0.040	(0.063)
Trade/GDP	0.008	(0.012)	0.008	(0.011)
Investment/GDP	0.049	(0.050)	0.082	(0.046)
Consumption/GDP	-0.028	(0.023)	-0.029	(0.020)
Inflation rate	-0.007	(0.051)	-0.038	(0.046)
Log(FX)	0.004	(0.005)	0.005	(0.005)
<i>Panel C. First principal components</i>				
Financial sector variables	0.009	(0.036)	0.045	(0.039)
Macroeconomic variables	0.057	(0.037)	0.033	(0.038)

Table A11—: Election Cycles, Politically Connected Banks, and Lobbying

*Notes:* This table shows coefficients from estimating equation 1. The dependent variable is the change in the sector-specific capital buffer index in Panel A and the targeted policy index in Panel B. *Interaction* refers to the proxy for political connections or lobbying power of the financial sector listed in the top row. The interaction variables are standardized to have a mean of 0 and a standard deviation of 1. All estimations include the baseline control variables as in column 3 of Table 2. *Campaign fin. lim.* in column 2 is an index of legal restrictions on campaign financing constructed from the IDEA Political Finance Database. *Connected firms* in column 3 is the share of firms with political connections by market capitalization from Faccio (2006). *Connected banks* in column 4 is the share of banks with at least one former politician on the board of directors from Braun and Raddatz (2010). *Connected CB governor* is a dummy for countries where the central bank governor has previous work experience in the financial sector. The regressions also include the interaction measures by themselves in columns 1 and 5 (unreported); they are absorbed by the country fixed effects in the other columns. Standard errors are clustered by country.

Interaction with:	Bank concentration (1)	Campaign fin. lim. (2)	Connected firms (3)	Connected banks (4)	Connected CB governor (5)
<i>Panel A. Sector-specific capital buffer index</i>					
Election quarter (t-1)	-0.023 (0.010)	-0.022 (0.009)	-0.027 (0.011)	-0.022 (0.010)	-0.026 (0.015)
Election quarter (t-2)	-0.007 (0.020)	-0.007 (0.019)	-0.008 (0.023)	-0.006 (0.020)	-0.024 (0.032)
Election quarter (t-1) × Interaction	-0.010 (0.011)	0.016 (0.011)	-0.006 (0.008)	0.004 (0.008)	0.010 (0.018)
Election quarter (t-2) × Interaction	0.018 (0.028)	0.023 (0.010)	0.005 (0.014)	0.007 (0.014)	0.041 (0.036)
Observations	2,279	2,279	1,858	2,252	2,277
$R^2$	0.06	0.06	0.06	0.07	0.06
Dep. variable mean	0.012	0.012	0.016	0.012	0.012
<i>Panel B. Targeted policy index</i>					
Election quarter (t-1)	-0.097 (0.023)	-0.097 (0.023)	-0.103 (0.026)	-0.098 (0.023)	-0.151 (0.037)
Election quarter (t-2)	-0.043 (0.028)	-0.041 (0.028)	-0.014 (0.029)	-0.044 (0.028)	-0.047 (0.045)
Election quarter (t-1) × Interaction	-0.002 (0.021)	-0.012 (0.016)	-0.013 (0.029)	0.021 (0.017)	0.110 (0.048)
Election quarter (t-2) × Interaction	-0.012 (0.027)	-0.027 (0.024)	0.017 (0.028)	-0.037 (0.021)	-0.001 (0.061)
Observations	2,357	2,357	1,914	2,336	2,241
$R^2$	0.08	0.08	0.09	0.08	0.09
Dep. variable mean	0.029	0.029	0.030	0.030	0.030
Country FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes

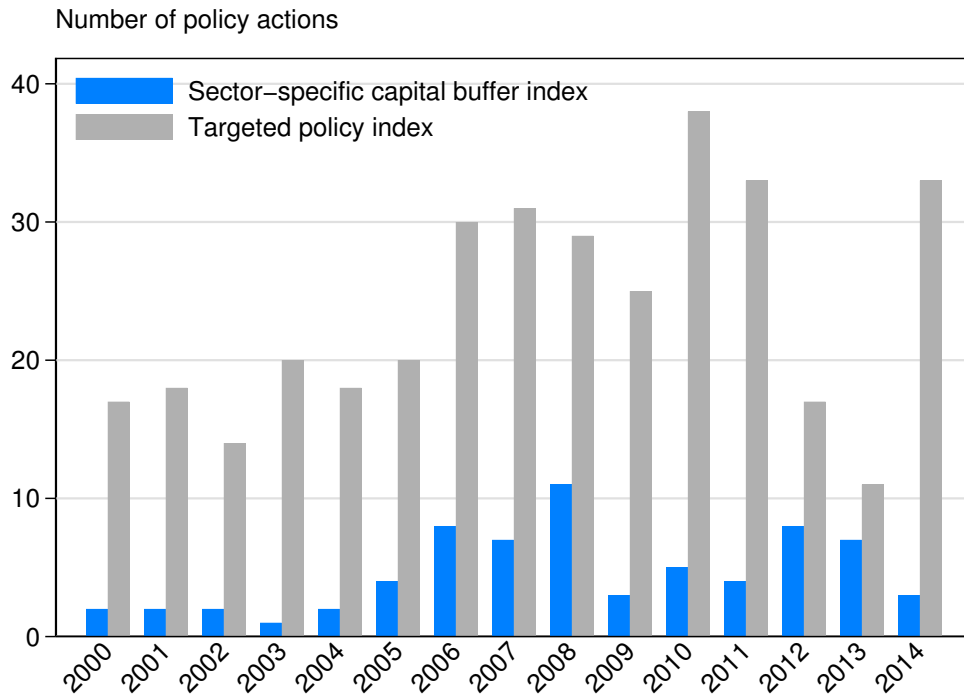
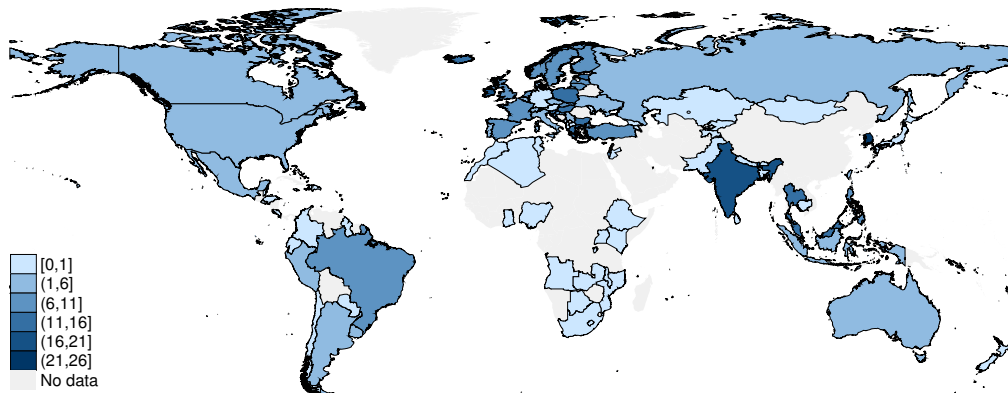
Table A12—: The Electoral Cycle and Uncertainty

*Notes:* This table shows coefficients from estimating equation 1. The dependent variable is the change in the sector-specific capital buffer index in Panel A and the targeted policy index in Panel B. *Uncertainty* refers to the measure of uncertainty listed in the top row: the Economic Policy Index (*EPU*) in column 1; World Uncertainty Index (*WUI*) in column 2; stock market volatility in column 3; and the Chicago Board Options Exchange implied volatility index (*VIX*) in column 4. Note that the *VIX* only varies by year, not by country. The uncertainty variables are standardized to have a mean of 0 and a standard deviation of 1. The regressions also include the uncertainty measures by themselves (unreported). All estimations include the baseline control variables as in column 3 of Table 2. Standard errors are clustered by country.

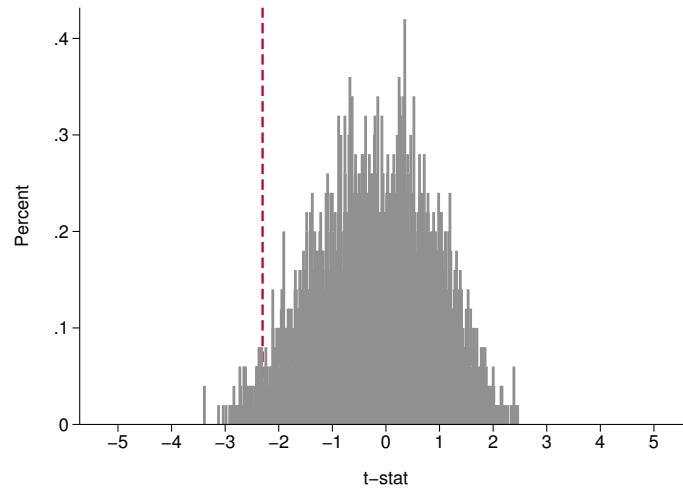
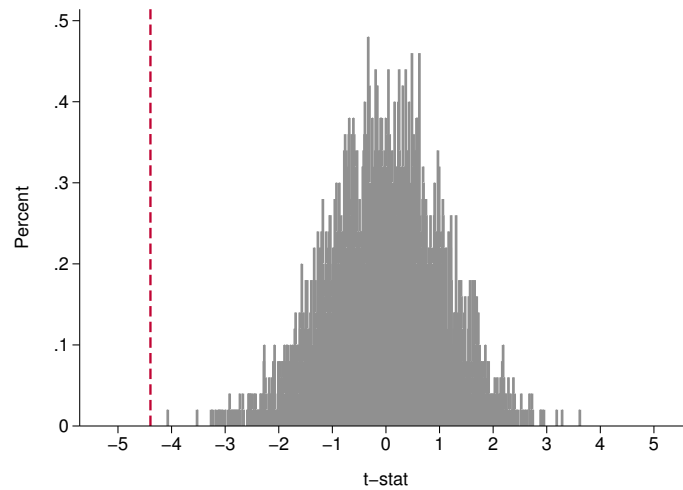
Uncertainty measure:	Log( <i>EPU</i> ) (1)	Log( <i>WUI</i> ) (2)	Stock price volatility (3)	Log( <i>VIX</i> ) (4)
<i>Panel A. Sector-specific capital buffer index</i>				
Election quarter (t-1)	-0.018 (0.010)	-0.018 (0.012)	-0.023 (0.010)	-0.022 (0.010)
Election quarter (t-2)	-0.024 (0.028)	0.018 (0.013)	-0.009 (0.021)	-0.012 (0.023)
Election quarter (t-1) × Uncertainty	0.017 (0.009)	0.021 (0.016)	0.012 (0.006)	-0.004 (0.009)
Election quarter (t-2) × Uncertainty	-0.025 (0.023)	-0.008 (0.014)	-0.006 (0.018)	-0.047 (0.046)
Observations	1,624	1,696	2,215	2,279
$R^2$	0.07	0.10	0.07	0.07
Dep. variable mean	0.007	0.015	0.013	0.012
<i>Panel B. Targeted policy index</i>				
Election quarter (t-1)	-0.130 (0.028)	-0.116 (0.031)	-0.099 (0.024)	-0.097 (0.023)
Election quarter (t-2)	-0.045 (0.035)	-0.040 (0.033)	-0.045 (0.030)	-0.043 (0.028)
Election quarter (t-1) × Uncertainty	-0.035 (0.049)	0.011 (0.034)	-0.006 (0.021)	-0.039 (0.030)
Election quarter (t-2) × Uncertainty	-0.018 (0.023)	0.012 (0.026)	-0.008 (0.025)	-0.030 (0.033)
Observations	1,680	1,752	2,269	2,357
$R^2$	0.11	0.09	0.09	0.08
Dep. variable mean	0.028	0.037	0.029	0.029
Country FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes



Figure A1. : Changes in Macroprudential Policy Across Years and Countries

**Panel A: Changes Across Years****Panel B: Changes Across Countries**

*Notes:* These figures plot the total number of tightening and loosening episodes for the two main measures of macroprudential policy in the paper for all sample countries between 2000 and 2014: sector-specific capital buffer from Cerutti et al. (2017) and the targeted policy index constructed from data in Cerutti et al. (2017), Kuttner and Shim (2016), and Budnik and Kleibl (2018).

**Panel A. Sector-specific capital buffer index****Panel B. Targeted policy index**

*Notes:* This figure plots the  $t$ -statistics of the estimated  $\hat{\beta}$  coefficients from regressing the sector-specific capital buffer index or targeted policy index on 5,000 sets of placebo pre-election dummies. These placebo dummies are calculated by first choosing a random quarter between the first election before the sample start in 2000q1 and the latest quarter one would expect the next election to take place (based on a country's typical practice or term limit), and then assuming that the following placebo elections through 2014q4 were "regular". All regressions include country and time fixed effects and the baseline control variables. The red vertical lines indicate the coefficients estimated with the same regression specification and the actual pre-election quarters in the data. 1% (0%) of the  $t$ -statistics of the placebo pre-election quarters for sector-specific capital buffers and the targeted policy index, respectively, yield smaller values than that in the data.

### B. *The Role of Institutional Frameworks*

Which institutional frameworks matter for the politics of macroprudential regulation? In the case of monetary policy, a broad consensus holds that central bank independence is an effective means of insulating policy decisions from political interference (see e.g., ?Crowe and Meade, 2007; ?). A widespread assumption appears to be that central banks are thus also uniquely suited to implement countercyclical *macroprudential* policy. To quote the former director of the IMF’s Monetary and Capital Markets Department, José Viñals, “... in many countries the central bank is unique in being insulated from lobbying and political pressures, which is important to make macroprudential policy work” (?). The optimal design of governance for macroprudential tools, however, is subject to an ongoing debate.

Section III already showed that independence from politicians matters. I conduct an empirical test focused on institutional frameworks for macroprudential policy in Table A13 here. I begin by looking at whether a country has a financial stability committee in columns 1 and 2 using data from Edge and Liang (2017); around half of the countries in my sample do. These committees usually consist of representatives of different regulatory agencies (the central bank, securities regulators, prudential regulators), as well as the government. They also differ by whether they have a pure advisory role or can actively implement policies. As an example, Edge and Liang (2017) code the United Kingdom’s Financial Policy Committee (FPC) as having tools beyond sharing and advising, while they assign no such leading role for the German Financial Stability Committee (G-FSC).<sup>16</sup>

By introducing interaction terms with the pre-election dummies, I find mixed evidence on the role of financial stability committees. For sector-specific capital buffers, I find a statistically significant negative interaction for advisory committees ( $-0.063$ ) and a positive interaction with deciding committees ( $0.030$ ). However, both coefficients are only statistically significant at the 10% level. For the targeted policy index, I find a negative interaction for deciding committees ( $0.187$ ), statistically significant at the 5% level.

Next, I turn my attention to who has the main responsibility for implementing macroprudential policy. In column 3, I find that whether the central bank is in charge only matters for the targeted policy index, drawing on data from Cerutti, Claessens and Laeven (2015). In particular, I find a coefficient of  $0.078$  of pre-election quarters with central bank authority over macroprudential tools for the targeted policy index; the results for the sector-specific capital buffer are far from statistically significant.

In columns 4 through 7, I restrict the sample to countries where the central bank has the main decision powers and investigate the role of central bank independence.<sup>17</sup> Central

<sup>16</sup>For both types of committees (advisory and equipped with decision-making powers), I create a dummy variable that is equal to 1 for countries that have a committee, and 0 otherwise. The results, however, are not driven by the fact that some countries do not have a committee; they are almost equivalent in the subsample of countries that have one (available upon request).

<sup>17</sup>I also drop the Eurozone countries from these regressions. The central bank independence metrics refer to the European Central Bank. However, in the Eurozone, the national authorities are mostly in charge of macroprudential

bank independence or transparency seem to make little difference for the electoral cycle. The point estimates are far from statistically significant and close to zero in most cases for the sector-specific capital buffer. For the targeted policy index, I find *negative* coefficients for the interaction with de jure central bank independence and a positive coefficient for the transparency measure from Crowe and Meade (2007).

Taken together, there is limited evidence that central bank governance eliminates election cycles in macroprudential tools. An alternative explanation could be that independent central banks do not tighten macroprudential policy before elections precisely because they do not want to appear partisan. In this view, independent central banks do not tighten before elections to counteract charges of political partisanship, while less independent central banks do not tighten due to opportunistic political motives.

To investigate whether the limited role for central bank independence I find is due to the particular country sample, I test for electoral cycles in monetary policy, building on existing work (e.g., ??). In particular, I replace the dependent variable in regressions of the type in equation 1 with one of two simple measures: the central bank's policy rate or the growth in central bank reserves.<sup>18</sup> Table A14 shows that the interaction term *Pre – election* × *CBI* is statistically significant in all specifications.<sup>19</sup> The coefficients suggest that central bank independence decreases electoral pressures for monetary policy. For the policy rate in column 3, for example, the estimate of  $-0.735$  on the pre-election dummy ( $t-1$ ) suggests central banks are more likely to ease monetary policy before elections; the interaction term of  $1.933$  indicates that this effect is mitigated by central bank independence.

While there are alternative explanations, three factors could explain why independent central banks may be less decisive for political cycles in macroprudential regulation than monetary policy. First, experiences with credit controls, which are in many ways historical precursors of macroprudential tools (?), suggest that targeted policies are fundamentally different from the “meat-ax” of monetary policy because the “discriminatory effects of aggregate policies (e.g., on housing) are unintentional” (Kane, 1977). According to Kane, such targeted policies are thus more likely to be hijacked for political purposes. In line with this idea, ? warns that a macroprudential mandate may lead to a “politicization of central bank policy.” Second, the policy targets for macroprudential regulation are much less clearly defined than for monetary policy (e.g., ?). This may make it more difficult for central banks to make independent decisions, in particular when it comes to tightening during a boom (?). Third, in contrast to monetary policy, the effect of many macroprudential tools could at least in principle be easily undone by fiscal authorities. For example, a tightening of LTV ratios set by an independent central bank could be counteracted by a decrease in housing transaction taxes. This might reduce the leeway independent central banks have over macroprudential policy. It also suggests that active cooperation between the government and regulators may be key to make macroprudential

regulation. As such, the estimates from regressions including the Eurozone would not be informative about a potential role of central bank governance.

<sup>18</sup>Section II.F shows that there is no electoral cycle in central bank reserves or the money market interest rate.

<sup>19</sup>I test for election cycles separately in a sample with and without the Eurozone. When the Eurozone is included, I treat it as a single country. See Table A14 for details.

regulation work without imposing large costs on the median voter (see e.g., ??).

Table A13—: Institutional Frameworks, Elections, and Macroprudential Policy

Notes: This table shows coefficients from estimating regressions of the type in equation 1. The dependent variable is the change in sector-specific capital buffers in Panel A and the targeted policy index in Panel B. *Financial stability committee (advisory)* is a dummy variable for countries where a committee on macroprudential policy decisions exists but the committee does not have decision making powers (Edge and Liang, 2017). *Financial stability committee (decides)* is a dummy for countries where it does. *Macropru. decided by CB* indicates whether the central bank has more than a 50% share in macroprudential policy decisions as classified by Cerutti, Claessens and Laeven (2015). *Crowe-Meade and Dincer-Eichengreen* refer to data on central bank independence and transparency from Crowe and Meade (2007) and Dincer and Eichengreen (2014), respectively. The sample in columns 4 through 7 excludes the Eurozone countries, where these measures refer to the European Central Bank, which is not in charge of macroprudential policy. It is also limited to countries where the central bank decides on policy. The continuous interaction variables are standardized to have a mean of 0 and a standard deviation of 1. All estimations include country and year-quarter fixed effects as well as the baseline control variables as in column 3 of Table 2. Standard errors are clustered by country.

	If central bank decides macroprudential policy...								
	Financial stability committee			Macropru. decided by CB		De jure CB independence		CB transparency	
	Advisory (1)	Decides (2)	(3)	Crowe- Meade (4)	Dincer- Eichengreen (5)	Crowe- Meade (6)	Dincer- Eichengreen (7)		
<i>Panel A. Sector-specific capital buffer index</i>									
Election quarter (t-1)	-0.027 (0.017)	-0.027 (0.012)	-0.024 (0.014)	-0.058 (0.017)	-0.049 (0.025)	-0.061 (0.040)	-0.037 (0.018)		
Election quarter (t-2)	0.026 (0.016)	-0.005 (0.025)	-0.021 (0.030)	0.012 (0.035)	0.035 (0.040)	0.095 (0.049)	0.042 (0.036)		
Election quarter (t-1) × Interaction	0.009 (0.019)	0.030 (0.017)	-0.002 (0.020)	0.016 (0.024)	0.008 (0.028)	0.010 (0.043)	0.007 (0.018)		
Election quarter (t-2) × Interaction	-0.063 (0.036)	-0.006 (0.027)	0.035 (0.036)	0.019 (0.027)	0.021 (0.021)	0.090 (0.051)	0.046 (0.031)		
Observations	2,252	2,252	2,052	535	452	294	560		
R <sup>2</sup>	0.07	0.06	0.06	0.19	0.29	0.33	0.18		
Dep. variable mean	0.012	0.012	0.014	0.034	0.031	0.027	0.030		
<i>Panel B. Targeted policy index</i>									
Election quarter (t-1)	-0.121 (0.040)	-0.082 (0.023)	-0.113 (0.030)	-0.067 (0.045)	-0.063 (0.061)	-0.070 (0.054)	-0.051 (0.034)		
Election quarter (t-2)	-0.028 (0.051)	-0.009 (0.028)	-0.049 (0.041)	-0.050 (0.050)	-0.020 (0.073)	0.073 (0.088)	-0.009 (0.059)		
Election quarter (t-1) × Interaction	0.041 (0.044)	-0.100 (0.063)	0.078 (0.044)	-0.078 (0.033)	-0.098 (0.045)	-0.006 (0.069)	0.047 (0.046)		
Election quarter (t-2) × Interaction	-0.029 (0.058)	-0.190 (0.076)	-0.009 (0.064)	-0.059 (0.074)	-0.051 (0.080)	0.174 (0.071)	0.098 (0.071)		
Observations	2,336	2,336	2,016	517	440	294	548		
R <sup>2</sup>	0.08	0.08	0.09	0.27	0.32	0.39	0.25		
Dep. variable mean	0.030	0.030	0.036	0.060	0.070	0.061	0.064		

Table A14—: Central Bank Independence and Monetary Policy Cycles

*Notes:* This table shows coefficients from estimating equation 1. The dependent variable is change in the central bank policy rate or the percentage change in central bank reserves. *CBI* is the measure of central bank independence from Dincer and Eichengreen (2014), extended using the data from Garriga (2016). All estimations include the baseline control variables as in column 3 of Table 2 except the growth in central bank reserves. For the policy rate I include one lag of the dependent variable, for reserves two lags. I treat the Eurozone as a single country in columns 1 and 2, and assign it the timing of German elections and the average of all control variables; the results are almost equivalent if I instead use country-specific elections and controls. Standard errors are clustered by country.

Interaction with:	With Eurozone		Without Eurozone	
	$\Delta$ Policy rate (1)	$\Delta$ CB reserves (2)	$\Delta$ Policy rate (3)	$\Delta$ CB reserves (4)
Election quarter (t-1)	-0.890 (0.374)	0.051 (0.030)	-0.735 (0.430)	0.094 (0.037)
Election quarter (t-2)	-0.573 (0.343)	0.005 (0.020)	-0.051 (0.355)	0.003 (0.022)
Election quarter (t-1) $\times$ CBI	1.427 (0.768)	-0.105 (0.058)	1.933 (1.068)	-0.168 (0.067)
Election quarter (t-2) $\times$ CBI	0.227 (0.544)	-0.019 (0.041)	-0.197 (0.833)	0.013 (0.049)
Observations	2,592	3,618	1,699	1,787
$R^2$	0.151	0.504	0.199	0.529
Dep. variable mean	-0.123	0.096	-0.112	0.088
Country FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes