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Abstract

We investigate whether European banks adjust their loan prices and volumes of new lending in the months running up to major national elections. Using a unique dataset that draws on data covering some 250 banks in 19 Eurozone countries from 2010 to 2020 at monthly frequency, and that includes lending amounts and interest rates on new lending, we find that European banks increase loan rates for corporate and housing loans ahead of elections. This supports the view that loan pricing changes of European banks are driven by the electoral uncertainty inherent to the democratic election process. We find that the impact of elections is more pronounced for small banks, as well as obtain some evidence that elections affect the credit supply of banks. Our findings suggest that the occurrence of elections is affecting the behavior of European banks.

Keywords: bank, lending, politics, elections, political uncertainty, loan pricing

JEL: C51, E37, E44, F34

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Non-technical summary

FOCUS

Do elections affect the lending behavior of European banks? Do banks change their credit supply and their loan pricing when major national elections approach in European countries? The literature provides two views on how banks adjust their lending behavior around elections. The uncertainty view says that due to heightened uncertainty lending decreases and loan prices increase as an election approaches. Manipulation view, on the other hand, assumes that bank lending increases before an election because politicians seek to manipulate economic instruments to enhance their chances of re-election.

CONTRIBUTION

Using a unique dataset that draws on monthly data covering some 250 banks in 19 Eurozone countries from 2010 to 2020 we investigate whether banks adjust their loan prices and volumes of new lending in the months running up to major national elections. By doing so, we provide an initial investigation into the impact of major national elections on the lending behavior of banks in developed countries. This is important as nearly all of the studies investigating political interference in lending behavior of banks before elections rely on data from emerging countries. Utilizing our detailed dataset we check whether elections exert different impacts for corporate, housing, and consumption loans, thereby avoiding possible blurring of heterogeneous effects of elections on lending behavior that might arise if we only considered total bank lending.

FINDINGS

Our results provide evidence in line with the uncertainty view. European banks tend to increase their prices on corporate and housing loans in the months before elections. This supports the view that loan pricing changes of European banks are driven by the electoral uncertainty inherent to the democratic election process. We further find that the positive effect of upcoming elections on loan pricing mainly affects smaller banks. We obtain some evidence that elections influence the credit supply of banks as only the amounts of new housing loans decrease significantly. Further analysis shows that when elections are preceded by high uncertainty, the amount of new loans is lower in the months ahead of elections. Our results provide useful insights about changes in lending behavior of banks related to the electoral calendar.

1 Introduction

Two views dominate the discussion on how banks adjust their lending behavior with respect to the credit supply and loan pricing in the run-up to major national elections. Under the manipulation view, bank lending is expected to increase before an election. Politicians seek to manipulate economic instruments to enhance their chances of re-election in line with the political economy literature (Nordhaus, 1975; Rogoff and Sibert, 1988). Credit contractions can also be politically costly (Funke, Schularick and Trebesch, 2016; Gyongyosi and Verner, 2019), so incumbent governments may use bank lending as a strategic tool by influencing lending behavior of state-owned banks to expand bank credit in election times. The manipulation view is empirically supported by a handful of works, showing increases in state-owned bank lending in election years in emerging countries (Dinc, 2005; Carvalho, 2014; Kumar, 2020; Schoors and Weill, 2020; Bircan and Saka, 2021). The sole study confirming this outcome in a developed country is the work of Englmaier and Stowasser (2017) on Germany.

The scarcity of evidence bolstering the manipulation view in the European context is intriguing. Most studies finding manipulative lending behavior on the part of state-owned banks deal with emerging nations. European banks, in contrast, tend to be in private hands, which restricts the opportunities for governments to influence bank lending directly. Furthermore, institutions in Europe tend to be more robust than those in emerging economies. Systems of checks and balances, for example, reduce the ability of politicians to alter the pre-electoral behavior of banks.

While manipulation may be rarer in Europe than in emerging economies, the incentives still exist for European governments to manipulate economic levers in order to influence an electoral outcome. For example, governments can affect private bank lending before elections with a set of carrots and sticks such as threats of withdrawing banking licenses or amendments to banking regulation (Müller, 2023). The scarce evidence of such political interference by private banks is mainly limited to the works of Fungáčová et al. (2023) for Russia and Delatte, Matray, and Pinardon-Touati (2020) for France. The latter study shows that private banks in France increase lending before elections to gain market share in the local public entity debt market.

The opposing uncertainty view says that lending decreases and loan prices increase as an election approaches. Elections heighten uncertainty when banks are unsure about the election outcome and future economic policies (Baker et al., 2020). Electoral uncertainty is thus expected to cause banks to increase their loan pricing. This is observed for syndicated loans by Francis, Hasan and Zhu (2014) in the case of the US. In addition, Kim (2019) finds pricing increases in a cross-country dataset of loans including borrowers from 63 countries, and Ashraf and Shen (2019) at the

bank level for a cross-country dataset of banks from 17 mainly developed countries. Electoral uncertainty can also reduce the supply of loans, as shown by Kara and Yook (2023) for jumbo mortgage loans issued prior to US gubernatorial elections.

The uncertainty view seems to apply better to democracies, which are characterized by less predictable electoral outcomes. In electoral autocracies such as Russia, election outcomes are rarely in doubt. Thus, the influence of elections on lending behavior may differ considerably between democracies and electoral autocracies.

The aim of this paper is to uncover whether major national elections affect the supply and the interest rate of new loans of European banks. By doing so, we provide an initial investigation into the impact of major national elections on the lending behavior of banks in developed countries.

As explained above, nearly all of the studies investigating political interference in lending behavior of banks before elections rely on data from emerging countries (e.g. Carvalho, 2014; Kumar, 2020). The two works analyzing how elections interfere with lending behavior in developed countries are Englmaier and Stowasser (2017) and Delatte, Matray and Pinardon-Touati (2020). Both studies however concentrate on the influence of local elections on specific lending market segments. Englmaier and Stowasser (2017) study the behavior of savings banks in public hands, while Delatte, Matray and Pinardon-Touati (2020) consider the market of loans to public entities. Here, we examine how major national elections affect the bank behavior in lending to firms and households.

To perform our investigation, we use a unique dataset of about 250 banks from 19 Eurozone countries covering the period from January 2010 until December 2020. This dataset includes monthly data on the amount and the interest rate of new loans for all banks. Such detail allows us to measure the main variables of interest precisely. Unlike former studies, we do not rely on proxies for measuring new loans with loan growth, which includes both new loans and repayments of former loans (e.g. Englmaier and Stowasser, 2017), or interest rates for new loans proxied with the implicit interest rate of loans (e.g. Ashraf and Shen, 2019). The monthly frequency of our dataset makes it possible to study bank lending behavior at specific points in the run-up to an election.

Our dataset also distinguishes among corporate, housing, and consumption loans. We utilize this data to check whether elections exert different impacts for corporate, housing, and consumption loans, thereby avoiding possible blurring of heterogeneous effects of elections on lending behavior that might arise if we only considered total bank lending. Most of the literature focuses on corporate loans or total bank lending. Under the manipulation view, we expect loans to households (housing and consumption loans) to be more sensitive to elections than corporate loans. Households vote in elections, which means that an increase in the amount of household loans and a reduction in their prices can affect their voting behavior. The uncertainty view, in contrast, says that elections are likely to have a greater impact on corporate and consumption loans than housing loans. Housing loans are less risky as they are almost always secured by a physical asset. Moreover, the repayment of housing loans is less sensitive to the business cycle than repayment of corporate or consumption loans. Indeed, the risk of default on corporate loans is strongly influenced by the business cycle, and so greater uncertainty about future economic policy may increase the pricing of corporate loans. The repayment of consumer loans is also sensitive to the business cycle through fluctuations in household income. Obviously, we do not imply here that housing loan repayment is unaffected by macroeconomic conditions, but rather that electoral uncertainty is not a major factor in European housing loans, which are more likely governed by rate changes decided by the independent European Central Bank (ECB) or the long-term structural characteristics of housing markets.

We address the concern that loan demand can drive the results. The actions of incumbent governments or the electoral uncertainty can influence loan demand, which might affect both the volume of new loans issued or loan pricing. Excluding loan demand from the estimations could also lead to misinterpreting changes in the lending behavior of banks. To mitigate these concerns, we control for loan demand in all estimations by employing data from ECB's Bank Lending Survey at the country level and also take into account country-specific macroeconomic developments.

Our focus on the Eurozone countries takes advantage of the fact that all banks in our sample operate under the same monetary policy. This setting provides an ideal cross-country dataset to investigate the specific impact of elections with no confounding effect of monetary policy. Moreover, monetary policy, which affects the lending decisions of banks, can be considered exogenous to the forthcoming elections in our framework due to the ECB's political independence. Finally, the data share a common historical context: all elections considered in our cross-country dataset of banks from 19 democratic countries were held within the 11-year observation period.

Our paper relates to several strands in the literature. First, we contribute to the burgeoning body of work on politics and banking. By scrutinizing the lending behavior of banks before major national elections in European countries, we advance the understanding of the interactions between politics and banking in developed countries, which have been analyzed from such perspectives as political connections (Houston et al., 2014) and government bailouts (Blau, Brough, and Thomas, 2013). Our work is also of interest for emerging countries as it highlights differences in the preelection lending behavior of banks in developed and developing countries.

Second, we add to the literature on the impact of political uncertainty on bank behavior. Unlike Francis, Hasan, and Zhu (2014) or Kim (2019), we do not restrict our analysis to syndicated loans, which are specific loans in terms of amount and type of borrower. We investigate whether political uncertainty associated with elections affects corporate loans, housing loans, and consumption loans individually. Our study is related to the investigation of Ashraf and Shen (2019) into the effects of political uncertainty on bank loan pricing in a sample of 17 countries as it includes several European countries. We extend this work with a more detailed dataset of monthly frequency that also specifies interest rates of new lending.

Our evidence favors the uncertainty view. European banks tend to increase their prices on corporate and housing loans in the months before elections. We further find that the positive effect of upcoming elections on loan pricing mainly affects smaller banks. We obtain some evidence that elections influence the credit supply of banks as only the amounts of new housing loans decrease significantly. Further analysis shows that when elections are preceded by high uncertainty, the amount of new loans is lower in the months ahead of elections. Our results provide useful insights about changes in lending behavior of banks related to the electoral calendar.

The remainder of the paper is organized as follows. Section 2 presents our data and methodology. Section 3 reports the results of the main estimations and some additional estimations that take into account the heterogeneity of our sample and influence of uncertainty. Section 4 concludes.

2 Data and methodology

2.1 Data

Our dataset for estimating the relation between main national elections and bank lending was created by merging several sources of data, including two confidential ECB datasets. The first ECB dataset is the database of individual monetary and financial institutions interest rates (IMIR), which contains bank interest rates for various types of loans and deposits. Bank balance sheet data come from the ECB database of individual balance sheet items (IBSI). These monthly data enable us to investigate bank lending during an election's approach. Banks in these datasets are classified based on residential principle. The data are unconsolidated. Altogether our dataset contains monthly data for over 300 banks from 19 euro area countries. The banks included account for 54 % of total assets of euro area banks. Looking at the proportion of lending, our sample covers around 70 % of new corporate and housing loans and 50 % of new consumption loans provided by banks in the euro area. The development of the aggregated main lending variables in our sample is line with their trends at the euro-area level. Our observation period runs from January 2010 to December 2020.

Our dependent variables are either the amount of new loans or the lending rate reflecting the price of the new loans. Our detailed database enables us to distinguish three types of loans: corporate loans (loans to non-financial corporations), housing loans, and consumption loans, as well as their corresponding lending rates. The lending rate for all categories of loans is calculated as the weighted average of lending rates for different loans belonging to certain types that each sample bank provides.

To obtain the election dates, we use the online database Election Guide.¹ This dataset provides historical information on all national elections and referendums held around the world since 1998. To include only the most important elections for each country, we utilize the World Bank's Database on Political Institutions (DPI, 2020). This dataset classifies countries by political system into parliamentary, assembly-elected president, or presidential. During the 2010–2020 observation period for 19 euro area countries, 66 national elections were held (see Table A1 in the appendix).

To control for country-specific macroeconomic developments, we include industrial production year-on-year growth as well as harmonized unemployment rate in each country, both from Eurostat at monthly frequency. We also take into account credit demand by employing the data from ECB's Bank Lending Survey. The question posed to banks is as follows:

"Over the past three months (apart from normal seasonal fluctuations), how has the demand for loans or credit lines to enterprises / households changed at your bank? Please refer to the financing need of enterprises / households independent of whether this need will result in a loan or not."

Respondents are invited to choose from five possible answers: 1) decreased considerably, 2) decreased somewhat, 3) remained basically unchanged, 4) increased somewhat, and 5) increased considerably. The net percentage of banks reporting an increase in demand in one country is defined as the percentage of banks reporting an increase in demand (answers 4 or 5) minus the percentage of

¹ <u>https://www.electionguide.org/</u>

banks reporting a decrease in demand (answers 1 or 2). For each country, the cumulative sum of this variable is used in the regressions to account for the change in credit demand over time. Monetary policy is accounted for by including the change in the Euro Overnight Index Average (Eonia) reference rate.

To avoid extreme values, we winsorize all bank-level variables included in the analysis at the 1 % and 99 % levels. The final sample used in our estimations constitutes an unbalanced panel of over 25,000 bank-month observations for about 250 banks. Table A2 in the appendix provides the summary statistics.

2.2 Methodology

We investigate the change in the amount and price of lending around elections by estimating the following panel regression specification:

$$Lending_{i,c,t} = \alpha + \sum_{k=1}^{4} \beta_k * Election_{i,c,t-k} + \gamma * X_{i,c,t-1} + \eta * Macro_{t-1} + \omega_i + \tau_t + \varepsilon_{i,t}$$
(1)

The dependent variable *Lending*_{*i*,*c*,*t*} concerns the amount or price of new loans provided by bank *i* in country *c* at time *t*. Three categories of loans are considered: corporate loans, housing loans, and consumption loans. We measure the amount of lending as the logarithm of the amount of new loans. The price of lending is defined as the lending rate charged for certain type of new loans.

Our main variable of interest is the election quarter dummy variable. The *Election*_{*i,c,t-k*} (k = 1, 2, 3, 4) is set to one if bank *i*'s home country *c* holds election in month after quarter *t-k*, and zero otherwise. *Election*_{*t-1*} is the 3-month period before the month the election is held. *Election*_{*t-2*} is the dummy variable that equals one for the fourth to sixth month before the election (which corresponds to second quarter before election and so on). We do not include the month of the election in our estimations as election can take place at different times during the month in different countries. We account for four quarters before the election is held as we are primarily interested in bank behavior at various times as the election approaches. The estimated coefficients of our four dummy variables account for change in the amount or price of different types of loans of eurozone banks in countries with approaching elections relative to eurozone banks in countries without upcoming elections.

In the estimations, we consider several standard time-varying bank-level characteristics in line with the literature (e.g. Jiménez et al., 2012) that may influence the volume and price of bank lending. These include bank size, defined as the logarithm of total assets, capitalization (equity/total

assets) and the ratios of loans to total assets, as well as deposits to total assets. The group of macroeconomic control variables includes the Eonia rate to account for monetary policy, country-level variables controlling for industrial production and unemployment, and a credit demand variable based on survey data. All control variables except credit demand are lagged by one month to alleviate potential endogeneity. As credit demand is available at quarterly frequency only, it is lagged by three months. Bank, month, and year fixed effects are included in the estimations. All specifications are estimated using a fixed effects model with standard errors clustered at bank level.

3 Results

3.1 Main estimations

We first investigate whether elections affect loan rates. The estimations for three loan rates (corporate loan rate, housing loan rate, and consumption loan rate) are presented in first three columns of Table1. We obtain two striking findings.

First, we find that electoral episodes are associated with a rise in loan pricing for corporate loans and for housing loans. The coefficient of *Election* is significantly positive for all four quarters before the election in the case of housing loans and three out of four quarters in the case of corporate loans. Second, we do not observe that elections are associated with higher rates on consumption loans.

These findings are in line with the uncertainty view. Quarters before elections are associated with greater uncertainty leading to a rise in loan rates. We do not, however, find this result for all types of loans. While the uncertainty view suggests a greater increase of loan rates for corporate loans and consumer loans in comparison to household loans, we only find significant results for corporate and housing loans. Our results accord with the findings of Francis, Hasan, and Zhu (2014) and Kim (2019) studying syndicated loans, Kara and Yook (2023) examining jumbo mortgage loans, and Ashraf and Shen (2019) using total bank loans, all concluding to a positive impact of political uncertainty on bank loan pricing. Similar to this existing research, we focus on democracies, which means that we can explain the results through greater uncertainty associated with electoral process.

Table 1. Main estimations

This table shows the results of fixed effects panel regressions as indicated in Equation (1). The dependent variable is the loan rate (columns 1-3) or the logarithm of the amount of new loans (columns 4-6). Both dependent variables are reported for corporate loans, housing loans, and consumption loans. *Election* dummy variables equal one for 1, 2, 3, or 4 quarters before an election in the country where the bank is headquartered. We include four bank-level control variables. *Bank size* is the logarithm of total assets. *Capitalization* is the ratio of equity to total assets. *Loans/assets* is the ratio of total loans to total assets. *Deposits/assets* is the ratio of total deposits to total assets. *Industrial production* and *Unemployment* measures are at the country level. *Eonia* is change in EONIA rate to account for the changes in monetary policy in the euro zone. *Credit demand* is the variable based on the Bank Lending Survey that accounts for the credit demand for different types of loans as reported by banks in that country. All control variables are lagged by one period, except for *Credit demand*, which has a three-month lag. Standard errors clustered at bank level appear in brackets below estimated coefficients. *, **, *** denote an estimate significantly different from 0 at the 10 %, 5 %, and 1 % level, respectively. Bank, month, and year fixed effects are included.

Dependent variable	Loan rates			New loans			
	(1)	(2)	(3)	(4)	(5)	(6)	
	Corporate	Housing	Consumption	Corporate	Housing	Consumption	
Election _{t-Q1}	0.057***	0.094***	0.040	0.006	-0.035*	0.008	
	(0.019)	(0.014)	(0.036)	(0.025)	(0.019)	(0.022)	
Election _{t-Q2}	0.023	0.093***	0.029	0.039	-0.044**	0.002	
	(0.019)	(0.016)	(0.038)	(0.024)	(0.018)	(0.022)	
Election _{t-Q3}	0.067***	0.081***	0.022	0.022	-0.060***	0.013	
	(0.019)	(0.017)	(0.042)	(0.023)	(0.020)	(0.020)	
Election _{t-Q4}	0.065**	0.056***	0.018	0.028	-0.018	0.015	
	(0.025)	(0.019)	(0.036)	(0.027)	(0.018)	(0.021)	
Bank size	0.095	0.029	-0.157	1.022***	1.094***	0.616***	
	(0.126)	(0.107)	(0.310)	(0.166)	(0.193)	(0.234)	
Capitalization	-4.134***	-0.482	-2.394	-1.696	-3.573***	-3.537***	
	(0.959)	(0.596)	(1.812)	(1.058)	(1.284)	(1.146)	
Loans/assets	1.118***	-0.602**	-0.742	1.231***	1.126***	1.387***	
	(0.340)	(0.302)	(0.706)	(0.381)	(0.317)	(0.482)	
Deposits/assets	-1.496***	-0.226	-1.129	0.427	2.595***	1.352*	
	(0.388)	(0.320)	(0.787)	(0.497)	(0.568)	(0.687)	
Industrial production	-0.006***	-0.003*	-0.010**	-0.011***	0.003*	0.008***	
	(0.002)	(0.002)	(0.005)	(0.002)	(0.002)	(0.003)	
Unemployment	0.045***	-0.012	-0.045*	0.019*	0.017	-0.008	
	(0.011)	(0.010)	(0.027)	(0.011)	(0.013)	(0.014)	
Eonia	0.446***	0.383***	0.152***	-0.034	-0.109***	-0.101***	
	(0.030)	(0.019)	(0.045)	(0.032)	(0.027)	(0.028)	
Credit demand	-0.057***	-0.063***	-0.122***	0.014	0.065***	0.061***	
	(0.017)	(0.008)	(0.032)	(0.019)	(0.011)	(0.021)	
Bank FE	yes	yes	yes	yes	yes	yes	
Time FE	yes	yes	yes	yes	yes	yes	
Observations	25,339	23,641	22,417	25,349	23,647	22,445	
Number of banks	247	235	229	247	236	230	
\mathbb{R}^2	0.567	0.754	0.280	0.119	0.272	0.096	

In terms of economic significance, we observe a rise in housing loan rates before elections of roughly 8 basis points and an increase in corporate loan rates of about 6 basis points. Housing loan rates also tend to increase as the election date approaches. Our findings are of the same order of magnitude as those Kim (2019) obtained for syndicated loans. She shows that borrowing firms pay on average 7 basis points more on loans when there is a national election. Kara and Yook (2023) find that interest rates on jumbo mortgage loans are 6.3 basis points higher before gubernatorial elections in the US.

We turn to the analysis of the relation between elections and amounts of new loans. We use the same model specification and the results are reported in columns 4-6 of Table 1.

We find that the coefficient of *Election* is not significant when looking at the amount of new corporate and consumption loans. Nevertheless, the coefficient of *Election* is significant and negative in quarters 1-3 before elections in the case of housing loans. In other words, the amount of new housing loans decreases in the period before elections, so only credit supply of housing loans is affected by the occurrence of elections in European countries.

There is no general support for the manipulation view as no significant increase in lending ahead of elections is observed. Our results differ from the former works on elections and bank lending generally finding greater bank lending before elections (e.g. Dinc, 2005; Carvalho, 2014; Englmaier and Stowasser, 2017). However, unlike these previous works concentrating on emerging countries and state-owned banks, our study examines the lending behavior of mostly private banks in developed countries with strong institutions. This framework reduces the possibility of manipulation for the authorities.

In line with our conclusion for loan pricing, when looking at the amount of new housing loans our results do support the uncertainty view as we find pre-electoral reduction in housing loans. The democratic nature of European countries led to lower credit supply before elections owing to the uncertainty associated with electoral processes in these political regimes. Our results are in line with Kara and Yook (2023), who find evidence favoring the uncertainty view through lower supply of jumbo mortgage loans before gubernatorial elections in the US.

3.2 Estimations by bank size

Our results show that elections contribute to an increase in the price of new corporate and housing loans and have a significant effect on the amount of housing loans issued. We now ask whether these effects vary depending on bank size.

We first hypothesize that uncertainty before elections has a greater impact on smaller banks as small banks are expected to be more risk-averse. They do not benefit from the implicit government guarantee associated with the "too big to fail" argument. Thus, such banks would have greater incentives to reduce lending and increase loan pricing due to the uncertainty of an approaching election.

In addition, possible manipulation can have a different influence depending on bank size. On the one hand, political pressures can be stronger for smaller banks, which generally are more dependent on public decisions such as access to public clients. On the other hand, the government might have incentives to interfere more in the lending of large banks, which, thanks to their size, are capable of providing a larger potential impact on the electoral outcome.

Taken together, this leads to an ambiguous prediction for the differences in the results for banks according to their size. We therefore perform separate estimations for small and large banks, defined by banks with total assets below and above the median of the total assets distribution of our sample.² We again conduct the analysis for both loan rates and new loans.

Panel A of Table 2 displays the results for loan rates. While the main estimations show higher loan prices for corporate and housing loans before elections, this finding is observed only for small banks. In the case of large banks, we only find support for increasing loan prices before elections for housing loans. Moreover, the magnitude of the increase in housing loan prices is lower for big banks than small banks.

These results for loan rates by bank size help illuminate our main estimations. The positive effect of upcoming elections on loan pricing mainly comes from small banks, the group most affected by the uncertainty surrounding elections.

Panel B of Table 2 reports the results for the amount of new loans. We do not observe significant decrease in the amount of new loans provided by large banks before elections. On the other hand, small banks seem to decrease the amount of new housing loans 3 to 12 months before elections as the estimated coefficients are significant and negative.

Overall, our results indicate that small banks dependent on public decisions and external funding tend to adjust their lending behavior, particularly for housing loans, ahead of a national election.

² The median in our sample is 29 billion euros.

Table 2. Estimations by bank size

This table reports estimated coefficients for *Election* dummy variables for the same regressions as estimated in Tables 2. The dependent variable is the loan rate in panel A and the logarithm of the amount of new loans in panel B. The regressions are run separately for large and small banks defined based on the median in the bank size distribution of banks in our sample. We report estimated coefficients for different types of loans. Control variables as in Table 2, as well as bank, month, and year fixed effects, are included but not reported. *, **, *** denote an estimate significantly different from 0 at the 10 %, 5 %, and 1 % level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Loan rates						
		Large banks			Small banks	
	Corporate	Housing	Consumption	Corporate	Housing	Consumption
Election _{t-Q1}	0.022 (0.022)	0.065*** (0.019)	0.015 (0.055)	0.099*** (0.029)	0.123*** (0.019)	0.076 (0.050)
Election _{t-Q2}	-0.036 (0.027)	0.069*** (0.021)	-0.036 (0.058)	0.084*** (0.028)	0.115*** (0.023)	0.105** (0.052)
Election _{t-Q3}	0.026 (0.024)	0.091*** (0.023)	-0.022 (0.057)	0.106*** (0.030)	0.061*** (0.023)	0.082 (0.058)
Election _{t-Q4}	0.047 (0.029)	0.072*** (0.024)	0.006 (0.048)	0.081** (0.038)	0.037 (0.026)	0.070 (0.049)
Control variables	yes	yes	yes	yes	yes	yes
Observations	13,573	12,806	11,600	11,766	10,835	10,817
Number of banks	144	137	130	142	133	133
R ²	0.595	0.782	0.285	0.518	0.713	0.278

D 1		

Panel B: New loans						
		Large banks		Small banks		
	Corporate	Housing	Consumption	Corporate	Housing	Consumption
Election _{t-01}	-0.007	-0.043	0.012	0.011	-0.020	-0.005
	(0.029)	(0.027)	(0.033)	(0.042)	(0.022)	(0.028)
Election _{t-Q2}	0.039	-0.040	-0.029	0.030	-0.068***	0.017
	(0.032)	(0.027)	(0.037)	(0.036)	(0.024)	(0.024)
Election _{t-O3}	0.046	-0.067**	-0.001	-0.020	-0.066***	0.012
	(0.030)	(0.031)	(0.032)	(0.037)	(0.020)	(0.021)
Election _{t-O4}	-0.008	-0.010	0.030	0.065	-0.071***	0.014
	(0.032)	(0.025)	(0.032)	(0.040)	(0.023)	(0.027)
Control variables	yes	yes	yes	yes	yes	yes
Observations	13,577	12,808	11,621	11,772	10,839	10,824
Number of banks	144	137	130	142	134	134
\mathbb{R}^2	0.150	0.275	0.147	0.097	0.308	0.092

3.3 Estimations by bank type

The diversity of ownership structure is a key characteristic of the European banking industry. While commercial banks generally dominate the market in Europe, cooperative banks own a sizeable market share in many countries, including France and Germany. These banks differ from commercial

banks in ownership structure as they are owned by their customers. Furthermore, their business model focuses on providing banking services to households and small local firms. These differences suggest that commercial and cooperative banks might behave differently in election times.

The uncertainty view is ambiguous concerning possible different influence of elections on cooperative and commercial banks. On one hand, cooperative banks have been shown to be more stable thanks to their business model and their ownership (Cihak and Hesse, 2007; Köhler, 2015). As a consequence, they may be less affected by electoral uncertainty. On the other hand, cooperative banks are more specialized in terms of activities, concentrating on households and SMEs. As such, their weaker diversification can make them more sensitive to an increase in uncertainty.

The manipulation view suggests that commercial banks should be more affected by forthcoming elections than cooperative banks, since the ownership structure of the latter ones should better preserve them from political interference.

We investigate whether the influence of elections on lending behavior differs with bank type. As stated above, we differentiate among (i) commercial banks, (ii) cooperative banks, and (iii) other banks (a category that captures all remaining bank types in the sample). We also introduce dummy variables *Cooperative* and *Other type*. The model specification is then augmented to include *Cooperative* and *Other type* and their interactions with *Election* in the estimations.

Table 3 reports the results. The first three columns concern loan rates. We find that the coefficient of the interaction *Election*× *Cooperative* is not significant for any type of loans, meaning there are no significant differences between cooperative and commercial banks in how elections affect loan pricing. We conclude that our sample lacks any evidence that cooperative banks are more affected by uncertainty than commercial banks. Columns 4-6 of Table 5 display the results for new loans. We find that the coefficient of the interaction *Election* × *Cooperative* is also not significant in these estimations.

Overall, we find no differences in the influence of elections on lending behavior of commercial and cooperative banks. This conclusion may be the outcome of two opposing effects which cancel each other. The more stable business model and ownership of cooperative banks can make them less affected by electoral uncertainty than commercial banks while their weaker diversification can leave them more exposed to electoral uncertainty.

Table 3. Estimations accounting for bank type

This table shows estimated coefficients for *Election* dummy variables and bank type dummy variables for regressions indicated in Equation (1) where the dummy variables accounting for bank type are included. The dummy variable *Cooperative* equals one if a bank is cooperative or saving bank. The dummy variable *Other type* equals one for a bank categorized as something other than a commercial, cooperative, or savings banks. The dependent variable is loan rate (columns 1-3) or the logarithm of the amount of new loans (columns 4-6). Both dependent variables are reported for corporate loans, housing loans, and consumption loans. We report estimated coefficients for different types of loans. Control variables as in Table 2, as well as bank, month and year fixed effects, are included but not reported. *, **, *** denote an estimate significantly different from 0 at the 10 %, 5 %, and 1 % level, respectively.

Dependent variable	Loan rate New loan			New loans		
	(1) Corporate	(2) Housing	(3) Consumption	(4) Corporate	(5) Housing	(6) Consumption
Flection of	0.067***	0.096***	0.055	-0.001	-0.054**	0.009
Election _{t-Q1}	(0.023)	(0.019)	(0.053)	(0.034)	(0.024)	(0.032)
Flection	0.014	0.088***	-0.002	0.060*	-0.060***	-0.001
Litetion _t -Q2	(0.029)	(0.020)	(0.053)	(0.032)	(0.023)	(0.034)
Election or	0.057**	0.077***	0.019	0.032	-0.070**	-0.003
Lieetion _{[-Q3}	(0.029)	(0.021)	(0.055)	(0.033)	(0.028)	(0.030)
Election	0.039	0.052**	0.023	0.086***	-0.005	0.017
Election ₁ -Q4	(0.033)	(0.025)	(0.051)	(0.031)	(0.024)	(0.031)
Election _{t-Q1} *Coopera-	-0.007	-0.012	-0.071	0.015	0.040	0.008
tive	(0.039)	(0.030)	(0.078)	(0.059)	(0.036)	(0.044)
Election _{t-Q2} *Coopera-	0.019	0.019	0.073	-0.015	0.032	0.008
tive	(0.043)	(0.036)	(0.082)	(0.054)	(0.037)	(0.044)
Election _{t-Q3} *Coopera-	0.017	0.002	0.003	-0.023	0.044	0.045
tive	(0.045)	(0.037)	(0.095)	(0.055)	(0.043)	(0.046)
Election _{t-Q4} *Coopera-	-0.002	0.002	-0.033	-0.078	0.001	0.013
tive	(0.050)	(0.040)	(0.083)	(0.052)	(0.043)	(0.049)
Flection of *Other type	-0.056	0.017	0.071	0.018	0.058	-0.036
Lieedont-Qi outer type	(0.074)	(0.044)	(0.092)	(0.067)	(0.080)	(0.075)
Election or*Other type	0.030	-0.008	0.085	-0.118*	0.053	0.003
Literation (-Q2 Caller Of PC	(0.063)	(0.044)	(0.107)	(0.070)	(0.081)	(0.076)
Election, ₀₃ *Other type	0.034	0.024	0.024	-0.019	-0.028	0.021
Election _t -Q ₂ other type	(0.062)	(0.064)	(0.123)	(0.075)	(0.089)	(0.073)
Election, 4*Other type	0.206**	0.024	0.050	-0.271**	-0.125*	-0.052
Election _i .Q4 other type	(0.097)	(0.061)	(0.131)	(0.126)	(0.075)	(0.062)
Control variables	yes	yes	yes	yes	yes	yes
Observations	25,339	23,641	22,417	25,349	23,647	22,445
Number of banks	247	235	229	247	236	230
\mathbb{R}^2	0.568	0.754	0.280	0.120	0.272	0.096

3.4 Examining the influence of uncertainty

While elections seem to affect only the amount of housing loans, the results on the pricing of corporate and housing loans show that elections exert a positive influence on their prices. These findings support the uncertainty view whereby banks are driven to increase their loan rates and decrease new lending when uncertainty increases.

Up to this point, we have considered all elections in our sample as similar in terms of uncertainty associated with them. However, the level of uncertainty can vary considerably before elections depending on the country and the time to election. The expectations of economic agents on the economic developments of the country can widely differ depending on the economic programs of parties and their chances of gaining power.

We further question whether greater uncertainty before elections influences the impact of elections on the lending behavior of banks. In presence of higher uncertainty, we expect elections to contribute to higher loan rates and a lower volume of new loans.

We test this hypothesis by examining whether the level of uncertainty affects the impact of elections on lending behavior of banks. To investigate this question, we create a measure of uncertainty available for all countries and all months covered in our study. Utilizing Google Trends data, we develop a measure for political uncertainty around elections. In line with the previous literature (e.g. Castelnuovo and Tran, 2017), our measure is based on an assumption that people seek information online when they are uncertain. Thus, an increased number of web searches should indicate higher uncertainty.

In order to construct our country-specific measure of political uncertainty we use search describing the main national election for each country included in our sample (see Table A3 in the appendix). We use Google Trends data to retrieve the search volumes related to these words for each country and for each month included in our sample. The data, scaled on a range from 0 to 100, represent search interest in proportion to the highest point in the chart for the given country and time. For example, 100 would stand for peak popularity of the term searched during a given period of time.

Our objective is to identify periods of high political uncertainty and to do so we create a dummy variable *Uncertainty_high* based on the Google Trends values for election months. The dummy variable is equal to one for those elections in which Google Trends value in election month was above median value in election months in our sample and zero otherwise. Our estimations consider this high uncertainty measure by including the interactions of the *Uncertainty_high* variable with our quarterly election dummy variables. If we find that the positive effect of elections on loan

pricing and negative impact on new loan amounts are higher in the presence of high uncertainty, the uncertainty view is supported. The results are reported in Table 4.

For loan prices (columns 1-3), the coefficients for interactions are positive in the case of corporate loans, as well as for housing and consumption loans in certain cases. Looking at the amount of new loans we can see strong support for the lower corporate lending and some support for lower lending of housing and consumption loans. Overall, lower amounts of lending are found two to four quarters before elections, while higher loan pricing is also significant just one quarter before an election when uncertainty is high.

Table 4. Estimations accounting for uncertainty

This table shows estimated coefficients for *Election* dummy variables and uncertainty variable *Uncertainty_high* for regressions indicated in Equation (1) where the uncertainty variable is included. The uncertainty variable captures the intensity of public interest in an election in a given country by exploiting the news related to election extracted from Google search data. *Uncertainty_high* is a dummy variable that equals one when the uncertainty related to a certain election before the election has an above-median score when considering the Google Trends measure for election months in our sample. The dependent variable is loan rate (columns 1-3) or the logarithm of the amount of new loans (columns 4-6). Both dependent variables are reported for corporate loans, housing loans, and consumption loans. We report estimated coefficients for different types of loans. Control variables as in Table 2, as well as bank, month, and year fixed effects, are included but not reported. *, **, *** denote an estimate significantly different from 0 at the 10 %, 5 %, and 1 % level, respectively.

Dependent variable		Loan rate	1		New loans	
	(1)	(2)	(3)	(4)	(5)	(6)
	Corporate	Housing	Consumption	Corporate	Housing	Consumption
Election _{t-Q1}	-0.003	0.090***	-0.005	-0.000	-0.036	0.032
	(0.023)	(0.017)	(0.046)	(0.029)	(0.023)	(0.027)
Election _{t-Q2}	-0.027	0.088***	-0.020	0.080***	-0.023	-0.004
	(0.024)	(0.019)	(0.045)	(0.029)	(0.021)	(0.026)
Election _{t-Q3}	0.091***	0.078***	0.096*	0.071***	-0.051*	0.071***
	(0.026)	(0.022)	(0.053)	(0.027)	(0.028)	(0.026)
Election _{t-Q4}	-0.025	0.007	-0.040	0.097**	0.060*	0.127***
	(0.039)	(0.025)	(0.062)	(0.044)	(0.035)	(0.033)
Election _{t-Q1} *Uncer-	0.116***	0.006	0.089*	0.016	0.005	-0.043
tainty_high	(0.023)	(0.018)	(0.046)	(0.029)	(0.023)	(0.030)
Election _{t-Q2}	0.103***	0.010	0.102**	-0.081***	-0.041*	0.007
*Uncertainty_high	(0.025)	(0.018)	(0.046)	(0.028)	(0.024)	(0.030)
Election _{t-Q3} *Uncer-	-0.050*	0.003	-0.145***	-0.093***	-0.016	-0.108***
tainty_high	(0.030)	(0.020)	(0.050)	(0.034)	(0.030)	(0.032)
Election _{t-Q4} *Uncer-	0.166***	0.091***	0.106	-0.128**	-0.146***	-0.214***
tainty_high	(0.062)	(0.032)	(0.083)	(0.059)	(0.053)	(0.052)
Control variables	yes	yes	yes	yes	yes	yes
Observations	25,339	23,641	22,417	25,349	23,647	22,445
Number of banks	247	235	229	247	236	230
\mathbb{R}^2	0.569	0.754	0.281	0.120	0.273	0.098

All of these results are in line with our expectations and provide support for the hypothesis that the level of uncertainty from an upcoming election affects the lending behavior of banks. Therefore, the level of uncertainty matters for how elections impact the lending behavior of banks, providing additional evidence in favor of the uncertainty view.

3.5 Post-election estimations

The results above suggest that banks tend to increase loan pricing and decrease the amount of new lending ahead of elections, especially when economic uncertainty preceding the election is high. So what happens after the election? So far, we have only observed support for the uncertainty view in the run-up to elections. We should thus also expect a reduction in uncertainty after elections that leads to an expansion in the amount of granted loans and a reduction in loan prices. Bank lending behavior should become less precautionary once the electoral outcome is clear.

In this spirit, we examine whether the amounts of new loans and the loan rates change after the elections. We redo the main estimations explaining these variables by adding the same quarterly windows after elections as we use for the period before elections. Table 5 reports the results.

Regarding loan rates, we observe no overall significant results for loan rates concerning corporate loans and consumption loans. However, we find positive and significant coefficients concerning housing loans in the four quarters following elections. When explaining the amount of new loans, we again find significant results for housing loans in the three quarters after the election.

One plausible interpretation of these patterns is the lingering influence of pre-electoral uncertainty. This uncertainty, particularly pronounced in the housing loan market, appears to exert a sustained effect on both loan pricing and the issuance of new loans even after the election is over. Adjustments to loan policies are not instantaneous, so the pronounced pre-election effects in the housing loan segment, in particular, tend to persist.

Table 5. Post-elections estimations

This table shows the results of fixed effects panel regressions as indicated in Equation (1) and reported in Table 2 where the *Election* dummy variables equal one for 1, 2, 3, and 4 quarters before and after elections take place in the country where the bank is headquartered. The dependent variable is loan rate (columns 1-3) or the logarithm of the amount of new loans (columns 4-6). Both dependent variables are reported for corporate loans, housing loans, and consumption loans. Control variables as in Table 2, as well as bank, month, and year fixed effects are included but not reported. Standard errors clustered at bank level appear in brackets below estimated coefficients. *, **, *** denote an estimate significantly different from 0 at the 10 %, 5 %, and 1 % level, respectively.

Dependent vari- able	Loan rate			New loans			
	(1)	(2)	(3)	(4)	(5)	(6)	
	Corporate	Housing	Consumption	Corporate	Housing	Consumption	
Election _{t-Q1}	0.061***	0.129***	0.052	-0.001	-0.045**	-0.000	
	(0.022)	(0.017)	(0.043)	(0.028)	(0.022)	(0.026)	
Election _{t-Q2}	0.023	0.127***	0.038	0.032	-0.055***	-0.003	
	(0.023)	(0.018)	(0.046)	(0.027)	(0.020)	(0.026)	
Election _{t-Q3}	0.071***	0.127***	0.036	0.017	-0.075***	0.005	
	(0.022)	(0.019)	(0.051)	(0.026)	(0.023)	(0.025)	
Election _{t-Q4}	0.070***	0.099***	0.030	0.024	-0.033	0.007	
	(0.026)	(0.020)	(0.042)	(0.028)	(0.020)	(0.024)	
Election _{t+Q1}	0.060***	0.182***	0.068	0.014	-0.056**	-0.048*	
	(0.023)	(0.016)	(0.043)	(0.028)	(0.023)	(0.026)	
$Election_{t+Q2}$	0.008	0.147***	0.017	0.018	-0.067**	-0.007	
	(0.024)	(0.016)	(0.047)	(0.033)	(0.027)	(0.027)	
Election _{t+Q3}	-0.001	0.106***	0.006	-0.058**	-0.051**	-0.025	
	(0.024)	(0.017)	(0.050)	(0.028)	(0.025)	(0.030)	
$Election_{t+Q4} \\$	-0.025	0.068***	0.061	-0.038	0.012	-0.014	
	(0.023)	(0.016)	(0.045)	(0.023)	(0.023)	(0.029)	
Control variables	yes	yes	yes	yes	yes	yes	
Observations	25,339	23,641	22,417	25,349	23,647	22,445	
Number of banks	247	235	229	247	236	230	
\mathbb{R}^2	0.568	0.759	0.280	0.119	0.273	0.096	

4 Conclusion

Our study examines whether elections affect lending behavior of European banks. We ask whether banks change their supply of loans and their loan pricing in the months preceding major national elections. To this end, we employ a unique dataset providing monthly data for amounts and interest rates of new loans for the different types of loans for a large sample of European banks. Two main results emerge from the analysis. First, we find that banks increase loan pricing for corporate loans and for housing loans before elections. This provides support for the uncertainty view, whereby uncertainty rises when the outcome of an election is less certain, causing banks to respond by increasing their loan pricing and reducing new lending. We further show that the positive effect of upcoming elections on loan pricing mainly concerns small banks. Second, we obtain evidence that elections influence the credit supply of housing loans. We find no evidence of the impact of elections on the amounts of new corporate and consumption loans when elections occur with the exception of conditions of extremely elevated uncertainty when we find limited evidence.

These findings provide useful insights by informing about changes in lending behavior of banks linked to the electoral calendar. The influence of elections on loan rates suggests that elections can influence the effectiveness of monetary policy and thereby contribute to heterogeneity across Eurozone countries.

In short, elections affect European banking. Looking to future work, we would ask whether the influence of elections on lending behavior of European banks is perhaps underestimated in the current study. After all, this work concentrates on larger European banks. They are obviously of prime importance when assessing the effects of elections on lending behavior as they control the largest market share in European countries. However, the finding of a greater influence of elections for small banks of our sample suggests that electoral impact on the lending behavior of banks could overall be stronger for Europe's small local banks. Moreover, local elections, in addition to major national elections, could well play a role in this respect.

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Appendix

Table A1. Elections

This table provides information on the elections included in our estimations. The table is based on information from the Database of Political Institutions 2020 (<u>https://publications.iadb.org/en/database-political-institutions-2020-dpi2020</u>) and Election Guide (<u>https://www.electionguide.org/</u>).

Country	System	Election for	Election months
Austria	Parliamentary	Austrian National Council	09/2013; 10/2017; 09/2019
Belgium	Parliamentary	Belgian Chamber of Representatives	06/2010; 05/2014; 05/2019
Cyprus	Presidential	Cypriot Presidency	02/2013; 02/2018
Estonia	Assembly-elected presi- dent	Estonian Parliament	3/2011; 3/2015; 3/2019
Finland	Parliamentary	Finnish Parliament	04/2011; 04/2015; 04/2019
France	Parliamentary	French National Assembly	06/2012; 06/2017
Germany	Parliamentary	German Federal Diet	09/2013; 09/2017
Greece	Parliamentary	Greek Parliament	05/2012; 06/2012; 01/2015; 09/2015; 07/2019
Ireland	Parliamentary	Irish House of Representatives	02/2011; 02/2016; 02/2020
Italy	Parliamentary	Italian Chamber of Deputies	02/2013; 03/2018
Latvia	Parliamentary	Latvian Parliament	10/2010; 09/2011; 10/2014; 10/2018
Lithuania	Presidential	Lithuanian Presidency	05/2014; 05/2019
Luxembourg	Parliamentary	Luxembourg Chamber of Deputies	10/2013; 10/2018
Malta	Parliamentary	Maltese House of Representatives	05/2011; 03/2013; 06/2017
Netherlands	Parliamentary	Dutch Second Chamber	06/2010; 09/2012; 03/2017
Portugal	Assembly-elected presi- dent	Portuguese Assembly of the Republic	06/2011; 10/2015; 10/2019
Slovakia	Parliamentary	Slovakian National Council	06/2010; 03/2012; 03/2016; 02/2020
Slovenia	Parliamentary	Slovenian National Assembly	12/2011; 07/2014; 06/2018
Spain	Parliamentary	Spanish Congress of Deputies	11/2011; 12/2015; 06/2016; 04/2019; 11/2019

Table A2. Descriptive statistics

Dependent variables	Obs.	Mean	Std. Dev.
Corporate loans loan rate	25,339	2.55	1.37
Housing loans loan rate	23,646	2.51	1.02
Consumption loans loan rate	22,422	5.59	2.90
New corporate loans (EUR million)	25,349	732.71	1404.48
New housing loans (EUR million)	23,652	234.91	486.14
New consumption loans (EUR million)	22,450	51.81	115.49
Explanatory variables			
	07 700	00 (77 17	1 < 00 47 20

Total assets (EUR million)	27,708	90,677.47	16,9047.30
Capitalization	27,708	0.09	0.05
Loans to assets	27,708	0.46	0.21
Deposits to assets	27,708	0.39	0.25
Cooperative bank	27,752	0.28	0.45
Industrial production (Y/Y)	27,752	0.88	6.15
Unemployment rate, %	27,752	8.36	4.15
Monetary policy rate change (Eonia) m/m	27,752	-0.0075	0.17
Credit demand (corporate)	27,752	-0.88	2.64
Credit demand (housing)	27,752	0.82	3.96
Credit demand (consumption)	27,752	-1.00	3.15
Political uncertainty index (whole sample)	27,752	3.77	12.35
Political uncertainty index (election months)	27,752	67.88	35.84

COUNTRY	SEARCH TERM
Austria	Nationalratswahl
Belgium	Federale verkiezingen
Cyprus	Προεδρικές εκλογές
Estonia	Riigikogu valimised
Finland	Eduskuntavaalit
France	Elections législatives
Germany	Bundestagswahl
Greece	βουλευτικές εκλογές
Ireland	General election
Italy	Elezioni politiche
Latvia	Parlamenta velešanas
Lithuania	Prezidento rinkimai
Luxembourg	Kammerwahl
Malta	General election
Netherlands	Tweede Kamerverkiezingen
Portugal	Eleições legislativas
Slovakia	Parlamentné voľby
Slovenia	Državnozborske volitve
Spain	Elecciones generales

Table A3. Search terms for Google Trends

BOFIT Discussion Papers

A series devoted to academic studies by BOFIT economists and guest researchers. The focus is on works relevant for economic policy and economic developments in transition / emerging economies.

- 2021 No 1 Eeva Kerola and Benoît Mojon: What 31 provinces reveal about growth in China
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