Politics, Banks, and Sub-Sovereign Debt:
Unholy Trinity or Divine Coincidence?*

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Abstract

We exploit exogenous, election-driven turnover in State and local government in Germany to study how banks react to the loss of political connections. We find that savings banks, whose management local politicians are by law involved in, increase significantly their holdings of sovereign bonds issued by the respective State when the local government and the State government are dominated by different parties. In return, politically misaligned banks are significantly more likely to be bailed out when in distress if they have purchased large quantities of State debt. Our evidence suggests that banks use sovereign bond buying to bridge political distance.

JEL classification: G21, H63, P16.

Keywords: Political connections; government-owned banks; sub-sovereign debt.

1 Introduction

Political connections are valuable to firms. The empirical literature has documented numerous benefits from being a connected firm, such as preferential access to credit (Cull and Xu, 2005; Johnson and Mitton, 2003; Khwaja and Mian, 2005), higher stock returns (Claessens, Feijen, and Laeven, 2008; Faccio, 2006; Goldman, Rocholl, and So, 2009), the ability to influence legislation (Kroszner and Strahan, 1999; Mian, Sufi, and Trebbi, 2010), favorable regulatory treatment (Braun and Raddatz, 2010), and more generous government support when in distress (Faccio, Masulis, and McConnell, 2006; Duchin and Sosyura, 2012). At the same time, while privately beneficial to firms, close relationships with politicians can be associated with substantial economic distortions (Shleifer and Vishny, 1994; Cingano and Pinotti, 2013). This concern is particularly applicable to banks, which the government simultaneously regulates and provides a financial backstop to. Hence, it is important to document the mechanisms through which firms in general, and banks in particular, build political connections, in order to understand both the private benefits and the social costs of such connections.

There already exists a body of evidence that banks invest substantial resources in building political connections, but such evidence is restricted to campaign contributions, lobbying, and direct lending (e.g., Mian, Sufi, and Trebbi, 2010; Lambert, 2015; Gao, Ru, and Tang, 2016). In this paper, we present novel evidence that banks adjust their securities portfolios in an attempt to bridge political distance. We demonstrate a robust new fact: after a loss of political connections due to regional elections, local government-owned banks in Germany increase substantially their holdings of bonds issued by their respective State government. Purchasing newly issued sub-sovereign bonds is tantamount to providing cheap funding to the State government. Because local governments can (and do) issue new debt on a regular basis, banks' holdings of sub-sovereign bonds can be adjusted quickly upwards, without raising the suspicions of bank supervisors because such assets—unlike loans—are zero-risk-weighted. While in Germany sub-sovereign bonds are typically placed privately, and so we do not observe the rates at which they are placed, it is plausible that such placements take place on advantageous terms, constituting a political favor to the State government on behalf of the individual bank. Alternatively, such operations may simply buy banks "face time" with politicians, making them akin to lobbying. While we do not document such dealings explicitly,

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we do show that banks that have in the past acquired large sub-sovereign exposures are more likely to be bailed out when in distress through insurance schemes that involve the State government. Ours is the first paper to document this exchange of political favors between sub-sovereigns and banks.

Isolating one particular motive for purchasing government bonds is challenging because banks can adjust their sovereign bond portfolios for a number of reasons, such as risk shifting, liquidity storage, or "moral suasion".[1] To identify a political-incentives-driven motive to purchase government debt, we exploit the unique dual institutional setting of the German electoral system and of the German banking system. To start with, Germany is a federation which is comprised of 16 States (Bundesländer) and 438 counties (Kreise and Kreisfreie Städte). States and counties holds regular elections to determine the political composition of State parliaments and of the local city councils, respectively. Elections for State parliaments and for local councils take place every four to six years, but typically at different points in time, thus leading to staggered changes in the composition of governing coalitions in States and in counties within States. There are two major parties in Germany, the CDU (Christian Democrats) and the SPD (Social Democrats) that are active at all levels of regional politics. With few exceptions, one of the two parties is always at the head of a governing coalition emerging at the State level (after State parliamentary elections) and at the local level (after county-level elections). Crucially for the purpose of our paper, States in Germany have independent fiscal authority, and all 16 German States issue their own government bonds. Moreover, unlike federal debt, State debt in Germany is typically placed privately rather than by means of a public auction. In practice this means that the State finance ministry and a financial institution agree on the amount and the price of a debt placement in private, without making the terms of the arrangement publicly known.[2]

Turning to the German banking system, we note that it is comprised of private banks, cooperatives, and government-owned banks. There are two types of government-owned banks, local savings banks (Sparkassen) of which there is typically one per county, and nine head institutions (Landesbanken) which operate at the State level. The latter serve as clearing houses for the local

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[1]For a detailed discussion of these mechanisms, see Broner, Erce, Martin, and Ventura (2014), Gennaioli, Martin, and Rossi (2014a), and Ongena, Popov, and Van Horen (2016), among others.

[2]We have inquired with the fiscal authorities in the individual German States and they have confirmed to us that a private placement is indeed the preferred arrangement in all 16 States.

savings banks. Taken together, government-owned banks account for around a third of the German banking market (GCEA, 2014), and are thus an important player in Germany's banking system. Cooperative banks, which resemble Credit Unions in the United States, account for another 14% of the market. Government-owned banks and cooperatives are similar in that—unlike private banks— they have no profit maximizing objectives, but instead have a mandate to serve the community where they operate. However, they differ substantially in that cooperatives are free of political influence, whereas local (county-level or city-level) politicians are appointed to the supervisory board (Verwaltungsrat) of local savings banks. The city mayor or county administrator typically serves as chairman of the bank's supervisory board, a position endowed with a considerable amount of control over the bank. Importantly, the local politician acquires this position *ex officio* after winning a local election, and loses it once his party is no longer in power locally. Thus, the staggered and predetermined timing of State and municipal elections ensures that political alignment or misalignment between a State government and the board of a local government-owned bank emerges exogenously from the point of view of both the State government and the individual bank.

Our identification strategy thus relies on exploiting the exogenous timing of State and county elections to study the propensity of local government-owned banks to purchase State debt after becoming politically misaligned from the State government. The control group are cooperative banks for which election results are irrelevant because local politicians do not sit on their board. We define "political misalignment" as a situation where at the local level, the majority of votes are cast for a party that is different from the one dominating the governing coalition at the State level. Our hypothesis is that politically misaligned government-owned banks will be more likely to purchase State bonds than politically aligned government-owned banks, in an attempt to bridge the political distance to—and later extract political favors from—the State government.

With this identification strategy in hand, we study the State-bond buying behavior of 455 government-owned banks and of 1,227 cooperatives, taking advantage of a total of 32 State elections and 600 county elections between 2005 and 2013. We find that political misalignment is positively and significantly associated with the propensity of local government-owned banks to increase their holdings of sovereign bonds issued by their State. Numerically, an election that causes a local government-owned bank to switch its political status from aligned to misaligned results in an increase in that bank's holdings of debt issued by the respective State government of up to 42% of

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the sample mean exposure, relative to a similar cooperative bank in the same county. Moreover, we find that this effect is mostly generated by political misalignment produced by State elections. This strongly suggests that entrenched politicians sitting on the boards of local government-owned banks react to the loss of political proximity to State authorities by increasing their banks' holdings of debt issued by their State.

The main result still obtains when we include bank fixed effects, which control for unobservable time-invariant motives to hold a particular bond class. It also remains robust to including County×Quarter fixed effects in order to wash out all unobservable variation in State-issued bond holdings that is common to all banks in the same county at the same point in time. It continues to obtain when we only compare local savings banks in politically aligned versus misaligned localities, to account for the possibility that local Cooperatives are not an appropriate control group. It also survives in tests where we compare individual banks' bond holdings across 187 contiguous counties separated by State borders, in cases when one State-county misalignment occurs at a different time than in a neighboring county across the State border.[3]

Importantly, the statistical association between political misalignment and bond buying disappears in placebo tests where we move the timing of State elections by 1, 2, or 3 years around the true election date. We also find that local government-owned banks in politically misaligned counties are not more likely to increase their holdings of German federal debt, of debt issued by other German States, or of a broad class or stocks. The totality of our results suggests that our tests indeed capture a genuine electoral effect on local government-owned banks' propensity to hold bonds issued by their own State.

Our empirical strategy allows us to cleanly eliminate all other alternative mechanisms that could be leading banks to increase their sub-sovereign bond holdings, by making sure that they are either unlikely or that they yield the opposite prediction. In particular, our results cannot be driven by regulatory compliance or by liquidity considerations as these would lead banks to pile up on federal German bonds which are fully risk-free, perfectly liquid, and widely available. Our results are also not driven by asset substitution (risk shifting) as no German state has ever been even remotely close to defaulting on its debt. Finally, our results are inconsistent with "moral suasion" because

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[3]These counties are adjacent neighbors and thus similar in both observable and unobservable conditions, allowing us to relate election outcomes and bank bond buying while holding local unobservable background forces constant.

this mechanism would lead politically *aligned* banks—i.e., local government-owned banks that the State government can exert pressure on via the channel of political party affiliation—to increase their holdings of State debt.

We next ask, what are the political benefits to banks of purchasing State bonds? There are two such potential benefits suggested by prior research. The first one is access to bailout funds in times of distress (Faccio, Masulis, and McConnell, 2006). The second one is higher risk taking by banks made possible by laxer supervision of politically connected banks (Horvitz and Ward, 1987). To test the first hypothesis, we study the statistical association between political alignment, local government ownership of banks, State debt holdings, and the incidence of bank bailouts. We find that a local government-owned bank is more likely to be bailed out if it operates in a county that is currently politically aligned, confirming the benefit from political alignment along party lines. We also find that banks on average are more likely to be bailed out if they hold relatively larger State bond portfolios. Crucially, we find that local government-owned banks in misaligned counties receive significantly more bailout funds, compared to local government-owned banks in aligned counties, if such banks hold relatively large amounts of State debt. This result suggests that indeed local government-owned banks whose bailout involves State representatives, have a particularly strong incentive to increase their holdings of sovereign debt issued by the respective State.[4] We thus confirm the intuition that providing funding to the State by purchasing its debt is indeed tantamount to buying "bailout insurance" which is considerably more valuable to banks whose political connections with the State along party lines have been severed by electoral turnover. At the same time, we do not find evidence that politically misaligned banks increase their risk taking after acquiring a larger State bond portfolio, for a wide range of empirical proxies for bank risk taking, rejecting the hypothesis that by purchasing State bonds, banks are paying for laxer supervision of their activities.

Our paper adds to the empirical literature on the impact of political factors on bank performance and business decisions. For example, Agrawal and Knoeber (2001), La Porta, Lopes-de-Silanez, and Shleifer (2002), Sapienza (2004), Dinc (2005), Khwaja and Mian (2005), Faccio (2006), Faccio, Masulis, and McConnell (2006), Leuz and Oberholzer-Gee (2006), Micco, Panizza, and Yanez

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[4]This is true both in the case of a bailout using public funds, and in the case of a bailout through local insurance schemes whose boards State politicians sit on in their capacity as owners of insurance-scheme member banks. We discuss these mechanisms in more detail in Section 5.

(2007), Claessens, Feijen, and Laeven (2008), Li, Meng, Wang, and Zhou (2008), Goldman, Rocholl, and So (2009), Mian, Sufi, and Trebbi (2010), Shen and Lin (2012), Carvalho (2014), Schoors and Weill (2015), and Englmaier and Stowasser (2017) exploit variation across countries, or across regions within a country, and show that government ownership reduces bank profitability and that political favors arise through government banks, either in the form of cheaper lending in politically preferred regions or increased lending in election years. Another strand of this literature deals with political determinants of bank behavior that are unrelated to direct ownership. For example, Kroszner and Strahan (1999) document that special interests affected the timing of the removal of barriers to entry in the U.S. banking industry. Agarwal, Amromin, Ben-David, and Dinc (2012) show that during the recent financial crisis, banks delayed foreclosures on mortgages located in U.S. districts whose representatives in Congress were members of the Financial Services Committee. In addition, a number of papers provide evidence that politicians in power routinely delay bad news about problems in the banking sector, both in developing and in industrialized countries (e.g., Brown and Dinc, 2005; Imai, 2009; Liu and Ngo, 2014). Our paper adds to this literature by demonstrating that banks have an incentive to load up on sovereign debt in order to compensate for the loss of a direct political link to the fiscal authority responsible for bailing out banks that are close to default. Moreover, to the best of our knowledge, ours is the first paper to investigate banks' political incentives in the case of *sub-sovereign* debt.

Our paper also complements a growing empirical literature that studies how bank holdings of sovereign bonds—and in particular, the "home bias" in such holdings—adjust in times of fiscal stress, and how the real sector is affected by this adjustment.[5] Studying banks active in a large number of countries, Gennaioli, Martin, and Rossi (2014b) find that during sovereign defaults banks increase their holdings of sovereign debt and subsequently tend to lower their lending. Focusing on the European sovereign debt crisis, Popov and Van Horen (2015) show that non-GIIPS banks exposed to impaired sovereign debt contracted their (cross-border) lending. De Marco (2014)

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[5] A number of recent theory papers have modeled the sovereign-bank "doom loop", arguing that domestic banks have an incentive to purchase domestic sovereign bonds in times of fiscal stress because they expect to be bailed out, partially or fully, in the event of a sovereign default (e.g., Acharya, Drechsler, and Schnabl; 2014; Broner, Erce, Martin, and Ventura, 2014; Cooper and Nikolov, 2013; Crosignani, 2015; Farhi and Tirole, 2014; and Uhlig, 2013). Alternative theoretical mechanisms for the propensity of domestic banks to hold domestic sovereign debt are proposed in Gennaioli, Martin, and Rossi (2014a) where domestic banks choose to hold domestic sovereign bonds for liquidity reasons, and in Acharya and Rajan (2013) where banks choose to increase their holdings of domestic public debt in the presence of financial repression in the form of a tax on real investment.

finds that both GIIPS and non-GIIPS banks exposed to peripheral sovereign debt, contracted their lending more. Acharya, Eisert, Eufinger, and Hirsch (2014) find that banks' high balance sheet exposures to impaired sovereign debt had a negative effect on firm growth. Several papers in this literature have studied the different channels that can explain why banks increase their holdings of sovereign bonds in times of financial or fiscal stress. Using bank-level data on banks' borrowing from the European Central Bank (ECB), Drechsler, Drechsel, Marques-Ibanez, and Schnabl (2016) find that during the European sovereign debt crisis, banks from both core and periphery countries engaged in risk-shifting, with weakly capitalized banks borrowing more and pledging riskier collateral to the ECB. Furthermore, Acharya and Steffen (2015) show that GIIPS and in particular non-GIIPS banks engaged in carry-trading by funding themselves short-term in wholesale markets to buy sovereign bonds issued by countries under fiscal stress. They argue that this behavior can be explained by regulatory capital arbitrage, risk-shifting and "moral suasion" incentives. Buch, Koetter, and Ohls (2016) show that high-risk sovereign debt exposures increase the risk of commercial banks in Germany. Relative to these papers, we exploit a set-up where sovereign debt is risk-free, we focus on a political-incentives-based mechanism relating governments, banks, and sovereign debt, and we look at sub-sovereign rather than sovereign debt.

The remainder of the paper is organized as follows. Section 2 describes the data. Section 3 presents the empirical methodology. Section 4 provides the main test of the link between political connections (or the lack thereof) and sub-sovereign bond holdings, alongside an exhaustive battery of robustness tests. In Section 5, we investigate the benefits of State bond purchases. Section 6 concludes.

2 Data: Sources and patterns

2.1 Elections and political power

Data on the outcomes of State parliament election results are readily available from the German Federal Statistical Office. Figure 1 illustrates the staggered timing of both State- and county-level elections per Bundesland. The figure also indicates color-wise the lead party of the emerging coalition forming the states' governments, as well as the party with the most cumulative votes during county elections. For each State, the upper band depicts the occurrence of a State parliament

election, which is held every four to five years, yet at different points in time across States. We show the name or names of the parties winning the election and forming a coalition. The first abbreviation and the color of the band indicates the senior partner in these coalitions. CDU are the Christian Democratic Union, a conservative party. SPD abbreviates the Social Democratic Party. The Green party signature mark is the representation of ecological interests. Other parties are the liberal party FDP (Free Democratic Party), the socialist party Die Linke, and other regional interest groups that occasional are part of coalitions at the state level.[6]

The lower band depicts, in turn, for each state the occurrence of county-level elections. These elections are held usually in each county within each state at the same time to determine the local council of politicians. Oftentimes, these elections are also held together with the election of the mayor of larger cities. We collect data on the votes cast per party from State Statistical Offices for 438 counties and show the party with the most cumulative votes in Figure 1. Given the number of counties and local elections per State during our sample period, we observe a total of 600 county elections.[7]

Figure 2 shows the corresponding map of German counties for each year between 2004 and 2013. It illustrates graphically the change in the distribution of aligned and misaligned counties, where dark-colored counties are those where the majority of votes at the county level are cast for the same party that is also in power at the State level, and light-colored counties are those where the party receiving most votes at the county level is a different party than the one in power at the State level.[8]

Consider as an example the case of North Rhine-Westphalia, the most populous State in Germany, situated in the mid-West of the country. Figure 1 shows that the State parliament elections in 2005 were won by the CDU, which formed a coalition with the FDP. In county elections in 2009, the CDU also received consistently the most cumulative votes, but less so than during the previous county elections, possibly indicating increasing disagreement among local citizens with State

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[6]Such as, for example, the Südschleswigsche Wählerverband (SSW) in the northern state of Schleswig-Holstein who represent the interests of the Danish minority on German territory. Note that the CSU, the Christian Socialist Union, is the sister party of the CDU and only active in the state of Bavaria. Together, CDU and CSU form one (conservative) faction in the federal parliament ("Bundestag").

[7]For example, there are 26 counties in Hesse, and 2 local elections between 2005 and 2013—one in 2006 and one in 2011—for a total of 52 county elections. See Figure 1 and Table 1 for details.

[8]In 2010, the Green party won the largest share of the vote in the State of Baden-Württemberg, and formed a ruling coalition with the CDU. Because there are is not a single county in Baden-Württemberg that is dominated by the Green party, we classify CDU-dominated counties as aligned, and SPD-dominated ones as misaligned after 2010.

politics conducted by the conservative cabinet led by Jürgen Rüttgers from the CDU. Accordingly, the map in Figure 2 shows that during the county elections of 2009, the number of misaligned counties increased. The subsequent State parliament elections in 2010 were won by the SPD, which formed a coalition with the Green party. The State election of 2010 then illustrates that the switch of State government leadership from CDU to SPD renders formerly misaligned, SPD-run counties aligned, as shown in dark blue in the map of 2010, while formerly aligned, CDU-run counties become misaligned, as shown in light blue in the map of 2010.

Table 1 shows the number of counties per state, together with the share of misaligned counties, in each year between 2004 and 2013. The distribution of misaligned counties varies considerably across both time and geographical regions, from a low of 0 percent (e.g., Schleswig-Holstein in 2006 and 2007) to a high of 100 percent (e.g., Hessen in 2008). On average, 34% of counties are misaligned throughout the sample period. This high degree of regional variation bodes well for the identification of the effect of political misalignment on state bond buying by local banks.[9]

Table 2 confirms that the distribution of aligned and misaligned regional politics is mirrored at the bank level. The table distinguishes between government-owned savings banks and our control group of local cooperatives.[10] Pooled across all quarters between q4:2005 and q4:2013, the share of savings banks domiciled in aligned counties is 41.2% compared to 37.4% among local cooperative banks. As shown by the bank-quarter observations aggregated per year, this share is increasing over time, possibly reflecting a more synchronized voting behavior in State and county elections that are increasingly often held at the same time towards the end of our sample period (see Figure 1).

2.2 State debt and other securities

To gauge the propensity of local savings banks to hold bonds issued by their home State on their securities portfolios, we need to observe the detailed bond holdings of banks. To this end, we first obtain from Bloomberg all active and inactive fixed income securities issued by German government entities. Since q4:2005, the quarter in which the security holding statistics of individual banks

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[9]We acknowledge the fact that the three city-states in Germany—Berlin, Bremen, and Hamburg—cannot be misaligned by construction (there is only one county in Berlin and in Hamburg and two in Bremen). We address this point in a robustness test later on.

[10]Note that we only consider regional savings and cooperative banks given our focus on the political distance between county and State politics and exclude central head institutions of either banking sector.

become available, there are 3,021 such securities, of which 793 are federal bonds, 5 are bonds issued by one or more cities, and the majority of 2,223 bonds are issued by State governments.

We combine this information with data from the security holdings statistics (SHS) of Deutsche Bundesbank ("Depotstatistik"), which provides ISIN numbers, volumes, market and notional values per security on a quarterly basis. The SHS data includes more than 5,000 government debt securities.[11] Therefore, contrary to previously employed sources of sovereign exposures at the bank- or country-level, such as the European Banking Authority and the Bank for International Settlements, we consider the security holdings of all universal banks operating in Germany between 2005:Q4 and 2013:Q4.

The upper panel in Table 3 shows for a range of mean shares of bonds issued by the State in which the local government-owned savings banks and cooperative are located. Overall, the share of own State debt among German banks is very small. Relative to gross total assets (TA), both the average savings and the average cooperative bank hold very little sub-sovereign debt from their home State, namely 6 and 11 basis points, respectively. This small share reflects in part the lending rather than the investing focus of these banks' investment strategies. Yet, also relative to the entire bond portfolio these shares remain at 31 basis points for cooperative and at 63 basis points on average amongst savings banks.[12]

Two aspects are important to note here. Given the depth of the market for (risk-free) federal German debt, one might wonder why local banks are holding on to State debt to begin with. State debt is occasionally rated slightly worse than AAA or not at all (see Appendix Table 2) while not offering significantly higher coupons. Thus, these small shares are plausible in and of themselves and their holdings might in fact very well capture "endearment" motives on behalf of some government-owned banks.

The second explanation relate to a fairly skewed distribution of holdings across local government and savings banks. Since the start of the sample period in 2005 the share of local savings banks with some exposure to sub-sovereign debt grew from 20% to 37% at year-end 2013. The corresponding development amongst local cooperative banks exhibits a similar trend, but is less pronounced (from

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[11]Note that the term "book value" used in the SHS database reflects the value according to German accounting rules in the hold-to-maturity portfolio rather than mark-to-market valuation of nancial securities. A detailed description of the SHS database is Amann, Baltzer, and Schrape (2012).

[12]Appendix Table 1 provides information on all variable definitions and sources.

7% to 17%, see Appendix Table 3). Over the entire sample period, the average local savings bank holds 2.5 million Euro in own State debt, with a mean size in terms of TA on the order of 2.5 billion Euros. The average local cooperative bank is somewhat smaller, around 0.6 billion Euro in total assets, and also holds only 0.5 million Euro in own State debt (Appendix Table 4).

Importantly, State debt is rarely if at all auctioned publicly. We made formal inquiries with the finance ministries of all 16 German states, and we were informed that a private placement—whereby the state and a financial institution agree on the amount and the price of a debt placement in private, without making the terms of the arrangement publicly known—is the preferred mode of placing new State debt in the market for all 16 States. This lends empirical support to our underlying conjecture that banks can volunteer to provide funding to the state by purchasing its debt at advantageous prices, something that is not possible in the case of German federal debt which is issued by means of a public auction. Admittedly, however, we do not observe the terms of these private placements.

2.3   Quarterly and annual bank control variables

We also include information on an exhaustive list of standard bank-specific characteristics—such as assets, capital, stock and cash holdings, etc.—both at the quarterly and the annual level. The former data are obtained from the monthly balance sheet statistics, whereas most annual proxies come from micro-prudential reports on asset quality and funding details, as well as on profit and loss accounts, which are submitted to the Bundesbank at annual frequency only. The middle and the bottom panel in Table 3 provide descriptive statistics of these controls. In the empirical tests, all covariates are lagged by one period.

3   Empirical methodology and identification

The goal of this paper is to study whether political alignment between a local bank's supervisory board and the State government explains the bank's tendency to load up on sub-sovereign debt. To this end, we exploit quarterly data on the change in the bank's stock of bonds issued by the State government. The quarterly frequency of the data allows us to employ a difference-in-differences type of methodology whereby we compare banks that are more likely to banks that are less likely

to have an incentive to increase their stock of State debt, in order to make up for the decline in political proximity following State or local elections.

We exploit three features of the German institutional environment to identify the effect of political alignment between regional and state governments. First, there are two major parties in Germany, the CDU and the SPD, which dominate the ruling coalitions at both State and local levels of government. Second, there are 16 federal States, all of which issue bonds, and 438 counties. State parliament elections and elections of mayors and/or councils at the county level take place every four to six years, but at different points in time, resulting in staggered changes in the political alignment between governing coalitions at the State and at the local level. Third, the German banking system is almost evenly split into three segments: private, cooperative, and savings banks. Local savings banks are owned by the counties where banks are domiciled, and members of the local ruling coalition (e.g., the mayor of the city) typically sit on the bank's supervisory board. The local savings bank sector accounts for 422 out of the 1,669 universal banks in Germany (GCEA, 2014), with an aggregate market share on the order of 14% under management. In addition, head institutions—so-called Landesbanken—account for another 17% of market share.[13] Cooperative banks, on the other hand, have no politicians on their boards, but they have the same objectives as savings banks, namely, to serve their community rather than to maximize profit.

We start by identifying, for each of the 438 counties nested in the 16 federal States those instances when a county became politically misaligned as a result of State or municipal elections that produced coalitions dominated by different parties at the two levels of government. Regardless of whether a political misalignment arose following State or county elections, we treat all banks in a county as aligned if the state government is led by the same party that received the most votes at the county level. We consider a county—and, accordingly, all banks domiciled in it—as misaligned if the two governments are dominated by different parties. The 32 State parliament elections and 600 county elections observed over the period 2005–2013, translate into 1,183 instances in which a county and its respective State switched their status from aligned to misaligned, or the other way round.

The second step in our identification strategy exploits the idea that unlike cooperatives, local

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[13]In our empirical analysis, we exclude all Landesbanken. These are very large and they are directly under the influence of the State government. As such, they may be subject to political considerations directly at the State level.

government-owned banks in misaligned localities have an incentive to bridge the political distance to the State government. One potential reason is that government-owned banks are in general more likely to be bailed out by the State, which extends explicit guarantees to those, than cooperatives to which no public safety net is explicitly extended. Moreover, we assume that a local government-owned bank is more likely to be bailed out by the State—either with public funds or through the State-wide insurance scheme—if the governing coalition in the State and in the local administration, whose members sit on the board of the bank, are from the same party. Conversely, political misalignment reduced the probability that a local government-owned bank close to default would be bailed out, as State politicians may prefer to ignore or even "punish" local politicians from the opposite party. Therefore, a local government-owned bank in a misaligned county will have an incentive to purchase State-issued debt at advantageous prices as political favor that could be returned in the future in the form of bailout funds when the bank is in distress.

By means of an example, consider the Sparkasse in the county of Duisburg, which is located in the State of North Rhine Westphalia. During the county-level elections held in 2009, the local constituency of Duisburg cast most votes for the SPD, thus becoming politically misaligned with the CDU-dominated governing coalition at the State level. In the neighboring county of Düsseldorf, as in most other counties within the State, the CDU won the local elections in 2009. The next State parliament elections were held just one year later in 2010, during which the SPD received almost exactly as many votes as the CDU. Together with the Green party, the SPD formed a coalition under the leadership of Hannelore Kraft as the new prime minister. From the point of view of our identification strategy, in 2010 the banks operating in the county of Duisburg switched to aligned, and the banks operating in the county of Düsseldorf switched to misaligned, given the change of guard in the State capital.

Our identification strategy is based on a difference-in-difference estimation whereby we compare the propensity of local government-owned banks to change their holdings of sovereign bonds issued by their State in response to changes in political alignment, relative to the control group of cooperative banks. Exploiting this identification mechanism, we model the total holdings of own sub-sovereign debt (relative to total assets) by bank b domiciled in county k in state s during quarter t as follows:

$$State\ debt/Assets_{bkst} = \alpha_b + \beta_{kst} + \gamma Misaligned_{kst} \times Government-owned_b + \delta X_{bkst-1} + \varepsilon_{bkst} \quad (1)$$

$State\ debt/Assets_{bkst}$ is the ratio, during quarter t, of the total stock of sovereign bonds issued by State s and held by bank b in county k in State s, to bank b's total assets. In robustness checks, we scale bank b's total holdings of bonds issued by the home State s by bank b's total security portfolio including stocks and any fixed income security as well as by bank i's total bond holdings, regardless of the issuer. $Misaligned_{kst}$ is a dummy variable equal to one if during quarter t, the local government in county k and the state government in State s are dominated by different parties. The variable equals zero if SPD or CDU are in power both in the county and in the State at time t. $Government-owned_b$ is a dummy variable equal to one if bank b is a savings bank owned by the local government. X_{bkst} is a vector of time-varying bank-specific control variables, such as assets, cash, loans, capitalization, profitability, etc. Finally, and crucially, we include a vector of bank fixed effects α and a matrix of County×Quarter fixed effects. The former allow us to net out the effect of unobservable bank-level characteristics, such as propensity to take risk or managerial quality, that might be fixed over a long period of time and thus explain a large part of the cross-sectional variation in state bond holdings across banks. The latter wash out any variation in the bank's propensity to hold sub-sovereign bonds issued by the State that is common to all banks in the same county at the same point in time. Identification therefore comes from comparing the behavior of government-owned and of cooperative banks in the same county during the same quarter, in politically aligned relative to politically misaligned counties. We specify two-way clustered standard errors at the county and quarter level (Petersen, 2009). We estimate Model (1) using OLS, but we also show that the main result in this paper is robust to employing non-linear regression models (see Appendix Table 5).

Our coefficient of interest is γ. In a classical difference-in-differences sense, it captures the difference in the propensity to hold bonds issued by the State between local government-owned banks (the treatment group) and local cooperative banks (the control group), in politically misaligned versus politically aligned municipalities. A positive coefficient would imply that—all else equal, and relative to cooperatives—government-owned banks hold more bonds issued by their State in

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municipalities where the local administration is dominated by a different party from the one in power at the State level. The numerical estimate of γ captures the difference in the overall holdings of State debt between aligned and misaligned counties induced by switching from the control group to the treatment group.

4   Politics, banks, and sub-sovereign debt: Empirical results

4.1   Main result

The headline results of the paper are reported in Table 4 where we estimate empirical model (1) with different combinations of bank-level controls and fixed effects. In column (1), we start by estimating a simplified version of the model, without any control variables and without any fixed effects. The lack of bank fixed effects and of County×Quarter fixed effects allows us to include the individual components of the main interaction variable $Misaligned \times Government-owned$. The results show that local government-owned banks exhibit on average higher home bias at all times, compared to local cooperatives. Our results also imply that both government-owned banks and private cooperatives in politically misaligned municipalities are more likely to hold sub-sovereign bonds issued by their own State. Crucially, the coefficient on the interaction term $Misaligned \times Government-owned$ is positive and significant, suggesting that local government-owned banks in politically misaligned counties are considerably more likely to load up on own State bonds, relative to local cooperatives, than local government-owned banks in aligned counties. This effect is significant at the 1 percent statistical level.

Clearly, this effect might simply reflect some other unobserved bank trait. In column (2), we therefore add bank-specific controls observed with quarterly frequency. Crucially, the point estimate on $Misaligned \times Government-owned$ is still positive and significant at the 1 percent statistical level. Regarding individual covariates' point estimates, we find the following. Larger banks, as measured by the log of total assets, are more likely to hold bonds issued by the home State. One possible explanation is that to begin with, only the larger local banks have sufficient capacity in their investment portfolios to hold State bonds (instead of federal bonds) for conventional reasons, such as demand for collateral, a store of liquidity, etc. Related, we find that banks with larger shares of completely different asset classes relative to total assets are also less likely to hold sib-sovereign

debt. Specifically, the total assets shares of cash (a store of liquidity) and stocks (an alternative form of security-driven revenue) are significantly negative as well. Banks with different approaches to store liquidity and seek alternative non-lending sources of revenue but fixed income thus are also less likely to invest in State bond holdings.

At the quarterly level, we also observe for each bank the share of corporate, household, and foreign non-financial firm lending relative to total non-financial firm lending. The omitted category are loans to the non-profit and government sector, relative to which all banks are also less likely to hold own States' bonds. The coefficients on these three categories are all statistically negative. The effect of the foreign lending share is the largest, which might suggest that in particular those banks with the most non-domestic exposure are also significantly less likely to hold State bonds. Intuitively, the more internationally active banks are also those that seem least inclined to engage in local and State politics, possibly because such positions do not provide an effective bailout protection anyway.

One limitation of the monthly balance sheet statistics, from which we observe bank-specific traits, is the lack of sub-annual profit and loss account reporting among German banks. Therefore, we specify in column (3) an additional vector of covariates observed with annual frequency. More core capital, higher profitability, lower fee income, larger liquidity buffers, as well as less inefficient operations all correlate positively with own State bonds. These patterns would thus be inconsistent with a lower need for building political connections due to bleak prospects among banks with more stable financial profiles. An alternative interpretation of these annual covariates' effect is, however, that banks with larger capital and liquidity buffers lack sustainable investment opportunities in their local markets. Likewise, the negative effect of a higher fee-income share may simply indicate that certain banks' business models, like credit- or advisory-based ones, lead banks to hold generally fewer securities, including those issued by their own State. And finally, higher cost-to-income ratios, conventionally interpreted as an indicator of inefficient management, correlate positively with own State bond holdings. The main effect still obtains, as suggested by the still positive and highly significant effect on the interaction of $Misaligned \times Government - owned$.

In this specification, we find that the difference in own State bond holdings between government-owned banks and cooperatives in aligned localities is no longer significantly different from zero. At the same time, the coefficients on the variables $Misaligned \times Government - owned$ and $Misaligned$

imply that the difference in own State bond holdings between government-owned banks and cooperatives in misaligned localities is 4 basis points. This magnitude corresponds to an increase by 37% given a mean share of 10.8 basis points (see Table 3). Thus, even these very small shares respond markedly in relative terms to the exogenous rupture of political ties between local and State politics. At the same time, cooperative banks in misaligned localities on average have 1.4 basis points higher holdings of own State debt, suggesting that the diff-in-diff coefficient should not be interpreted in the sense of cooperatives reducing their holdings of own State debt following political misalignment.

In column (4), we introduce bank fixed effects and quarter fixed effects. The combination of controls and fixed effects in tis regression explains about 47 percent of the variation in state bond holdings, and the magnitude of the coefficient on the interaction variable, as well as its significance, are practically unaffected. In column (5), we include quarterly bank controls, in addition to bank fixed effects and County×Quarter fixed effects. The latter wash out the effect of all unobservable time-invariant bank characteristics and of local economic conditions common to all banks in a municipality at the same point in time. In this fully saturated specification, the point estimate on the interaction term $Misaligned \times Government-owned$ is still positive and significant at the 1 percent statistical level. Numerically, it declines by 0.9 basis points relative to the estimate in column (4), suggesting that indeed economic conditions at the level of the county that are common to both government-owned and to cooperative banks explain a substantial portion of the variation in State bond holdings. We also find that the combination of control variables and fixed effects explains around 57 percent of the variation across banks in state bond holdings. The magnitude of the main effect of interest declines further in our preferred specification in column (6) where we add the annual covariates, but it remains significant at the 1 percent statistical level.[14]

The estimates reported in Table 4 unequivocally fail to reject the null hypothesis that local government-owned banks do not increase—more than cooperatives—their holdings of State-issued debt in order to make up for the loss of political connections when the local government is dominated by an opposite party from the party in power at the State level. Thanks to our empirical design, the main result is inconsistent with the "moral suasion" mechanisms whereby banks in aligned localities

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[14]We are estimating Model (1) using OLS. Appendix Table 5 demonstrates that the main result in this paper is robust to employing non-linear regression models to account for the structure of the bond holding data, such as Tobit, Probit, Logit, and Poisson models.

should be *more* likely to purchase more State-issued bonds if the authorities at the State level need their fellow party members on the board of local savings banks to push for the provision of fresh funds for pet infrastructure projects. It is also not immediately related to the "risk shifting" channel because even though government-owned banks typically have a higher incentive than private banks have to shift risk, the assets in question are practically risk-free. Finally, it is inconsistent with the "liquidity storage" mechanism: if government-owned banks have a higher incentive to store liquidity in State bonds, this incentive should not be affected by the political connections of the bank's board.

4.2   Falsification tests

The mechanism we aim to uncover is related to the propensity of local government-owned banks—relative to local cooperative banks with similar non-profit-maximizing objectives—to engage in a behavior that has three components: 1) they are purchasing sub-sovereign bonds; 2) these bonds are issued by the government in their own State; and 3) this tendency increases after elections that produce a political misalignment between the local and the State government.

To make sure that we are indeed picking up this mechanism, in Table 5 we conduct a number of falsification tests. We first test for differences in the propensity of local government-owned versus private banks, in misaligned versus aligned localities, to purchase *federal* sovereign bonds. If political considerations increased government-owned banks' incentives to acquire sovereign debt *per se*, they would clearly do so by increasing their holdings of German bunds, too. We find that there is no statistical difference in the behavior of local government-owned banks and of local cooperatives, in aligned versus misaligned localities, with respect to their holdings of German federal bonds (column (1)), suggesting that the difference in behavior we have documented so far is restricted to the elevated propensity of government-owned banks in misaligned localities to purchase State bonds. Moreover, in column (2), we find that relative to cooperatives, government-owned banks in misaligned localities are not more likely than government-owned banks in aligned localities to purchase sub-sovereign debt issued by other German states. This finding lends further support to the idea that political misalignment is only costly to local government-owned banks when it involves a rupture along party lines with the government in the home State.

We perform two further placebo tests. In column (3), we fail to reject the null hypothesis that

government-owned and private banks do not differ, across aligned and misaligned localities, in their propensity to hold common stocks. This suggests that indeed, elections which change the political alignment between States and individual municipalities do not affect banks' incentives to adjust their portfolio beyond own sub-sovereign debt securities.

Finally, in column (4), we test for whether our dating of election-driven changes in political alignment are indeed the driving force between banks' adjustment in state-issued bond holdings. In particular, we pretend that elections took place one year earlier than their actual dates and find that the differential effect of political misalignment across government-owned and private banks vanishes. Appendix Table 6 further shows that the placebo pre-dating of elections also yields insignificant results for lags of 2 and 3 years.

The results in Table 5 thus lend further support to the idea that local government-owned banks increase their holdings of debt issued by their State only when they need to make up for the loss of political protection from the State.

4.3   Sample selection and alternative channels

Our identification strategy is based on exploiting the fact that some government-owned banks experience a negative shock to their political connections as a result of elections which result in governing coalitions at the State and at the county level that are dominated by different parties. This strategy allows us to control for both unobservable time-invariant and observable time-varying bank characteristics that can impact the decision of banks to buy sub-sovereign bonds issued by their home State in a particular quarter, while at the same time controlling for unobservable time-varying county-specific factors that can impact all banks active in a particular county, such as investment opportunities. However, there can still be lingering concerns regarding the validity of our control group, and related to the possibility that at the same time when political alignments change as a result of elections, some government-owned banks are facing concurrent shocks to their propensity to increase their holdings of home sub-sovereign bonds—unrelated to political distance—that other banks are not experiencing. We address these in Table 6.

In column (1), we account for the possibility that government-owned banks (the treatment group) and cooperative banks (the control group) may not be sufficiently similar across observable characteristics, a hypothesis reinforced by the difference in means reported in Table 3. In prin-

ciple, we control for these differences by including time-varying bank controls and we control for unobserved bank-specific time-invariant heterogeneity by including bank fixed effects. However, to account for the fact that variables such as bank size and capital adequacy can potentially predict a bank's propensity to load up on sovereign bonds, we also estimate our model using a sample which is chosen based on a Propensity Score Matching procedure. In practice, we calculate a propensity score for each bank's likelihood of being government-owned versus private, based on a range of bank-specific controls. We next reduce the sample of private banks to the subset that is most similar to the sample of government-owned banks. The estimates show that even within the matched sample, and compared to private banks, government-owned banks in misaligned localities hold a significantly larger stock of State bonds than government-owned banks in aligned localities.

In column (2), we further account for the possibility that cooperative banks are not a valid control group for government-owned savings banks. We have so far argued that they are a valid control group because, unlike private banks, and similar to savings banks, cooperatives are driven by non-profit-maximizing motives, yet their governance structure distances them from local political considerations. However, they could in theory have objectives unobservable to the econometrician that introduce a political motive for their sub-sovereign bond holdings. To alleviate such concerns, in column (2) we exclude cooperative banks altogether and modify Model (1) to simply compare the behavior of local savings banks at the same point in time across aligned and misaligned localities. The point estimate from this test suggests that relative to savings banks in aligned localities, savings banks in misaligned localities have State bond holdings higher by 0.31 of a sample standard deviation, and this effect is significant at the 1% statistical level. We conclude that differences in State bond holdings across local government-owned banks must indeed be down to the need to build political connections with the State government in the face of exogenous shocks to such connections brought about by election results.

We next note that in 2007 and 2008, five Landesbanken (Sachsen LB, West LB, Bayern LB, and Landesbank Baden-Württemberg, and HSH Nordbank) that had invested substantially in the U.S. subprime mortgage market before the financial crisis, declared significant losses. Because savings banks in the respective federal States were required by law to provide support to their respective Landesbank (for details, see Puri, Rocholl, and Steffen, 2011), they became at the time less likely to engage in other activities, such as making loans or purchasing securities. In column (3), we

account for this shock by including an interaction between the government-owned dummy and a dummy equal to one if the bank operates in a State whose Landesbank required public assistance. We indeed find that our main result still obtains after controlling for this concurrent shock.

In columns (4) and (5), we account for two alternative bank-level shocks that may affect their propensity to hold sub-sovereign debt beyond the loss of political proximity. In particular, we include an interaction of the government-owned dummy and a variable capturing the bank's regulatory capital (column (4)) and the bank's share of non-performing loans (column (5)). We find that such concurrent shocks do not explain away the propensity of local savings banks to load up on State debt after loss of political connections. Finally, in column (6), we find that local government-owned banks and more likely to purchase State debt if such debt is higher rated. This result directly rejects the asset-substitution hypothesis whereby banks strive to acquire a riskier portfolio. Crucially, the effect which captures the mechanism related to political connections is still statistically significant in this case, too.

4.4 Contiguous counties

In our main tests so far, we have compared government-owned and private banks' propensity to hold bonds issued by the home State, in misaligned counties relative to aligned counties. This empirical strategy can produce biased estimates in there are existing unobservable trends which differ across counties and which affect different banks in different ways. Economic conditions can be different in some counties at the time of electoral change resulting in political misalignment: for example, the quality of retail customers that borrow from government-owned banks in such localities may be deteriorating, making them less willing to extend loans and more willing to invest in public debt instead. Model (1) allows us to estimate the average effect of political misalignment net of the impact of individual bank characteristics that can determine propensity to load up on state debt. However, our results can still be contaminated by a host of unobservable factors that make the population of an aligned county a poor control group.

To assuage such concerns, we proceed to adopt a version of the empirical strategy used by Card and Krueger (1994), Holmes (1998), Black (1999), and Huang (2008), and we compare individual banks in *adjacent* municipalities across neighboring German states, one of which is politically misaligned while the other is politically aligned. The assumption is that two neighboring municipalities

are really one economic area when it comes to observable factors such as economic growth and to unobservable factors such as growth opportunities. Hence, any discernible differences in how the propensity of a certain class of banks to hold sub-sovereign bonds can be attributed to changes in political alignment in one municipality but not in the other.

Table 7 reports the estimates from this test. By focusing on neighboring counties across state borders, we lose about 60% of all observations, but we still have plenty of variation in aligned and misaligned localities left. We adopt a number of different procedures; in particular, we use all banks in a county (column (1)), we only compare local savings banks across contiguous counties (column (2)), and we choose the control group of banks using a Propensity Score Matching procedure as in Table 6, column (1)). Our main result still obtains even in these considerably more restrictive specifications, suggesting that we capture a genuine political misalignment effect uncontaminated by concurrent unobservable adjustments—at the level of the municipality—in sub-sovereign or banking market conditions that affect government-owned and private banks differently. In all cases, the numerical impact of political misalignment is almost twice larger than the one reported in our "preferred" specification in Table 4, column (6), and uniformly significant at the 1 percent statistical level.

4.5 Robustness tests

4.5.1 Robust dependent variable

We next perform two sets of robustness tests aimed at making sure that our results are not driven by a particular choice of empirical proxies. In Table 8, we re-run regression Model (1) using different empirical constructs of the dependent variable, the bank's total holdings of bonds issued by the State. So far, the dependent variable has been constructed as the ratio, as time t, of the book value of the total stock of sovereign bonds issued by State s and held by bank b in county k, to bank b's total assets. We now create three alternative proxies. The first proxy looks at the nominal value, rather than the market value, of bonds issued by the home State.[15] The second proxy scales the bank's total holdings of own sub-sovereign bonds by the bank's total security portfolio, i.e. including stocks and fixed income of any issuer, instead of by the bank's total assets. The final

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[15] Appendix Table 4 shows that the differences between the market value according to German accounting rules and the nominal value of State bonds is negligible across all three banking groups considered.

proxy scales the bank's total holdings of bonds issued by the home State by the bank's total holdings of fixed income securities, both corporate as well as government bonds. The motivation is that fixed income and equity portfolios might be managed separately by the bank's management. The first three columns of Table 8 clearly show that our main result—that government-owned banks are considerably more likely, relative to similar cooperative banks, to increase their total holdings of own sub-sovereign bonds in localities that are politically misaligned with the State government—is not a feature of any particular strategy for calculating a bank's propensity to hold sovereign bonds issued by the home State.

In column (4), we employ as a dependent variable the bank's loans to government entities, divided by the bank's total assets. Once again, we find a positive coefficient on the interaction variable $Misaligned \times Government - owned$, which is also significant at the 1 percent statistical level. While the dataset we use does not allow us to distinguish between lending to the home State government, lending to other German State governments, lending to the federal government, and lending to foreign governments, it is plausible that government lending by small local savings banks will be predominantly to the bank's own State government.[16] Within the confines of this assumption, this test provides additional evidence that local government-owned banks try to make up for the loss of political connections by increasing their funding of those government authorities that can plausibly return the favor in the future.

Finally, in columns (5) and (6), we demonstrate that our results are robust to using growth rates instead of levels to define home State bond holdings and government lending, respectively.

4.5.2   Robust alignment

We have so far compared differences across government-owned and cooperative banks, in politically misaligned versus aligned localities, abstracting from the duration and the origin of misalignment. In Table 9, we first test for how the duration of a misalignment spell affects differences across banks in their propensity to load-up on their own States' bonds. We split the $Misaligned$ dummy into post-election quarterly components, i.e., dummies equal to 1 if the bank is observed one, two, three, etc., all the way to nine or more quarters after an election that produces a political misalignment

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[16]A recent paper by Gao, Ru, and Tang (2016) documents the propensity of government-owned banks in China to extend loans to local government.

between a country and a State, and to zero otherwise. We report the estimates from this regression in column (1). The estimates from his test suggest that local savings banks increase substantially their holdings of own State debt in the second quarter, and continue doing so until the seventh quarter, after political ties have been severed. Thereafter, the effects are no longer significantly different from zero, plausibly because banks ultimately sell these securities at secondary markets.

Next, we note that in our tests so far, we have used an indicator for political misalignment which is equal to one regardless of the electoral origin of such misalignment. In practice, misalignment can occur either because a State election brings about a governing coalition at the State level that is dominated by the opposite party from the one that is currently in power in the county, or because a municipal election results in most votes being cast for the opposite party from the one that is currently in power in the State capital. We hypothesize that the former case is more likely to induce government-owned banks in misaligned localities to attempt to endear themselves with the new government in the State. In the latter case, it may take some time for the former mayor to lose her seat on the board of directors of the local savings bank, during which time she can still influence the bank's decision-making. However, an entrenched mayor on the board of a local savings bank who is suddenly facing a political foe at the State level will have an immediate incentive to start bridging the political distance to the new State government.

In order to bring this hypothesis to the data, we create two *Misaligned* dummies, one for when a State and a county become politically misaligned following State elections, and one for when a State and a county become politically misaligned following local elections. We then modify Model (1) accordingly, so that we can test for the effect of political misalignment in each of these cases. Consistent with our prior, we find that misalignment brought about by State elections has an immediate, sizeable, and statistically significant impact on the propensity of local banks to load up on State debt (column (1)). Misalignment brought about by local elections has no such effect (column (3)). This confirms our conjecture that the incentive to reduce the political distance to the home State sovereign is strongest for entrenched politicians on the board of banks that are faced with an exogenous shock to their existing political connections.

This result is further strengthened when we split the two new *Misaligned* dummies into post-election quarterly components, as in column (1). We find that after a State election which produces a political misalignment with a particular county, the local government-owned banks in this county

increase immediately their holdings of own State debt, and keep doing so for a full year (column (3)). After that, there is no significant difference between theirs and local cooperatives' holdings of own State debt, relative to aligned counties. This patterns contrasts with column (1) which shows that in the full sample, local government-owned banks only start increasing their holdings of own State debt in the second quarter after elections. The two pieces of evidence are reconciled by the fact that political misalignment brought about by local elections produces no immediate significant difference in own State debt holdings between government owned and cooperative banks (column (5)).

Turning to the economic interpretations of the point estimates, a State election that causes a local government-owned bank to switch its political status from aligned to misaligned results in an increase in that bank's holdings of debt issued by the respective State government of 4.6 basis points, or a sixth of a sample-wide standard deviation, relative to a similar cooperative bank in the same county. Given an average holding of State debt by a local savings bank of 10.9 basis points (or 2.5 mln. Euro), this corresponds to an increase in such holdings of 42%, or 1.05 mln. Euro worth of own State bonds (relative to the analogous difference between a Sparkasse and a cooperative bank in a politically aligned locality). This amount is rather similar to the 800,000-to-1,200,000 USD on lobbying expenses by an average US bank during the 2000s reported by Lambert (2015).[17]

5   What are the benefits of own State bond purchases?

Our evidence so far conclusively rejects the null hypothesis that political connections do not explain differences across government-owned banks in their propensity to hold sub-sovereign bonds. We now ask, what are the political benefits to local government-owned banks of purchasing State bonds? There are two such potential benefits suggested by prior research. The first one is access to bailout funds in times of distress (Faccio, Masulis, and McConnell, 2006). The second one is higher risk taking by banks made possible by laxer supervision of politically connected banks (Horvitz and Ward, 1987).

We first hypothesize that our evidence is consistent with a "bailout insurance" mechanism

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[17]In a final robustness test, we address the fact that three of the States in our sample—Berlin, Bremen, and Hamburg—are city-states with only one county (two in Bremen), so the banks in those cannot be misaligned by construction. Appendix Table 7 confirms the baseline results when we drop these three city-states.

whereby banks adjust their portfolio in order to increase their chance of being bailed out in case of distress, in return for providing funding to the government (potentially at advantageous rates). In terms of the institutional arrangement, individual savings banks in a German State are connected through savings bank associations that operate safety nets at the State level. The decision making board of the association includes representatives from the individual banks (local politicians and bank executives) and representatives of the State. These associations operate guarantee funds that function like an insurance scheme: when one of the member banks is in distress, the other banks in the association have to step in and provide support, where the main support measures are capital injections and debt guarantees.[18] Therefore, State politicians have considerable say in the incidence of, as well as in determining the terms of, the bailout of an individual bank through these safety nets.

Our hypothesis then is that if a "bailout insurance" mechanism is at play, we should observe that local government-owned banks in misaligned counties are more likely to be bailed out if they hold a relatively larger State bond portfolio. Put differently, in politically aligned counties, local government-owned banks should always be bailed out in case of distress—regardless of their sub-sovereign bond holdings—because the governments at the State level and at the local level are dominated by the same party. The State government should have no political obligation to arrange a bailout of local government-owned banks in distress if the politicians on their boards come from a different party, and so they will only do so if the bank accumulates a substantial State bond portfolio first. Furthermore, to account for the fact that member banks of the State-wide insurance scheme also participate in bailout decisions, we control for whether a particular bank is politically aligned or misaligned with the majority of the savings banks in the state (i.e., if it is in a CDU/SPD-dominated county at a time when more than half of the counties in the State are CDU/SPD-dominated).

We acquire exhaustive data on actual bailout disbursements for the entire German banking system over the sample period 2005–2013. Based on this information, we create a variable equal to the bailout amount—relative to total assets—in the year in which a bank receives a bailout injection.[19] Then we relate this variable to the ownership structure of the bank, to its holdings of

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[18]For more detail, see a recent research paper by Bian, Haselmann, Kick, and Vig (2013) who study the incidence of local bank bailouts in Germany with public funds and through insurance schemes.

[19]Bank distress is non-trivial among German banks. For example, Dam and Koetter (2013) report that in each year during the 1995–2006 period, 8% of all German banks were in distress.

State bonds, and to the political alignment between the State government and the local government.

Table 10 reports the estimates from this regression. We find that all banks in misaligned counties (column (1)), as well as government-owned banks in general (column (2)), are more likely to be bailed out with public money if they hold a larger stock of bonds issued by their State. We also find that government-owned banks are less likely to be bailed out with public money in misaligned localities (column (3)), confirming the value of political connections in times of distress. Importantly, the point estimate in column (4) confirms that government-owned banks in politically misaligned localities are more likely to be bailed out if they hold a large stock of their home State's sovereign debt. This is a direct evidence for a "bailout insurance" hypothesis, and it suggests that indeed, funding the State government in good times through the purchase of large amounts of its debt can compensate for the loss of direct political connections, as manifested by the State government's returning the favor in times of bank distress.

A remaining concern about the validity of this inference pertains to the fact that the boards of most regional bailout funds in the savings bank system are not staffed predominantly by State politicians, but rather by peers from other local banks, i.e. the executives of neighboring counties' savings banks (see, for example, Kick, Koetter, and Poghosyan, 2017). Hence, one might be skeptical about the ability of State politicians to overrule local savings bankers in the board of insurance schemes, which might be closer in terms of political distance to their respective county politicians. We therefore devise an alternative Defector indicator, which equals one for banks that are domiciled in a county whose governing coalition is dominated by the opposite party from the one that is in charge in more than half of the counties in the State. Column (5) shows that the bailout insurance effect reflected by the triple interaction term between government ownership, misalignment, and own states' bond shares still obtains when we control for the political alignment between the bank's county and the rest of the counties in the State.

We next address the second hypothesis, namely, that by extending a favor to the State (in terms of potentially cheap funding), banks are purchasing lax supervision in the future which enables them to take on more risk from now on. In Table 11, we test this hypothesis explicitly. We employ five different proxies for risk taking suggested by the literature (e.g., Laeven and Levine, 2009): the share of nonperforming loans in the bank's loan portfolio; regulatory capital; return on assets; the capital-to-asset ratio; and the Z-score, calculated as the sum of return on assets and capital-to-

assets ratio both divided by a 5-year rolling window of the standard deviation of the return on assets. Then we re-estimate Model (1), with each of this proxies for risk taking as the dependent variable. In no case do we find that local government-owned banks in misaligned localities are likely to take on more risk if they are holding a larger State bond portfolio. We conclude that unlike the incidence of a bailout in the case of distress, increased risk taking as a result of laxer supervision does not appear to be the reason why local government-owned banks invest in bridging the political distance to the State government.

6 Conclusion

Political connections are valuable because they can buy firms preferential treatment, both in good times and in times of distress. Political relationships are particularly valuable to banks, and they devote substantial resources to acquiring political access; for example, the U.S. financial sector spends almost $500 million per year on lobbying elected officials, second only to the health industry (Lambert, 2015). Using a security-level dataset for around 1,700 German banks between 2005 and 2013, we investigate government-owned banks' reaction to the loss of political connections. We exploit changes in the composition of governing coalitions at the State and at the municipal level resulting from staggered elections in 16 States and 438 municipalities. Because local elected officials sit on the board of local government-owned banks, we define politically connected banks as local government-owned banks in a municipality where the governing coalition is dominated by the same party that dominates the State government.

We show a robust new fact: following an election that leads to the loss of their political connections, local government-owned banks in Germany increase strongly and significantly their holdings of sub-sovereign bonds issued by their home State government. This is tantamount to the provision of funding to the State government which is within the confines of standard capital requirements which treat sub-sovereign bonds—unlike, say, direct loans to the State government—as zero-risk-weighted assets. This effect is particularly strong after the emergence of political misalignment due to elections at the State level, a pattern consistent with existing local politicians' trying to establish connections with a new politically distant State government authority. Cooperative banks (the comparison group) engage in no such behavior after elections that produce political misalignment,

which is consistent with the absence of local politicians from their governance and management structure. We also find that government-owned banks which are not politically connected are more likely to be bailed out when in distress (but not to engage in higher risk taking) if they hold larger stocks of home State bonds. Our results point to a novel politically motivated mechanism linking banks and the state—the bridging of political distance through the purchase of sub-sovereign debt.

While we cannot (and do not) document the explicit workings of such bridging of political distance, there are several hypotheses for why this mechanism is effective. For one, sub-sovereign debt in Germany is typically placed privately, therefore, neither quantities nor prices are publicly observed. It is plausible that in such private placements, and as a political favor, banks offer to purchase bonds at better-than-market prices. We find that following a change of guard at the State level following State elections, government-owned banks in misaligned localities increase their holdings of State debt by about 1 mln. Euro, which is roughly the same amount that the average US bank spends on lobbying per year. Lambert (2015) finds that these small lobbying expenses buy very substantial favors—in terms of laxer supervisory enforcement—so it is plausible that in our sample, similar amounts spent on funding the State government can have a large multiplier effect when it comes to bailing out banks in distress. A second possibility is that the bond-purchasing operation is simply an initiation of a repeated interaction between local politicians and State politicians, which makes it akin to the "face time" or "front-row access" that lobbying buys. Of course, in the absence of direct evidence, such hypotheses remain arguably speculative.

The robust empirical regularity that we have uncovered can be worrisome to policy makers for at least two reason. For one, higher balance sheet exposures to the sovereign can exacerbate the bank-sovereign loop in times of heightened sovereign stress (e.g., Uhlig, 2013; Acharya, Drechsler, and Schnabl, 2014; Broner, Erce, Martin, and Ventura, 2014; Cooper and Nikolov, 2014; Farhi and Tirole, 2014), an argument that easily extends to sub-sovereign entities. Second, the literature has demonstrated that investing in public debt can crowd out private investment (e.g., Becker and Ivashina, 2014; Gennaioli, Martin, and Rossi, 2014b; Popov and Van Horen, 2015). Investigating if the propensity of politically misaligned banks to increase their holdings of own State debt is associated with lower local lending is beyond the scope of this paper, but it does present itself as a fruitful avenue for future research.

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Figure 1. Election patterns in Germany between 2005 and 2013, by State

Notes: This figure shows the timing of both State-levels and county-level elections. An election year is marked with a "1". The resulting State-level coalition is named in the top line for each State. The first acronym indicates the senior partner in the coalition, also represented by the color of the according bar. The bottom bar indicates the party with the most cumulative votes in county elections; within-State differences across counties are shown in the maps in Figure 2. CDU (Christian Democratic Union of Germany) is a center-right party. Its sister party is the CSU (Christian Social Union), which is only active in the state of Bavaria. Together, CDU and CSU form one common parliamentary group in the federal parliament. SPD (Social Democratic Party of Germany) is a center-left party. FDP (Free Democratic Party) is a liberal party. The party Grüne are officially called the Bündnis 90/Die Grünen (Alliance '90/The Greens) and represent the ecological political party in Germany. Die Linke are the democratic socialist political party in Germany. The state parliament elections in Hesse of 2008 had to be repeated because no coalition could be formed by the leading party, SPD.

Figure 2. Aligned and misaligned counties over time
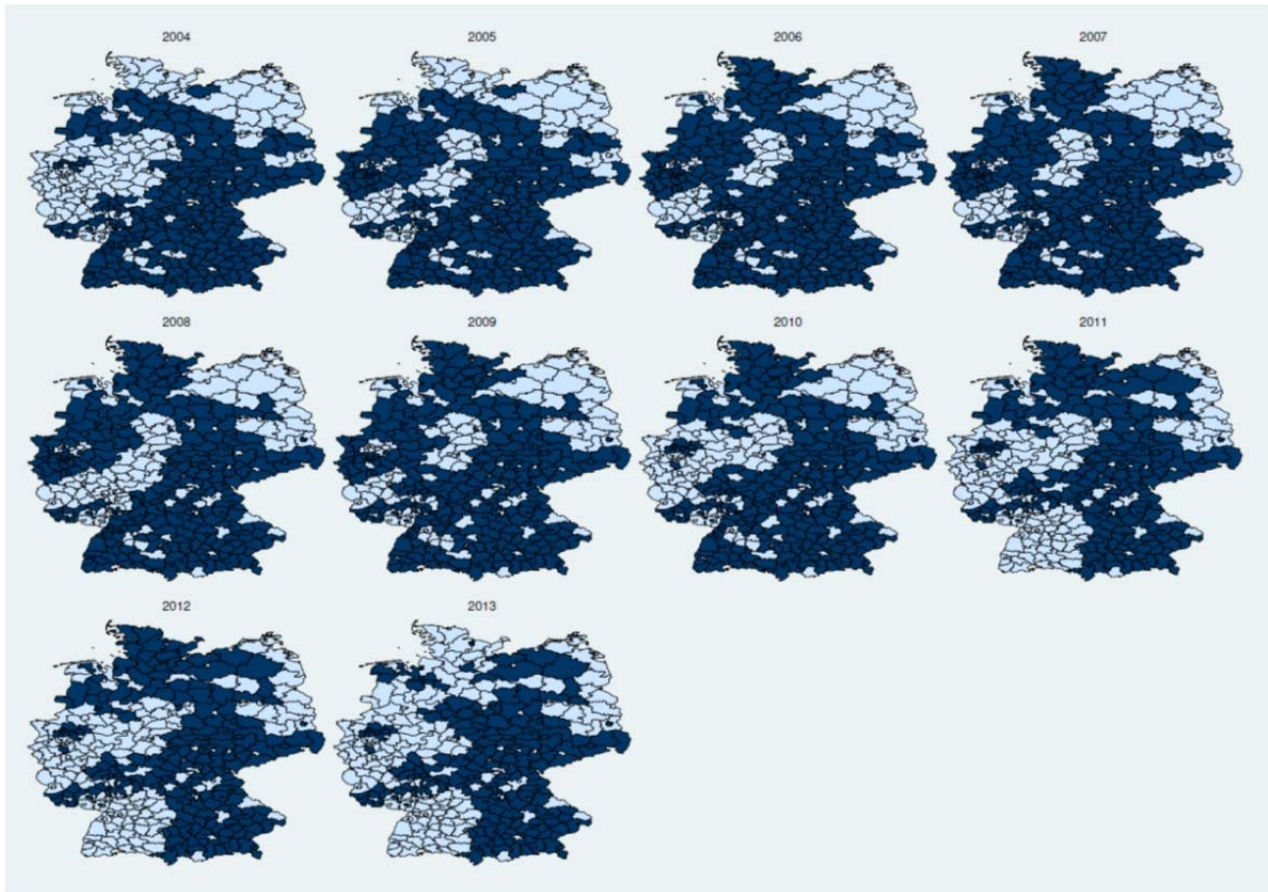
Notes: Aligned counties (darker shade) and misaligned counties (lighter shade), for the 16 German States, between 2004 and 2013. Aligned counties are those where the governing coalition is dominated by the same party as the one that in the same year dominates the government coalition at the State level. Misaligned counties are those where the governing coalition is dominated by a different party from the one that in the same year dominates the government coalition at the State level.

Table 1. Misaligned counties share

State	# counties	2005	2006	2007	2008	2009	2010	2011	2012	2013
Baden-Württemberg	44	20	20	20	20	32	32	100	100	100
Bayern	96	10	10	10	19	19	19	19	19	19
Berlin	1	0	0	0	0	0	0	0	0	0
Brandenburg	18	83	83	83	83	83	83	83	83	83
Bremen	2	0	0	0	0	0	0	0	0	0
Hamburg	1	0	0	0	0	0	0	0	0	0
Hessen	26	58	38	38	100	38	38	46	46	46
Mecklenburg-Vorpommern	18	94	94	94	94	94	94	44	44	44
Niedersachsen	46	50	52	52	52	52	52	54	54	46
Nordrhein-Westfalen	53	19	19	19	19	28	72	72	72	72
Rheinland-Pfalz	36	89	89	89	89	72	72	72	72	72
Saarland	6	17	17	17	17	17	17	17	17	17
Sachsen	29	14	14	14	7	3	3	3	3	3
Sachsen-Anhalt	24	8	8	8	8	4	4	4	4	4
Schleswig-Holstein	15	100	0	0	20	20	20	20	20	87
Thüringen	23	13	13	13	13	17	17	17	17	17

Notes: This table shows the share, in percentage points, of misaligned counties relative to all counties per State and per year, between 2004 and 2013. The second column provides the total number all counties per State. An accompanying summary of misaligned banks relative to all banks per State and over time is shown in Appendix Table 7.

Table 2. Cooperatives and government-owned banks: Aligned vs. misaligned localities

Year	Cooperatives			Government-owned banks		
	Aligned	*Misaligned*	*All*	*Aligned*	*Misaligned*	*All*
2005	350	877	1,227	149	293	442
2006	294	933	1,227	131	311	442
2007	293	932	1,225	131	310	441
2008	369	823	1,192	158	277	435
2009	326	827	1,153	148	281	429
2010	442	692	1,134	190	237	427
2011	590	525	1,115	229	195	424
2012	580	518	1,098	227	193	420
2013	608	466	1,074	227	188	415

Note: The table shows the number of banks per year separated according to ownership (Cooperatives vs. Government-owned) and to political alignment between the strongest party emerging from elections at the county level and the leading coalition party in the government in the respective State. Government-owned banks are regional savings banks. We exclude head institutions ("Landesbanken"). Cooperatives comprise regional cooperative banks as the control group. The sample is based on quarterly data between q4:2005 and q4:2013.

Table 3. Summary statistics

	Cooperatives		Government-owned banks		Difference in means	
	Mean	*SD*	*Mean*	*SD*	*Delta*	*p-value*
Dependent variables and treatment	38,102 observations		14,563 observations			
State bonds / Total assets	0.062	0.263	0.109	0.265	-0.046	0.000
State bonds / Total assets (Nominal value)	0.061	0.255	0.107	0.260	-0.046	0.000
State bonds / Total portfolio	0.265	1.100	0.448	1.179	-0.183	0.000
State bonds / Bond portfolio	0.312	1.262	0.634	1.708	-0.322	0.000
Federal bonds / Total assets	0.130	0.569	0.170	0.338	-0.039	0.000
Other State bonds / Total assets	0.227	0.480	0.308	0.415	-0.081	0.000
Stocks / Total assets	0.479	2.323	1.632	3.274	-1.153	0.000
Government lending / Total assets	0.623	1.300	3.764	3.621	-3.142	0.000
Bailout amount / Risk-weighted assets	0.119	0.801	0.021	0.270	0.098	0.000
Misaligned	0.377	0.485	0.417	0.493	-0.040	0.000
Defector	0.736	0.441	0.667	0.471	0.069	0.000
Quarterly bank-level controls						
Log (Total assets)	12.545	1.140	14.249	0.932	-1.704	0.000
Share of stocks of total assets	3.240	5.329	6.563	5.773	-3.323	0.000
Share of cash of total assets	1.971	0.787	1.840	0.722	0.131	0.000
Share of corporate loans in total lending	13.321	9.463	21.145	7.215	-7.824	0.000
Share of household lending in total lending	84.470	11.568	70.560	9.318	13.910	0.000
Share of lending to foreigners	0.434	1.380	0.786	0.859	-0.351	0.000
Annual bank-level controls						
Tier 1 capital ratio	11.016	3.656	11.157	3.767	-0.141	0.000
Cost-income ratio	71.397	21.497	66.987	8.397	4.409	0.000
Share of fee income	20.806	6.082	20.712	3.062	0.095	0.077
Return on equity	15.653	9.034	18.530	6.738	-2.878	0.000
Short-term assets / short-term liabilities	2.531	1.151	2.766	1.147	-0.235	0.000
Share of non-performing loans	4.674	3.485	4.610	2.744	0.064	0.049

Note: The table shows summary statistics of the main and alternative dependent variables, as well as annual and quarterly covariates for government-owned banks and for local cooperative banks, respectively. Government-owned banks are regional savings banks. Cooperatives comprise regional cooperative banks. The sample is based on quarterly data between q4:2005 and q4:2013. We report the market value of bonds, unless otherwise specified. RWA is short for risk-weighted assets. ROE is short of return on equity. NPL is short for non-performing loans. All variables are measured in percentage points, unless noted otherwise. The last two columns provide the difference in mean and the corresponding test statistics for significance from zero. For variable definitions and sources, see Appendix Table 1.

Table 4. Politics, banks, and sub-sovereign debt: Main result

	State bonds / Total assets					
	(1)	(2)	(3)	(4)	(5)	(6)
				Bank and		
	Baseline	Quarterly RHS	Annual RHS	quarter FE	County X quarter FE	
Misaligned × Government-owned	0.0400***	0.0410***	0.0399***	0.0369***	0.0277***	0.0195**
	(0.0056)	(0.0056)	(0.0055)	(0.0063)	(0.0078)	(0.0077)
Misaligned	0.0184***	0.0175***	0.0143***			
	(0.0032)	(0.0032)	(0.0030)			
Government-owned	0.0274***	0.0081**	0.0024			
	(0.0031)	(0.0041)	(0.0041)			
Quarterly control variables						
Log (Total assets)		0.0045***	0.0078***	-0.0294**	-0.0360*	-0.0126
		(0.0011)	(0.0011)	(0.0137)	(0.0190)	(0.0161)
Share of stocks of total assets		-0.0010***	-0.0011***	-0.0009**	-0.0022***	-0.0019***
		(0.0002)	(0.0002)	(0.0004)	(0.0006)	(0.0006)
Share of cash of total assets		-0.0087***	-0.0053***	0.0004	-0.0006	-0.0020
		(0.0014)	(0.0015)	(0.0016)	(0.0018)	(0.0018)
Share of corporate loans		-0.0004*	0.0006**	-0.0033***	-0.0028***	-0.0026***
in total lending		(0.0002)	(0.0003)	(0.0007)	(0.0008)	(0.0008)
Share of loans to households		-0.0013***	-0.0005*	-0.0007	-0.0000	-0.0002
in total lending		(0.0002)	(0.0002)	(0.0006)	(0.0007)	(0.0007)
Share of lending to foreigners		-0.0032***	-0.0024***	-0.0082***	-0.0149***	-0.0139***
		(0.0005)	(0.0005)	(0.0020)	(0.0030)	(0.0027)
Annual control variables						
Tier 1 capital ratio			0.0055***	0.0048***		0.0059***
			(0.0010)	(0.0012)		(0.0015)
Cost-income ratio			0.0003***	0.0000		-0.0001**
			(0.0001)	(0.0001)		(0.0000)

Share of fee income			-0.0012***	0.0015***		0.0026***
			(0.0003)	(0.0005)		(0.0006)
Return on equity			0.0016***	0.0011***		0.0017***
			(0.0003)	(0.0002)		(0.0002)
Short-term assets / short-term			0.0061***	0.0017		0.0032
liabilities			(0.0011)	(0.0019)		(0.0024)
Share of non-performing loans			-0.0005	0.0002		-0.0009
			(0.0004)	(0.0004)		(0.0006)
Observations	53,099	52,704	52,288	52,288	52,704	52,288
R-squared	0.009	0.012	0.023	0.469	0.574	0.596
Quarter FE	No	No	No	Yes	Absorbed	Absorbed
Bank FE	No	No	No	Yes	Yes	Yes
County × Quarter FE	No	No	No	No	Yes	Yes

Notes: This table presents OLS regression results of State bond holdings on bank-specific variables and on indicators of political connections. The dependent variable in all columns is the market value of the bank's total holdings of bonds issued by the State where the bank is headquartered, divided by the bank's gross total assets. *Misaligned* is an indicator variable equal to one if the party with the most votes obtained during the latest regional elections in the county where the bank is domiciled is different from the leading party in the coalition forming the State government after the latest State parliamentary elections. *Government-owned* is an indicator variable equal to one for banks that are ultimately owned by the local government, i.e. local savings banks. The sample period is q4:2005 until q3:2013. Standard errors are two-way clustered at the county and quarter level. */**/*** denote significance at the 10%/5%/1% levels, respectively. For variable definitions and sources, see Appendix Table 1.

Table 5. Politics, banks, and sub-sovereign debt: Falsification tests

	Federal bonds	Other States' bonds	Stocks	State bonds / Total assets
	(1)	(2)	(3)	(4)
				Placebo elections
Misaligned × Government-owned	-0.0198	-0.0223	0.0592	0.0277
	(0.0157)	(0.0159)	(0.1313)	(0.0477)
Observations	52,288	52,288	52,288	52,288
R-squared	0.557	0.561	0.513	0.665
Bank FE	Yes	Yes	Yes	Yes
County × Quarter FE	Yes	Yes	Yes	Yes
Annual controls	Yes	Yes	Yes	Yes
Quarterly controls	Yes	Yes	Yes	Yes

Notes: This table presents falsification OLS regression results of State bond and other securities holdings on bank-specific variables and on indicators of political connections. The dependent variable is the market value of the bank's holdings of federal government debt as a share of total assets (column (1)); the market value of the bank's holdings of bonds issued by States other than the bank's home State, as a share of total assets (column (2)); the bank's holdings of common stock as a share of total assets (column (3)); and the market value of the bank's total holdings of bonds issued by the State where the bank is headquartered, divided by the bank's gross total assets (column (4)). *Misaligned* is an indicator variable equal to one if the party with the most votes obtained during the latest regional elections in the county where the bank is domiciled is different from the leading party in the coalition forming the State government after the latest State parliamentary elections. *Government-owned* is an indicator variable equal to one for banks that are ultimately owned by the local government, i.e. local savings banks. The regressions include all control variables from Table 4 (coefficients not reported for brevity). Standard errors are two-way clustered at the county and quarter level. */**/*** denote significance at the 10%/5%/1% levels, respectively. For variable definitions and sources, see Appendix Table 1.

	State bonds / Total assets					
	(1)	(2)	(3)	(4)	(5)	(6)
	Propensity score matching	Excluding Cooperatives	2007-08 Landesbanken shock	Tier 1 equity	Non-performing loans	State ratings
Misaligned × Government-owned	0.0297***		0.0154**	0.0233**	0.0225***	0.0318***
	(0.0086)		(0.0079)	(0.0094)	(0.0084)	(0.0106)
Misaligned		0.0342***				
		(0.0066)				
Shock			-0.0082**	0.0237***	0.7550	-0.0214**
			(0.0039)	(0.0043)	(0.000)	(0.0091)
Shock × Misaligned			0.0159**	-0.0032	0.1666	0.0751***
			(0.0068)	(0.0096)	(0.000)	(0.0194)
Shock × Government-owned				0.0119	-0.0139	0.0529***
				(0.0091)	(0.0088)	(0.0127)
Shock × Misaligned × Government-owned				0.0028	-0.0107	-0.0343**
				(0.0141)	(0.0176)	(0.0143)
Observations	40,547	14,186	52,288	52,288	52,300	52,288
R-squared	0.636	0.423	0.596	0.595	0.577	0.596
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes
County × Quarter FE	Yes	No	Yes	Yes	Yes	Yes
Quarter FE	No	Yes	No	No	No	No
Annual controls	Yes	Yes	Yes	Yes	Yes	Yes
Quarterly controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table presents OLS regression results of State bond holdings on bank-specific variables and on indicators of political connections. The dependent variable in all columns is the market value of the bank's total holdings of bonds issued by the State where the bank is headquartered, divided by the bank's gross total assets. *Misaligned* is an indicator variable equal to one if the party with the most votes obtained during the latest regional elections in the county where the bank is domiciled is different from the leading party in the coalition forming the State government after the latest State parliamentary elections. *Government-owned* is an indicator variable equal to one for banks that are ultimately

owned by the local government, i.e. local savings banks. In column (1) we show results for a sample based on a one-to-one propensity score matching between local savings banks and cooperative banks based on both quarterly and annual control variables. In column (2), we restrict the sample to local government-owned banks only. *Shock* corresponds to an indicator equal to one if a local savings bank was tied to a Landesbank affected by the fallout of the US subprime mortgage crisis (column (3)); to the bank's Tier 1 equity (column (4)); to the bank's share of non-performing loans (column (5)); and to the rating—by Moodys and/or Standard & Poors—of the respective German State in which the bank is domiciled (column (6)). The regressions include all control variables from Table 4 (coefficients not reported for brevity). Standard errors are two-way clustered at the county and quarter level. */**/*** denote significance at the 10%/5%/1% levels, respectively. For variable definitions and sources, see Appendix Table 1.

Table 7. Politics, banks, and sub-sovereign debt: Contiguous counties

	State bonds / Total assets		
	(1)	(2)	(3)
	All banks	Excluding Cooperatives	Propensity matching
Misaligned × Government-owned	0.0349***		0.0440***
	(0.0098)		(0.0109)
Misaligned		0.0350***	
		(0.0100)	
Observations	22,334	6,127	17,383
R-squared	0.411	0.450	0.489
Quarter FE	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes
Contiguous FE	Yes	Yes	Yes
Annual controls	Yes	Yes	Yes
Quarterly controls	Yes	Yes	Yes

Notes: This table presents OLS regression results of State bond holdings on bank-specific variables and on indicators of political connections. The regressions are performed on the sub-sample of banks residing in contiguous counties, i.e., counties that border each other across State borders. The dependent variable in all columns is the market value of the bank's total holdings of bonds issued by the State where the bank is headquartered, divided by the bank's gross total assets. Column (1) shows results for all banks residing in contiguous counties. In column (2), we exclude all cooperative banks, and compare local savings banks across contiguous counties across state borders. Column (3) specifies instead the matched sample of savings and cooperative banks. *Misaligned* is an indicator variable equal to one if the party with the most votes obtained during the latest regional elections in the county where the bank is domiciled is different from the leading party in the coalition forming the State government after the latest State parliamentary elections. *Government-owned* is an indicator variable equal to one for banks that are ultimately owned by the local government, i.e. local savings banks. The regressions include all control variables from Table 4 (coefficients not reported for brevity). Standard errors are two-way clustered at the county and quarter level. */**/*** denote significance at the 10%/5%/1% levels, respectively. For variable definitions and sources, see Appendix Table 1.

Table 8. Politics, banks, and sub-sovereign debt: Robust dependent variable

	State bonds / Total assets			Gov. lending / Total assets	Growth State bonds / Total assets	Growth Gov. lending / Total assets
	(1)	(2)	(3)	(4)	(5)	(6)
	Nominal	Portfolio	All bonds			
Misaligned × Government-owned	0.0195**	0.1337***	0.2026***	0.0536***	5.1986*	6.7892*
	(0.0076)	(0.0367)	(0.0491)	(0.0153)	(2.7854)	(3.6804)
Observations	52,288	52,288	51,894	52,288	7,392	38,638
R-squared	0.596	0.623	0.603	0.983	0.728	0.347
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes
County × Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Annual controls	Yes	Yes	Yes	Yes	Yes	Yes
Quarterly controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table presents OLS regression results of robust proxies for State bond holdings on bank-specific variables and on indicators of political connections. Columns (1)—(3) of the table show estimation results for alternative numeraire choices regarding the dependent variable, the bank's total holdings of bonds issued by the State where the bank is headquartered, divided by the bank's gross total assets. Column (1) shows result when measuring the State debt shares of total assets based on nominal instead of market values of State bonds. Column (2) uses the share of State bonds relative to the bank's securities portfolio. Column (3) shows results for the share of own State bonds relative to the fixed-income securities portfolio of the bank only. Column (4) shows the results for loans to the government as a share of total assets. Column (5) shows the results for quarter-on-quarter growth in the bank's total holdings of bonds issued by the State where the bank is headquartered, divided by the bank's gross total assets. Column (6) shows the results for quarter-on-quarter growth in the bank's total loans to the government as a share of total assets. *Misaligned* is an indicator variable equal to one if the party with the most votes obtained during the latest regional elections in the county where the bank is domiciled is different from the leading party in the coalition forming the State government after the latest State parliamentary elections. *Government-owned* is an indicator variable equal to one for banks that are ultimately owned by the local government, i.e. local savings banks. The regressions include all control variables from Table 4 (coefficients not reported for brevity). Standard errors are two-way clustered at the county and quarter level. */**/*** denote significance at the 10%/5%/1% levels, respectively. For variable definitions and sources, see Appendix Table 1.

Table 9. Politics, banks, and sub-sovereign debt: Robust alignment

	State bonds / Total assets				
	Misalignment via any election	Misalignment via State elections		Misalignment via county elections	
	(1)	(2)	(3)	(4)	(5)
Misaligned × Government-owned		0.0462**		0.0005	
		(0.0226)		(0.0305)	
Misaligned Q1 × Government-owned	0.0196		0.0372*		-0.0327
	(0.0149)		(0.0205)		(0.0207)
Misaligned Q2 × Government-owned	0.0379**		0.0433**		-0.0024
	(0.0170)		(0.0203)		(0.0287)
Misaligned Q3 × Government-owned	0.0492***		0.0423**		0.0460
	(0.0170)		(0.0194)		(0.0313)
Misaligned Q4 × Government-owned	0.0402***		0.0304*		0.0434
	(0.0152)		(0.0168)		(0.0289)
Misaligned Q5 × Government-owned	0.0312*		0.0270		0.0377
	(0.0177)		(0.0187)		(0.0395)
Misaligned Q6 × Government-owned	0.0364**		0.0236		0.0910**
	(0.0180)		(0.0194)		(0.0455)
Misaligned Q7 × Government-owned	0.0340*		0.0262		0.0629
	(0.0191)		(0.0216)		(0.0475)
Misaligned Q8 × Government-owned	0.0223		0.0240		0.0242
	(0.0173)		(0.0206)		(0.0441)
Misaligned Q9+ × Government-owned	-0.0049		0.0143		-0.0472**
	(0.0098)		(0.0110)		(0.0207)
Observations	52,288	46,338	46,338	35,837	35,837
R-squared	0.596	0.465	0.458	0.473	0.473
Bank FE	Yes	Yes	Yes	Yes	Yes
County × Quarter FE	Yes	Yes	Yes	Yes	Yes
Annual controls	Yes	Yes	Yes	Yes	Yes
Quarterly controls	Yes	Yes	Yes	Yes	Yes

Notes: This table presents OLS regression results of State bond holdings on bank-specific variables and on indicators of political connections. The dependent variable in both columns is the market value of the bank's total holdings of bonds issued by the State where the bank is headquartered, divided by the bank's gross total assets. *Misaligned* is an indicator variable equal to one if the party with the most votes obtained during the latest regional elections in the county where the bank is domiciled is different from the leading party in the coalition forming the State government after the latest State parliamentary elections. In columns (2) and (3), only misalignments occurring as a result of State elections are counted. In columns (4) and (5), only misalignments occurring as a result of local elections are counted. In both cases, the alternative type of misalignment is dropped from the data. *Misaligned Qi* is an indicator variable equal to one if *Misaligned* equals 1 *i* quarters after any (column (1)), after State (column (3)), or after local (column (5)) elections. Government-*owned* is an indicator variable equal to one for banks that

are ultimately owned by the local government, i.e. local savings banks. The regressions include all control variables from Table 4 (coefficients not reported for brevity). Standard errors are two-way clustered at the county and quarter level. */**/*** denote significance at the 10%/5%/1% levels, respectively. For variable definitions and sources, see Appendix Table 1.

Table 10. Politics, banks, and sub-sovereign debt: Incidence of bank bailouts

	Bailout amount / Risk-weighted assets				
	(1)	(2)	(3)	(4)	(5)
Misaligned × Own state bond share	0.0374***	0.0339***	0.0361***	0.0043	-0.0071
	(0.0140)	(0.0140)	(0.0140)	(0.0140)	(0.0130)
Government-owned × Own state bond share		0.0841***	0.0881***	0.0252	-0.1535***
		(0.0190)	(0.0190)	(0.0180)	(0.0360)
Misaligned × Government-owned			-0.0316*	-0.0491***	-0.0719***
			(0.0160)	(0.0180)	(0.0180)
Misaligned × Government-owned × Own state bond share				0.1250***	0.2661***
				(0.0330)	(0.0430)
Own state bond share	0.0008	-0.0225**	-0.0244**	-0.0101	0.0531*
	(0.0080)	(0.0110)	(0.0110)	(0.0100)	(0.0320)
Defector × Own state bond share					-0.0664**
					(0.0310)
Defector × Government-owned					-0.0898***
					(0.0160)
Defector × Misaligned					1.0865
					(0.8210)
Defector × Government-owned × Own state bond share					0.2158***
					(0.0570)
Observations	52,228	52,228	52,228	52,228	52,228
R-squared	0.777	0.777	0.777	0.777	0.778
Bank FE	Yes	Yes	Yes	Yes	Yes
County × Quarter FE	Yes	Yes	Yes	Yes	Yes
Annual controls	Yes	Yes	Yes	Yes	Yes
Quarterly controls	Yes	Yes	Yes	Yes	Yes

Notes: This table presents OLS regression results of an indicator of bailout intensity on bank-specific variables and on indicators of political connections. The dependent variable is the amount of capital support provided to banks as a share of risk-weighted assets. These capital support

measures constitute the same bailouts analyzed in Dam and Koetter (2012) and Bian et al. (2013). *Misaligned* is an indicator variable equal to one if the party with the most votes obtained during the latest regional elections in the county where the bank is domiciled is different from the leading party in the coalition forming the State government after the latest State parliamentary elections. *Government-owned* is an indicator variable equal to one for banks that are ultimately owned by the local government, i.e. local savings banks. *Defector* is an indicator variable equal to one for banks that are domiciled in a county whose governing coalition is dominated by a different party from the one that is in charge in more than half of the counties in the State. *Own state bond share* denotes the bank's holdings of bonds issued by its own State as a share of its total assets. The regressions include all control variables from Table 4 (coefficients not reported for brevity). Standard errors are two-way clustered at the county and quarter level. */**/*** denote significance at the 10%/5%/1% levels, respectively. For variable definitions and sources, see Appendix Table 1. Robustness checks employing Tobit models for the bailout to RWA share and a probit model for a bailout indicator are available upon request.

Table 11. Politics, banks, and sub-sovereign debt: Bank risk taking

	Nonperforming loans	Tier 1 capital	Return on assets	Capital-to-assets ratio	Z-score
	(1)	(2)	(3)	(4)	(5)
Misaligned × Own state bond share	-0.1031	-0.0093	0.0222**	0.0290	-0.9357*
	(0.072)	(0.039)	(0.011)	(0.045)	(0.551)
Government-owned × Own state bond share	0.1830***	-0.0089	-0.0149	0.0457	-0.0475
	(0.068)	(0.042)	(0.013)	(0.043)	(1.014)
Misaligned × Government-owned	0.1194***	0.1713***	0.0039	-0.0171	-4.3885***
	(0.039)	(0.029)	(0.007)	(0.016)	(0.679)
Misaligned × Government-owned × Own state bond share	-0.0974	0.0629	0.0151	-0.0300	-1.0165
	(0.100)	(0.066)	(0.018)	(0.052)	(1.388)
Own state bond share	0.0008	-0.0225**	-0.0244**	-0.0101	-0.2158***
	(0.0080)	(0.0110)	(0.0110)	(0.0100)	(0.0570)
Observations	50,796	50,799	50,799	50,799	50,799
R-squared	0.917	0.985	0.890	0.961	0.720
Bank FE	Yes	Yes	Yes	Yes	Yes
County × Quarter FE	Yes	Yes	Yes	Yes	Yes
Annual controls	Yes	Yes	Yes	Yes	Yes
Quarterly controls	Yes	Yes	Yes	Yes	Yes

Note: This table presents OLS regression results of indicators of bank risk on bank-specific variables and on indicators of political connections. The dependent variable is the share of non-performing loans (column (1)); Tier 1 equity (column (2)); Return on assets (column (3)); Capital-to-assets ratio (column (4)); and the Z-score equals the sum of Return on assets and Capital-to-assets ratio both divided by a 5-year rolling window of the standard deviation of the Return on assets. Dependent variables are excluded from the RHS of the regression, whenever appropriate. *Misaligned* is an indicator variable equal to one if the party with the most votes obtained during the latest regional elections in the county where the bank is domiciled is different from the leading party in the coalition forming the State government after the latest State parliamentary elections. *Government-owned* is an indicator variable equal to one for banks that are ultimately owned by the local government, i.e. local savings banks. *Own state bond share* denotes the bank's holdings of bonds issued by its own State as a share of its total assets. The regressions include all control variables from Table 4 (coefficients not reported for brevity). Standard errors are two-way clustered at the county and quarter level. */**/*** denote significance at the 10%/5%/1% levels, respectively.

Appendix Table 1. Variable definitions and sources

Variable	Unit	Definition	Source
Dependent variables and treatment			
State bonds / Total assets	%	Market value according to German accounting rules of state bonds where the bank is headquartered divided by average quarterly gross assets.	Bista and SHS
State bonds / Total assets (Nominal value)	%	Nominal value of state bonds where the bank is headquartered divided by average quarterly gross assets.	Bista and SHS
State bonds / Total portfolio	%	Market value of state bonds where the bank is headquartered according to German accounting rules divided by the aggregate market value of the entire equity and fixed income security portfolio.	Bista and SHS
State bonds / Bond portfolio	%	Market value of state bonds where the bank is headquartered according to German accounting rules divided by the aggregate market value of the entire equity and fixed income security portfolio.	Bista and SHS
Federal bonds / Total assets	%	Market value according to German accounting rules of federal government bonds divided by average quarterly gross assets.	Bista and SHS
Other States' bonds / Total assets	%	Market value according to German accounting rules of any sub-federal, state bonds irrespective of where the bank is headquartered divided by average quarterly gross assets.	Bista and SHS
Stocks / Total assets	%	Market value according to German accounting rules of equity securities divided by average quarterly gross assets.	Bista and SHS
Bailout amount / Risk-weighted assets	%	Capital and equity warrant support by local deposit and institution insurance schemes relative to risk-weighted assets.	BBK
Misaligned	0/1	An indicator equal to one if the strongest party in the county is different from the leading political party in the State government.	SSO
Defector	0/1	An indicator equal to one if the strongest party in the county is different from the leading party in the majority of the counties in the State.	SSO
Government-owned	0/1	An indicator equal to one if the bank is owned by the local government.	BBK
Quarterly bank-level controls			

Log (Total assets)	€	The logarithm of total assets, measured in €.	Bista
Share of stocks of total assets	%	The share of stocks relative to total assets.	Bista
Share of cash of total assets	%	The sum of cash, vault cash, and notes relative to total assets.	Bista
Share of corporate loans in total lending	%	Corporate credit relative to total non-monetary financial institutions (MFI) credit.	Bista
Share of household lending in total lending	%	Household credit relative to total non-MFI credit.	Bista
Share of government lending	%	Domestic government borrowing relative to total non-MFI credit.	Bista
Share of lending to foreigners	%	Foreign non-MFI counterparties relative to total non-MFI credit.	Bista
Annual bank-level controls			
Tier 1 capital ratio	%	Core capital divided by risk-weighted assets.	BBK
Cost-income ratio	%	Administrative expenses for personnel, depreciation of fixed assets, rent, and other overhead relative to operating result.	BBK
Share of fee income	%	Revenues from fees relative to total operating income.	BBK
Return on equity	%	Operating return relative to gross equity.	BBK
Ratio of ST assets to ST liabilities	%	Liquid assets with a maturity of up to one month relative to liabilities with a maturity of up to one month.	BBK
Share of non-performing loans	%	Audited loans with identified need for value correction relative to total loans.	BBK

Notes: BBK is the acronym for Deutsche Bundesbank, the German Central Bank. Bista abbreviates the monthly balance sheet statistic of BBK. SHS abbreviates the security holdings statistic (WP-Invest) of BBK. SSO abbreviates State Statistical Offices.

Appendix Table 2. Timing and existence of State ratings

	Moodys		Standard and Poors	
	Rating	*Date*	*Rating*	*Date*
Baden-Württemberg	Aaa	14.12.1999	AAA	06.03.2012
Bayern	Aaa	20.01.2000	AAA	19.01.2012
Berlin	Aa1	15.12.2006		
Brandenburg	Aa1	15.12.2006		
Bremen				
Hamburg				
Hessen			AA	29.11.2005
Mecklenburg-Vorpommern				
Niedersachsen				
Nordrhein-Westfalen	Aa1	04.03.2014	AA-	20.12.2004
Rheinland-Pfalz				
Saarland				
Sachsen			AAA	19.01.2012
Sachsen-Anhalt	Aa1	15.03.2007	AA+	16.12.2010
Schleswig-Holstein				
Thüringen				

Notes: This table reproduces ratings reported in "Issuer Guide Deutsche Bundesländer 2015" (Nord LB). Only State ratings as opposed to occasional bond issues are considered. Quarters before the reported time of rating are considered not rated. If the rating was conducted prior to the start of the sample in q4:2005, we consider the rating as of the start of our sample. Ratings are converted into 16 categories in ascending order of quality, which corresponds to the number of prime ratings by both rating agencies.

Appendix Table 3. Banks with and without State debt holdings

	Local savings banks		Local cooperatives	
	Yes	*No*	*Yes*	*No*
2005	88	354	86	1141
2006	96	347	88	1140
2007	89	353	73	1154
2008	79	357	65	1127
2009	103	326	141	1012
2010	117	310	169	965
2011	128	297	171	944
2012	137	284	177	921
2013	154	261	181	893

Notes: This table shows the number of local savings and cooperative banks that hold and do not hold sub-sovereign debt from the State where they are headquartered.

Appendix Table 4. Gross total assets and State bonds

Banking group	Variable	Mean	Median	SD	N
Government-owned	Gross total assets in Euro	2,443,834,572	1,515,403,456	3,317,372,052	14,262
	Own State debt in Euro (market value)	2,534,212	0	7,588,939	14,262
	Own State debt in Euro (nominal value)	2,495,484	0	7,531,873	14,262
Cooperative banks	Gross total assets in Euro	578,379,025	279,799,504	1,423,717,098	38,302
	Own State debt in Euro (market value)	503,580	0	3,069,191	38,302
	Own State debt in Euro (nominal value)	494,847	0	3,041,425	38,302

Notes: This table shows descriptive statistics for the components of the main dependent variable in levels. The data are measured in Euros and separated by banking group. The market value of sub-sovereign debt denotes the value of the financial assets according to the German accounting rules. The nominal value depicts the face value of fixed income instruments.

Appendix Table 5. Politics, banks, and sub-sovereign debt: Non-linear regression models

	State bonds / Total assets			
	(1)	(2)	(3)	(4)
	Tobit	Poisson	Logit	Probit
Misaligned × Government-owned	0.0430***	0.1473***	0.2078**	0.1639***
	(0.0064)	(0.0445)	(0.0892)	(0.0499)
Observations	52,288	52,288	15,306	52,288
Bank FE (Or RE in probit)	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes
County FE	No	Yes	No	Yes
Annual controls	Yes	Yes	Yes	Yes
Quarterly controls	Yes	Yes	Yes	Yes

This table presents results from panel Tobit (column (1)), zero-inflated Poisson (column (2)), panel Logit (column (3)), and panel Probit (column (4)) regressions of State bond holdings on bank-specific variables and on indicators of political connections. The dependent variable in all columns is the bank's total holdings of bonds issued by the State where the bank is headquartered, divided by the bank's gross total assets. *Misaligned* is an indicator variable equal to one if the party with the most votes obtained during the latest regional elections in the county where the bank is domiciled is different from the leading party in the coalition forming the State government after the latest State parliamentary elections. *Government-owned* is an indicator variable equal to one for banks that are ultimately owned by the local government, i.e. local savings banks. The regressions include all control variables from Table 4 (coefficients not reported for brevity). Standard errors are clustered at the bank level. */**/*** denote significance at the 10%/5%/1% levels, respectively. For variable definitions and sources, see Appendix Table 1.

Appendix Table 6. Politics, banks, and sub-sovereign debt: Placebo elections with different lags

	State bonds / Total assets		
	(1)	(2)	(3)
	1 year lag	2 years lag	3 years lag
Misaligned × Government-owned	0.0277	0.0068	-0.1485
	(0.0477)	(0.009)	(0.1120)
Observations	52,288	52,288	52,288
R-squared	0.665	0.665	0.665
Bank FE	Yes	Yes	Yes
County × Quarter FE	Yes	Yes	Yes
Annual controls	Yes	Yes	Yes
Quarterly controls	Yes	Yes	Yes

Notes: This table presents falsification regression results of State bond and other securities holdings on bank-specific variables and on indicators of political connections. The dependent variable in all columns is the bank's total holdings of bonds issued by the State where the bank is headquartered, divided by the bank's gross total assets. Column (1) replicates the regression from Table 5, column (4). Columns (2) and (3) shows a specification with state elections and associated outcomes simulated to occur two and three year earlier than the actual date, respectively. *Misaligned* is an indicator variable equal to one if the party with the most votes obtained during the latest regional elections in the county where the bank is domiciled is different from the leading party in the coalition forming the State government after the latest State parliamentary elections. *Government-owned* is an indicator variable equal to one for banks that are ultimately owned by the local government, i.e. local savings banks. The regressions include all control variables from Table 4 (coefficients not reported for brevity). Standard errors are two-way clustered at the county and quarter level. */**/*** denote significance at the 10%/5%/1% levels, respectively. For variable definitions and sources, see Appendix Table 1.

Appendix Table 7. Excluding single-county States and Bremen

	State bonds / Total assets				
	(1)	(2)	(3)	(4)	(5)
	Baseline	Excluding Berlin	Excluding Bremen	Excluding Hamburg	Excluding all three
Misaligned × Government-owned	0.0195**	0.0197**	0.0196**	0.0194**	0.0197**
	(0.0077)	(0.0077)	(0.0077)	(0.0077)	(0.0077)
Observations	52,288	52,189	52,123	52,024	51,760
R-squared	0.596	0.596	0.595	0.596	0.596
Bank FE	Yes	Yes	Yes	Yes	Yes
County × Quarter FE	Yes	Yes	Yes	Yes	Yes
Annual controls	Yes	Yes	Yes	Yes	Yes
Quarterly controls	Yes	Yes	Yes	Yes	Yes

Notes: This table presents OLS regression results of State bond holdings on bank-specific variables and on indicators of political connections. Column (1) replicates the baseline result from column (6) in Table 4. The three subsequent columns exclude one by one those states with only one county where no within-state variation of the *Misaligned* indicator is possible. Column (5) excludes all three city-states: Berlin, Bremen, and Hamburg. The dependent variable in all columns is the market value of the bank's total holdings of bonds issued by the State where the bank is headquartered, divided by the bank's gross total assets. *Misaligned* is an indicator variable equal to one if the party with the most votes obtained during the latest regional elections in the county where the bank is domiciled is different from the leading party in the coalition forming the State government after the latest State parliamentary elections. *Government-owned* is an indicator variable equal to one for banks that are ultimately owned by the local government, i.e. local savings banks. The sample period is q4:2005 until q3:2013. Standard errors are two-way clustered at the county and quarter level. */**/*** denote significance at the 10%/5%/1% levels, respectively. For variable definitions and sources, see Appendix Table 1.