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Keywords: Home bias; Information asymmetries; Eurozone crisis; Sovereign debt.

JEL Classification Numbers: F21, F34, F36, G01, G11, G21.

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1. Introduction

Can domestic banks act as lightning rods for government bonds in the midst of a financial storm? On the contrary, by now, the diabolic loop between sovereign and bank credit risks has been very well documented. Increasing risk pressures in the banking sector may put unnecessary burden on public finances due to potential future bailout costs and negative spillovers to the lending in real economy. In turn, a spike in the sovereign credit risk might trigger a deterioration in the banking sector through losses on banks' government bond holdings and the loss of credibility for future government support (Acharya, Drechsler, and Schnabl, 2014). However, despite this adverse feedback mechanism, the link between governments and their domestic banks may have a silver lining: local banks might have soft information advantages regarding their clients thanks to their "daily exposure to local news stories, firsthand knowledge of the local economy, and personal relationships with key people at the issuing body" (Butler, 2008). During market downturns, such informational advantage might lead them to act as buyers of last resort absorbing the local assets while (potentially uninformed) foreign banks shed their exposures in panic. A role for soft private information and the resulting panic by less informed agents are consistent with the evidence that government bond spreads moved in a self-fulfillingly pessimistic way during Eurozone crises and fell out of touch with publicly observable hard information regarding the solvency of individual countries (De Grauwe and Ji, 2013; Saka, Fuertes, and Kalotychou, 2015).

In this paper, I present evidence for the latter view. I show that when European banks retreated from the sovereign debt markets of the crisis countries in the Eurozone, they did less so for the countries to which they were informationally closer. To put it another way, *ceteris paribus*, a bank whose home country has more information regarding a target country increases its relative exposure when the sovereign risk rises in the target country. This result holds even among the foreign banks and does not depend on the alternative mechanisms such as banks' risk-shifting tendency, the political strength of the home country or the exchange rate/redenomination risk. Unlike the competing hypotheses that are specific to the crisis episodes, I show that information channel is highly active even during the post-crisis period. Furthermore, both direct financial information (measured in bank branches or mergers) and aggregate information channels (such as common language across countries) seem to play a role. Hence, I interpret these findings as supportive of the view that informational asymmetries among banks played a key role in the recent fragmentation across Eurozone sovereign debt markets.

Figure 1 clearly illustrates the puzzling phenomenon that this paper aims to address. Since early 2010, Eurozone banks have lifted up their portion of the domestic sovereign

debt, especially in crisis countries. That is, at the peak of the government debt problems, banks started accumulating domestic government bonds. The initial rise and the gradual reversal of this trend -along with the respective bond spreads- is visible only in periphery part of the Eurozone. In contrast, the corresponding figure in core Euro countries seems to have been more or less stable throughout the Eurozone crisis. Intriguingly, the observation still stands in Figure 2 even after correcting for how much of the domestic debt the banks should hold in a standard Capital Asset Pricing Model (CAPM).[1]

[Insert Figure 1 and Figure 2 near here]

With the dismal interaction between sovereign and banking crisis in the background, most of the recent literature attributed this observation to the argument of financial repression/moral suasion (Becker and Ivashina, 2018; De Marco and Macchiavelli, 2015; Ongena, Popov, and Van Horen, 2016). In other words, in order to gain relief from crisis and to be able to rollover their debts, governments may have (implicitly) forced the banks in their jurisdiction to increase domestic sovereign exposures. Pointing to the highly positive correlations between "government-relatedness"[2] and public bond holdings of the banks, these papers conclude that there has been a clear tendency of troubled governments to impose moral suasion on the banks that they can control. From this perspective, the resulting home bias has been mostly involuntary for domestic banks and created an unnecessary burden on the financial health of the banking sectors in crisis countries.

Another argument for the repatriation of public debt from non-crisis to crisis countries is based on the assumption that governments would be less willing to default if their debt was held by the domestic agents rather than foreign ones due to the costs such a default would inflict on the domestic economy (Broner, Martin, and Ventura, 2010; Gennaioli, Martin, and Rossi, 2014b). Hence, in the existence of well-functioning secondary markets, sovereign debt should naturally be reallocated back to host countries as domestic agents will attach a higher value to these securities than their foreign counterparts. According to this view, the resulting home bias has been a dark side-effect of secondary bond markets and might have even benefited the creditors if it eventually decreased governments' willingness to default. With respect to this argument, Figure 3 illustrates the evolution of the home bias for different types of creditors in the Eurozone periphery and core countries. Though it is clear from Panel A that resident banks in the periphery accumulated a big portion of domestic sovereign debt, this is hardly true for other non-bank residents in the same countries, which goes against

[1] As discussed later in the Data section, a simple asset pricing model would predict that banks must hold sovereign debt in proportion to the relative weight of their sovereign portfolio in the universe of total sovereign bond holdings.

[2] Either through direct government ownership of the bank or political links in the board of directors.

the intuition of Broner et al. (2010) and asks for a further link between resident banks and government debt.[3]

[Insert Figure 3 near here]

This paper proposes an additional channel on top of the existing ones and argues that European banks' increasing sovereign home bias in crisis countries may be related to one of the most conventional theories of home bias in international trade and asset-pricing literature: informational frictions (Brennan and Cao, 1997; Van Nieuwerburgh and Veldkamp, 2009; Dziuda and Mondria, 2012).[4] As true for risky asset classes (e.g. equity), home bias usually exists when there is an informational advantage in favor of domestic agents. In tranquil periods and well-integrated markets such as in Europe, one would not expect to observe a high level of home bias in risk-free sovereign debt. Nonetheless, in crisis episodes during which government debt gets risky, it becomes crucial to have soft information regarding the true repayment intentions of the government and thus market behavior might deviate from publicly observed hard information such as debt/GDP ratios or growth rates of individual countries. In that case, uninformed foreign banks may naturally rush to exit these markets in panic, selling most of their exposures to domestic banks at fire-sale prices. Such market trajectory is indeed compatible with the evidence in De Grauwe and Ji (2013) and Saka et al. (2015) who detect the apparent disconnection between bond spreads and the publicly observable hard information (i.e., country fundamentals) during the Eurozone crisis.

On one hand, literature suggests that banks' lending behavior is largely influenced by the proximity to the borrower since more proximate lenders could gain an edge in gathering soft information about their customers (Agarwal and Hauswald, 2010). If so, this would lead borrowers, especially the relatively small and opaque ones, to borrow more from informationally closer lenders. On the other hand, it is tempting to think that soft information should not matter in government debt markets. In tranquil times, when sovereign debt is considered risk-free, all banks are likely to follow the publicly observable signals (such as tax revenue or fiscal balance) as indicators for the strength of government's ability to pay back its debt. This would lead to a uniform pricing of sovereign bonds across banks and thus to a low level of home bias.[5] Nevertheless, an interesting feature of the government debt markets

[3]Given the importance of the banking sectors in national economies, it is possible that governments' default incentives might be more sensitive to banks' sovereign holdings than to those of other residents, which could explain the observed patterns in Figure 3. I will revisit this debate later in Section 4.3 and Section 4.5 will make it clear that the evidence on information channel is orthogonal to such potentially confounding factors.

[4]See the following papers, among many others, for the crucial role informational frictions play in international as well as intranational trade flows: Chen (2004), Fink, Mattoo, and Neagu (2005), Allen (2014) and Steinwender (2018).

[5]Figure 3 is consistent with this prediction as the average portion of sovereign bonds that resident banks

is that, while corporate bankruptcy is always about the (in)ability of a company to repay, a sovereign default is -in most cases- a political decision and directly related to the degree of governing party's willingness to cut back government spending and/or increase tax rates. This crucial difference between corporate and sovereign debt arises due to the lack of a legal mechanism to enforce repayment on sovereigns (Panizza, Sturzenegger, and Zettelmeyer, 2009) and makes it especially important in times of stress to have insider information on government's willingness to honor its promises or country's political capacity to endure further budget cuts. In such times, the increasing noise in perceived country fundamentals may lead to a more heterogeneous pricing of sovereign bonds; and thus informationally distant banks may choose to sell their exposures to local banks who would be receiving a more precise signal regarding the true default risk of the sovereign and thus be better situated to carry such exposures in their balance sheets.

Before teasing out this information channel with a novel bank-level dataset compiled from various stress-tests, transparency and capital exercises of the European Banking Authority (EBA), I start by documenting several empirical patterns on sovereign home bias that are not fully compatible with the recent theories. I first re-confirm that European banks' home bias increased and sovereign debt was indeed reallocated from foreign to domestic banks at the peak of the crisis. Consistent with Acharya and Steffen (2015) and Crosignani (2015), I also find evidence of risk-shifting behavior for banks located in crisis countries; however it is also shown that home bias goes much beyond this behavior. Interestingly, and in contrast with "the secondary market theory" of Broner et al. (2010), this reallocation does not seem to be visible for the domestic agents other than banks. Additionally, I illustrate that, in response to crisis, private forms of debt (retail and corporate) in bank balance sheets have experienced an equally large (if not larger) jump in home bias, tilting towards a more general explanation of the home bias rather than the specific ones applied to sovereign debt in the recent literature.

Finally and most importantly, to identify the information channel, I focus on the banks' foreign country exposures, which helps me minimize the potentially confounding effects of alternative stories that are specific to home country exposures, such as moral suasion or secondary market channels. Then, I take a difference-in-differences approach by comparing the sovereign exposures of foreign banks at different levels of informational closeness with varying levels of sovereign risk for the exposure country. In other words, I estimate the interaction between various information proxies (both current and structural) and sovereign bond spreads, by saturating the panel model with a rich set of fixed effects that take into

hold in both core and periphery countries is similarly low and around 10-15 percent prior to the Eurozone crisis.

account time-varying unobserved factors at bank and exposure country levels as well as constant bilateral linkages between home and exposure countries. These two layers of my identification strategy (informational distance and sovereign risk) assure that I capture the effect of information rather than some unobserved variable as it could be the case in a direct estimation. As a result, I find strong evidence for the argument that foreign banks headquartered in informationally closer territories increase their relative exposures as the sovereign risk rises. This effect is robust to controlling for various alternative channels and changing sample compositions. Interestingly, information seems to matter both in the forms of financial (i.e, bank branch linkages) and general (i.e., newspaper coverage) knowledge regarding the country of exposure. What is even more interesting is that the effects are statistically and economically meaningful even after the end of the Eurozone crisis (mid-2012) and even when very small subsets of the observations are taken into account to avoid the possible interference of other explanations.

Sovereign debt crises in a well-integrated monetary union constitutes an ideal setting to isolate the effect of information asymmetry on bank behavior. Avoiding the cross-country differences in exchange rates, liquidity provision or collateral requirements, this paper presents evidence that information (or the lack thereof) played a significant role in recent fragmentation across Eurozone debt markets. Thus, revisiting the initial question, it is possible that domestic banks may have acted as lightning rods collecting the sovereign debt while governments suffered from informational frictions as foreign banks left the market in panic, triggering a financial storm. Despite the so-called doom loop between the two, domestic banks' relationship with their governments may have an underexplored silver lining.

The rest of the paper is organized as follows. Next section briefly outlines the relevant background literature. Section 3 describes the data. The empirical methodology and results are presented in section 4. Final section concludes the paper.

2. The Related Literature

2.1. Recent home bias in the Eurozone

The main motivation of the paper comes from the recently-aroused interest in academic and policy circles on the causes of rising fragmentation -home bias- across Eurozone sovereign debt markets. One of the earlier contributions by Becker and Ivashina (2018) illustrates the positive association between country-level government ownership in the banking sector and domestic government bond holdings of the banks. They further extend this finding by showing that crisis-country banks with a higher number of government-affiliated board

members hold more government bonds in their balance sheets. De Marco and Macchiavelli (2015) follow a similar path to point out that, upon receiving liquidity injections, only politically-related European banks increased their exposure to domestic sovereign debt. Using a proprietary bank-level dataset from European Central Bank (ECB), Ongena et al. (2016) demonstrate that, compared to foreign ones, domestic banks were more inclined to increase their exposures when governments had to rollover large chunks of outstanding public debt. Many other recent papers confirm these observations (Horváth, Huizinga, and Ioannidou, 2015; Altavilla, Pagano, and Simonelli, 2017) and conclude that a moral suasion channel was in operation during Eurozone crisis. Nonetheless, these studies are not always able to rule out the possible information channel that might be active between governments and the related (domestic or public) banks.[6] By constructing an identification strategy based on the informational heterogeneity across foreign banks and thus minimizing the moral suasion concerns, I contribute to this literature and illustrate that information can be a key determinant in explaining the recent sovereign debt reallocation across European banks.

Another strand of home bias literature specific to sovereign debt underlines the assumption that it is harder for governments to default on their promises when most of the debt is held domestically. In such a scenario, government would rather choose not to default since the benefits could be offset by its harm on the domestic economy. Hence, in expectation of this by local agents, government debt will flow back to the host country during times of rising sovereign risk (Broner et al., 2010). In a recent paper, Brutti and Sauré (2016) present confirming evidence in the context of Eurozone crisis by demonstrating that debt of the crisis governments tended toward those banks whose countries were politically more powerful in the Euro area, implying that debt reallocation was mainly driven to discourage the troubled governments from declaring bankruptcy. Relatedly, for the identification of the information channel in this paper, I control for the political strength of the banks' home countries but cannot find consistent evidence in favor of the theory. Importantly, inclusion of such controls does not change my main results in any meaningful way.

A related literature focuses on the risk-shifting tendency of the undercapitalized banks. According to this argument, banks with low capital ratios prefer high-risk instruments such as the government bonds of crisis countries so that the shareholders would benefit from a resurrection of the country while their losses would be limited in case of a default. (Acharya and Steffen, 2015; Horváth et al., 2015). However, this argument does not necessarily explain why weak banks would especially risk-shift by accumulating domestic government bonds

[6] "... banks could voluntarily acquire local sovereign debt in a fire sale context due to a local information advantage." and "... strictly speaking, we do not rule out the fire sale explanation in this paper" (Becker and Ivashina, 2018, p. 4-5)

rather than the bonds of other governments struck by crisis. In line with Crosignani (2015), I find evidence that (potentially weak) banks located in crisis countries shift their sovereign portfolios more favorably towards other countries in crisis; but this behavior is found to be much more prominent when it is the domestic government who is in crisis, indicating the need for a further investigation of the link between banks and domestic sovereign bond holdings. Again, results I report on the information channel are very robust to controlling for such risk-shifting incentives for banks.

2.2. Home bias in other markets

There are many studies exploring the home bias in portfolio holdings of different asset classes. The literature mainly focuses on equity holdings (French and Poterba, 1991) whereas a few others investigate the regional biases in international bond portfolios (Lane, 2005). Most of this previous work revolves around three broad categorical explanations for home bias: exchange rate risk, transaction costs and informational frictions (Coeurdacier and Rey, 2013). In the specific context of Europe, with the increasing financial integration and exchange rate stability over the years, it is reasonable to argue that a more realistic culprit for the recently sky-rocketing home bias across various asset classes would be the informational asymmetries.

Brennan and Cao (1997), for example, model the sensitivity to asset-related news when there is a difference between informational endowments of domestic and foreign agents. They illustrate that, in such a scenario, home bias would be positively associated with the negative news as foreign investors would try to infer the local information from past asset prices and react more to such news.[7] On a similar path, Van Nieuwerburgh and Veldkamp (2009) show that, in the existence of (initially small) informational differences, costly information acquisition process may boost the agents' home bias. Lastly, Dziuda and Mondria (2012) demonstrate that, even with sophisticated investors such as investment funds, home bias may arise due to the fact that investors would be better at judging the performance of fund managers when they invest in local assets rather than foreign ones. Therefore, one might observe home bias even in the portfolios of highly sophisticated institutions such as banks or mutual funds.

Following the intuition that informational frictions might lie behind the widely-observed home bias for various asset classes,[8] many researchers have empirically studied the effects of several forms of informational distance on portfolio holdings. For instance, Coval and

[7]Inspired by Brennan and Cao (1997), there is a stream of studies in the asset-pricing literature that detect the foreign investors' trend-following behavior. See Choe, Kho and Stulz (1999; 2005); Grinblatt and Keloharju (2000); Froot, Oconnell, and Seasholes (2001); Griffin, Nardari, and Stulz (2004); Richards (2005).

[8]For further evidence on the informational advantage that domestic investors may hold vis-à-vis foreign investors, see Kang and Stulz (1997); Kim and Wei (2002) and Kaufmann, Mehrez, and Schmukler (2005).

Moskowitz (1999, 2001) find that geographical proximity is crucial for US investors' portfolio composition and the risk-adjusted returns, even within the same country. Grinblatt and Keloharju (2001) discover that investors might be biased towards firms that are close to them in terms of physical location, culture and language of communication. Hau (2001) exemplifies a case in which professional traders located in Germany or in German-speaking cities make more profit in German stocks. In a cross-country study more closely related to the paper at hand, Portes and Rey (2005) conclude that geographical distance matters for cross-border capital flows; however it mostly proxies the effects of other informational variables such as bank branches across countries or telephone call traffic. Finally, Guiso, Sapienza, and Zingales (2009) show that citizens' trust towards other countries, partly determined by their information sets, affects many forms of international economic exchange such as trade flows as well as equity and bond portfolio holdings. I borrow the empirical measures of informational distance (such as bank branches, common language or press coverage) from this literature and complement it by extending the evidence to the context of banks' government bond holdings.

3. Data Description

The main body of data that I use in the paper comes from various stress-tests, transparency and recapitalization exercises that are undertaken by the European Banking Authority (EBA) over the course of 5 years for a large set of European banks covering 30 members of the European Economic Area (EEA).[9] Table 1 lists these exercises and the disclosure dates for each one of them together with how many banks and which information dates were covered. 10 data time-points start from the first quarter of 2010 and goes all the way to the second quarter of 2015, thus covering the start, rise and fall of the Eurozone crisis. Sovereign bond holdings are reported for each data time-point while private credit exposures (corporate, retail, etc.) can be found for 6 of these. In each disclosure, the full country-breakdown of each bank's debt portfolio for up to 200 countries can be found.[10] However, to focus on the debt reallocation across Europe, only exposures to 30 EEA countries are included in the sample.

[9]The first of these disclosures was undertaken by the Committee of European Banking Supervisors (CEBS), which was comprised of senior representatives of bank supervisory authorities and central banks of the European Union and later succeeded by the EBA. Its results were made public by national regulators at the time; however EBA does not provide the related data. Hence, this dataset was obtained from the Peterson Institute for International Economics while all other datasets were acquired from EBA.

[10]Except the first disclosure undertaken by CEBS in which only exposures to 30 European countries are available.

[Insert Table 1 near here]

The main banks involved in the exercises mostly stay the same even though some smaller banks are added and subtracted from one exercise to another. All exposures are consolidated at the parent bank level and each exercise involves at least 65% of the total banking assets in Europe and 50% of the banking sector of each EEA member. Compared to other studies using proprietary datasets from European Central Bank (Ongena et al., 2016; Altavilla et al., 2017), EBA data cover banks from a wider range of countries (including non-Eurozone) and documents finer granularity in terms of full country-breakdowns of sovereign exposures at bank-level.

I am mainly interested in what portion of a sovereign's total debt is held by a specific bank. Thus the main variable of interest ($SovereignPortion_{b,c,t}$) measures each bank's (b) nominal exposure to a certain country (c) at a certain time-point (t) divided by the total nominal exposure of all the banks for that country at that time. That is;

$$SovereignPortion_{b,c,t} = \frac{NominalExposure_{b,c,t}}{\sum_{b} NominalExposure_{b,c,t}}$$

It is important to note that this measure is independent of the valuation technique used for the bank-level sovereign exposures as long as all the banks apply the same methodology at a given point in time, which is the case in my sample as all disclosures are centrally directed and homogenized by the EBA. This helps me better quantify the relative distribution of sovereign debt across banks. Furthermore, by construction, $SovereignPortion_{b,c,t}$ does not depend on the price changes as these are automatically reflected in all banks' nominal exposures and thus does not change the particular portion that a specific bank holds out of the total debt. Therefore, it also constitutes an ideal measure to understand the reallocation of sovereign debt over time.[11]

In line with the mainstream literature on home bias (Ahearne, Griever, and Warnock, 2004; Coeurdacier and Rey, 2013), I also create an alternative variable that takes into account an optimal portion of sovereign debt that should be held by a bank according to a standard Capital Asset Pricing Model (CAPM). This variable ($SovereignPortionBias_{b,c,t}$) takes the difference between our main variable of interest ($SovereignPortion_{b,c,t}$) and the portion that is suggested by the CAPM model ($SovereignPortionCAPM_{b,t}$).[12] As conventional in the

[11] As alternative dependent variables, I later use sovereign exposures directly in log form [$log(1 + NominalExposure_{b,c,t})$] and also as a percentage of the total sovereign debt measured by the ECB for each country-time point.

[12] Notice that, in an ideal CAPM world, the optimal portion that a bank would hold in equilibrium for any country of exposure should depend only on the size of the bank's sovereign portfolio and the size of the

literature, this difference is standardized by the share of other banks' portfolios in the global portfolio ($1 - SovereignPortionCAPM_{b,t}$).[13] That is;

$$SovereignPortionBias_{b,c,t} = \frac{SovereignPortion_{b,c,t} - SovereignPortionCAPM_{b,t}}{1 - SovereignPortionCAPM_{b,t}}$$

where

$$SovereignPortionCAPM_{b,t} = \frac{\sum_{c} NominalExposure_{b,c,t}}{\sum_{b,c} NominalExposure_{b,c,t}}$$

If bias variable $SovereignPortionBias_{b,c,t}$ takes the value of 1, it means all of the country's debt is held by the specific bank, thus perfect bias. If it is zero, that means the bank holds exactly the portion of the debt suggested by the CAPM model, thus no bias. For the later section of the study, I create the corresponding variable for retail exposures ($RetailPortion_{b,c,t}$) exactly in the same way as described above and then merge it with the sovereign exposure variable under a single variable name ($DebtPortion_{d,b,c,t}$) where (d) denotes the type of debt in consideration.

To construct the dummy variable $Crisis_{c,t}$, the daily yields of 10-year maturity bonds of 30 European countries are obtained from Datastream.[14] In the next step, I follow a similar approach to Brutti and Sauré (2016) and categorize a country as "in crisis" ($Crisis_{c,t}$) if a country is a Euro member and its average daily bond spreads (with respect to Germany) for the previous three months was above 400 basis points.[15]

To be able to differentiate between different types of creditors, a measure of sovereign holdings for non-bank agents is needed. Unfortunately, EBA datasets only contain information about banks. Hence, I resort to a country-level dataset compiled from various national sources by Merler and Pisani-Ferry (2012), which lists the portion of a country's total debt held by its resident banks and non-bank residents.[16] Observations cover 11 European coun-

global sovereign portfolio, meaning that it does not depend on the specific country of exposure (c).

[13]None of my results depend on this standardization.

[14]Bond yields for two countries (Estonia and Liechtenstein) are not available on Datastream; so these observations are dropped from the sample.

[15]Robustness checks with 300bps and 500bps thresholds, available upon request, do not lead to any meaningful change in my estimations.

[16]Importantly for our purposes, 'other residents' category does not include the public agencies or central banks, so we can assume that these are private non-bank parties/institutions.

tries[17] at quarterly intervals, starting from 1990s. For consistency, I choose the same period covered by the EBA dataset, from 2010-Q1 to 2015-Q2. For the panel estimations, I create a dependent variable called $DomesticPortion_{c,k,t}$, which measures the portion of a country's (c) debt held by a certain domestic creditor (k: *ResidentsBanks* or *OtherResidents*) at a certain time-point (t).

As a last step, in order to carefully measure the informational linkages across countries, I construct 8 proxies in line with the previous literature (Portes, Rey, and Oh, 2001; Portes and Rey, 2005; Guiso et al., 2009). All of these variables are intended to absorb varying as well as overlapping aspects of the bilateral information sets available to each bank in my sample. First one, $Branches_{l,c}$, represents the total number of bank branches in the exposure country of the bank which ultimately belong to a bank from its home country.[18] This proxy aims to capture the intensity of the financial information exchange between two countries, which probably makes it the most relevant information proxy for the banks in my sample. Unfortunately, however, branch information cannot be derived historically and SNL Financial only provides the most recent data available (as of February, 2016). Despite the possibility that Eurozone crisis itself may have changed the ownership network of bank branches across European countries, it is difficult to say towards which direction this kind of a bias would drive my estimates. Nevertheless, to overcome potential endogeneity concerns, I propose another proxy for bilateral financial information flows, which -to the best of my knowledge- has not been used in this context before. This alternative variable, $Mergers_{l,c}$, is derived from SDC Platinum and measures the total number of bank mergers that occurred between the home country and the exposure country in the years starting from 1985 all the way up to the pre-crisis year of 2008 in Europe. The downside of focusing on bank mergers is obviously the risk of underestimating other potential channels via which financial institutions may set up branches in foreign countries, such as greenfield investments. The identifying assumption here is that the method of foreign bank entry does not meaningfully differ across European countries, or at least orthogonal to the country's sovereign risk.

For a more aggregated information variable that is not specific to financial knowledge transmission and can point out the overall familiarity between the citizens of different coun-

[17] These are Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain and United Kingdom. Data for Belgium and Finland can only be found annually; so I linearly interpolated the data to get quarterly values for these two countries.

[18] This variable is created by taking all of the ultimate-parent banks located in 30 EEA countries available in SNL database, independent of whether the bank is included in EBA dataset or not. The purpose here is to capture the non-time-varying banking linkages across countries. Hence, it is important to consider the full sample available rather than only the restricted EBA sample (though results do not depend on this). This data covers 137,284 bank branches in total which is 92% of all bank branches (149,242) in these countries, estimated using World Bank data for 2014 (see http://data.worldbank.org/indicator/FB.CBK.BRCH.P5).

tries in my sample, I follow Guiso et al. (2009) and search the headlines of all news articles covered inside each country's highest circulated newspaper in Factiva for the years between 2003 and 2007.[19] Specifically, in order to construct $Press_{l,c}$, I record the frequency of each country or its citizens being mentioned in another country's newspaper headline and divide it by the total number of times in which the country or its citizens are mentioned in any newspaper in my sample. This simple index summarizes the relative familiarity of a country and its citizens to other countries. Still, it should be taken with a grain of salt; because newspapers are not neutral information transmitters and possibly biased towards covering negative/dramatic events that are likely to exaggerate the previously-held stereotypes (Hamilton, 2004).

The three measures introduced above represent current sources of information between banks and countries. Additionally, literature suggests a few structural variables that may capture linguistic, historical and geographical roots of information transmission. One of the most important structural factors is to share a common language which has been consistently shown to have a substantial positive impact on investors' asset holdings (Grinblatt and Keloharju, 2001; Hau, 2001). Accordingly, I employ a variable, $Language_{l,c}$, which takes the value of 1 if at least 9% of the population in both countries speaks the same language and 0 otherwise.[20] Another indicator that may absorb the common cultural and historical heritage across different nations which may make them more familiar with each other is their colonial ties, $Colony_{l,c}$, which is again a dummy variable picking up the pairs of countries that have ever had a colonial relationship in the past. In terms of geographical proximity, which may ease the flow of information between two countries, I resort to the following two variables: $Distance_{l,c}$, the log distance in kilometers between the capital city of the bank's home country (l) and the capital city of the exposure country (c);[21] and $Border_{l,c}$, which is a dummy for pairs of countries sharing a common border. Note that these two geographical variables are usually treated as noisy proxies of real information linkages and it is also likely that they may inversely pick up investors' diversification incentives to hold less correlated and thus more distant assets in which case the same proxies may correlate in the opposite direction with the banks' government bond holdings. Structural variables in this part all come from Mayer and Zignago (2011), except geographical distance which is derived via MapQuest.

[19] For Cyprus and Malta, there is no pre-crisis press coverage in Factiva. Thus, I use the most recently available coverage for the period furthest away in time from Eurozone crisis, between 2016 and 2018.

[20] Focusing instead on the shared official languages produces very similar results.

[21] Specifically, this variable is defined as $log(x_{l,c} + 1)$ and naturally takes the value of zero for domestic observations ($l = c$). I have also experimented with various distance measures from Mayer and Zignago (2011) that take into account countries' intra-national distances consistent with the international ones. None of them lead to any significant change in my results.

On top of the more standard information measures described so far, I also include a dummy for the shared legal origins across countries ($Legal_{l,c}$) derived from La Porta, Lopez-de Silanes, and Shleifer (2008). Given the large literature on the exogenous introduction of legal traditions and how they may later lead to heterogeneous outcomes in economic rules and regulations, one could argue that commonality of legal systems may serve as an informational tool for investors. Accordingly, it might be easier for the banks in my sample to invest in a foreign country with a similar legal system to that of their own country simply because they would face less uncertainty regarding financial rules and regulations. Keep in mind that legal traditions are also likely to be highly correlated with cultural traditions that may not have much to do with actual information (Guiso et al., 2009).

Table 2 gives summary statistics for these variables. It is important to note that for *SovereignPortion* variable, more than half of the observations contain zero values. However, these are meaningful zeros, implying that the bank does not have any exposure to that sovereign at that certain point in time. When the mean levels across general and domestic samples are compared, one can clearly see the inclination of the banks to hold a higher fraction of the government debt of their own countries. The same can also be said for retail debt (*RetailPortion*). When we compare different debt categories for domestic bank samples, we see that a bank on average holds a higher fraction of its country's retail debt (16.44%) than it holds its country's sovereign debt (12.56%). This observation is consistent with the information asymmetry view of home bias, predicting that -in general- informationally more opaque assets (private debt) should suffer more from home bias than other more standardized assets (public debt) would do.

[Insert Table 2 near here]

4. Methodology & Results

4.1. Sovereign home bias during crisis

Before I lay out my main analysis and show how information channel -in interaction with sovereign risk- may affect banks' government bond holdings, I start by presenting several empirical patterns which I find a bit difficult to fully reconcile with the existing mechanisms explaining the rising home bias in the context of Eurozone crisis. As the first step, I empirically test the effect of crisis on the sovereign home bias of the European banks. For this purpose, I employ a simple *difference-in-differences (DD)* methodology, which assumes that banks' home bias should share a parallel trend in the absence of crisis. A simple visual check

on Panel A of Figure 3 confirms the fact that banks' home bias in core and periphery countries moved in tandem with each other prior to the Eurozone crisis, which provides assurance regarding the validity of this assumption. Therefore, I go on to estimate the following model:

$$SovereignPortion_{l,b,c,t} = \beta_1(Crisis_{c,t} \times Domestic_{l,c}) + \beta_0 Domestic_{l,c} + \theta_{b,t} + \gamma_{c,t} + \varepsilon_{l,b,c,t} \quad (1)$$

where (l) denotes the home country of the bank, (b) identifies the specific bank, (c) is for the country of exposure and (t) specifies the time dimension. All variables are constructed as previously explained in the Data Description section. Controls include a broad set of fixed-effects at the levels of *Bank*Time* ($\theta_{b,t}$) and *ExposureCountry*Time* ($\gamma_{c,t}$). Thus, the model controls for the overall effects of the crisis both at the home country (since banks never change their home country) and exposure country levels and *Crisis* dummy can only enter the regression in an interaction term. Additionally, $Domestic_{l,c}$ is a dummy variable which is equal to 1 if the bank's headquarters are located in the country of exposure (i.e., $l{=}c$). In this model, β_0 should give us an idea about the general level and significance of the sovereign home bias in European banks and β_1 measures the additional effect of the crisis on this home bias. Same model is also estimated for the alternative dependent variable with CAPM adjustment ($SovereignPortionBias_{l,b,c,t}$).

Results are presented in Table 3. Columns I-II and V-VI confirm the previous literature that banks do have home bias in their sovereign debt holdings. It is economically meaningful as well at a level around 12.6%. Given that average sovereign holding in our sample is around 1.2%, this finding clearly illustrates that a bank holds a much bigger portion of a country's debt when it comes to its own country. Columns III-IV and VII-VIII of the same table ratifies another observation that is consistent with the previous literature: the sovereign home bias of domestic banks increases during times of crisis (Gennaioli, Martin, and Rossi, 2014a; Brutti and Sauré, 2016). The effect is economically huge: the portion of a country's debt held by a representative domestic bank almost doubles in response to crisis.[22] Hence, the link between a sovereign debt crisis and the absorption of government bonds by the domestic banks is arguably established at this stage. However, with this simple observation, it is not yet possible to differentiate among alternative channels that may lead to that rising home bias.

[Insert Table 3 near here]

[22]This result is also compatible with the recent bank lending literature showing that, during a financial crisis, international banks demonstrate a stronger home bias in terms of syndicated loan issuance (Giannetti and Laeven, 2012) or cut the credit less in markets that are geographically close (De Haas and Van Horen, 2013).

4.2. Risk-shifting in crisis-country banks

Findings in Table 3 are compatible with information asymmetry, secondary markets or moral suasion stories of the home bias. One may also argue that banks in crisis countries are especially weakly-capitalized, which drives them to invest more in their home country bonds to benefit from shifting the risk onto their creditors (Crosignani, 2015). However, if this is the case, one would expect these banks to also invest in other high-risk countries.

To check for the risk-shifting tendency of banks located in troubled countries, I estimate the following model and separate the home bias phenomenon from the risk-shifting story:

$$\begin{aligned} SovereignPortion_{l,b,c,t} = \beta_2(Domestic_{l,c} \times Crisis_{c,t} \times StressedBank_{l,t}) \\ + \beta_1(Crisis_{c,t} \times StressedBank_{l,t}) + \beta_0 Domestic_{l,c} + \theta_{b,t} + \gamma_{c,t} + \varepsilon_{l,b,c,t} \quad (2) \end{aligned}$$

where $StressedBank_{l,t}$ is a dummy variable representing those observations in which the home country of the bank (l) is considered to be in crisis at a certain time (t). All other variables are constructed as previously explained. Due to time-varying fixed effects at the bank and exposure country levels, *Crisis* and *StressedBank* dummies can only enter the regression in interaction with other variables.[23]

Model 2 checks for risk-shifting behavior of (potentially weak) banks located in crisis countries, in line with Crosignani (2015). If the rising home bias in crisis countries is mainly due to risk-shifting, one should observe a similar tendency of crisis-country banks to shift their portfolios towards all crisis countries no matter if it is domestic or foreign. This is captured by β_1. On the other hand, β_2 measures the additional effect of crisis on domestic exposures that cannot be explained by the general level of risk-shifting in these crisis-country banks.

Columns I and III in Table 4 confirm the earlier predictions by showing that crisis-country banks actually expand their relative exposures to all other crisis countries, potentially risk-shifting. However, as illustrated in columns II and IV, this behavior is much heavier for the home exposures of these banks, thus indicating that risk-shifting may contribute to the rising home bias in crisis countries but is not even nearly a sufficient explanation. The magnitude of response to a crisis in home country is more than tenfold higher than that to a crisis in a foreign country (1041bps vs 85bps). Indeed, banks located in troubled countries have a special preference for their own government bonds which goes much beyond their risk-shifting incentives.

[23] For conciseness, additional two-way interactions of *Domestic x Crisis* and *Domestic x StressedBank* are dropped from the estimation since coefficients are both insignificant and their inclusion does not change the results in any meaningful way.

[Insert Table 4 near here]

4.3. Bank vs. non-bank domestic creditors

As discussed previously, secondary markets hypothesis states that the increase in banks' sovereign home bias might be related to the presumption that government bonds would be more valuable (due to governments being less willing to default) when they are held domestically. Thus, in the existence of well-functioning secondary markets, debt would naturally flow from foreign to domestic agents. In addition, if redenomination (Eurozone break-up) risk was particularly high for crisis countries, this may have pushed up the selling pressure especially for the foreign investors since they may risk ending up with a currency mismatch between their assets and liabilities in case of a crisis country declaring its exit from the Eurosystem (Battistini, Pagano, and Simonelli, 2014).

However, neither of these channels is specific to banks and, if they were the primary drivers, one could expect to see a rising home bias not only for domestic banks but also for other types of agents in crisis countries. Hence, I differentiate the effect of the crisis on the home bias of different domestic agents operating in the same economy. For this purpose, I use the Bruegel dataset at country-level and estimate the following model:

$$DomesticPortion_{c,k,t} = \beta_1(ResidentBanks_k \times Crisis_{c,t}) + \lambda_{k,t} + \gamma_{c,t} + \varepsilon_{c,k,t} \quad (3)$$

where (c) is for the country, (k) is for the creditor type and (t) is for different quarters of the year. $ResidentBanks_k$ is a dummy variable that is equal to 1 if the creditor (k) of the country is its resident banks and zero if it is other private non-bank residents. All other variables are constructed as previously explained. Controls include *Creditor*Time* $(\lambda_{k,t})$ and *Country*Time* $(\gamma_{c,t})$ fixed effects, which should absorb all the time-varying country and creditor characteristics.[24] The coefficient of interest is β_1, which signals whether or not domestic banks behaved somewhat differently compared to other domestic agents.

Table 5 compares the responses of two types of domestic agents during crisis. Column I indicates that crisis leads domestic agents to decrease their home bias on average, although this effect is statistically insignificant. When I separate the differential response of bank creditors, column II confirms that resident banks in crisis countries are more likely to increase their home bias whereas other non-bank residents seem to have moved in the opposite direction. This finding holds even when time-varying shocks for each type of creditor are

[24]Notice that with full saturation of fixed effects, *ResidentBanks* and *Crisis* dummies can only enter the regression in interaction form.

accounted for (columns III-IV) together with national shocks that may impact both creditors at the same time (column IV). Taken at face value, it is not easy to reconcile this result with the "secondary markets hypothesis" which argues that, during times of crisis, government debt should flow back to the home country irrespective of the resident type since government would then prefer keeping its promise not to harm the domestic economy. Despite the possibility that governments might be more sensitive to the default risk of the banking sector and hence it should be reasonable that sovereign debt is particularly channeled to resident banks, one would still expect to see a somewhat positive response for other non-bank residents as well, which does not seem to be visible at all in Table 5.

[Insert Table 5 near here]

A similar interpretation applies to redenomination risk. Even though the Eurozone might have come to the verge of a break-up between early 2010 and mid-2012, it is not easy to conclude that redenomination risk was instrumental in the accumulation of banks' sovereign exposures. To say the least, such hedging motives are not reflected in the behavior of other types of investors residing in the same troubled countries.[25]

4.4. Sovereign vs. private sector home bias

Recent literature has mainly focused on the rise in European banks' home bias in government bonds although this behavior might also be a sub-observation of a more general phenomenon, such as informational frictions that may simultaneously affect multiple asset classes. Thus, I would like to compare the effects of the crisis on home bias across various assets classes held by the same banks. For this purpose, I use a more generalized model as in the following in order to differentiate the relative home bias in two types of debt (i.e, public vs. private sector) both in normal and crisis periods:

$$\begin{aligned} DebtPortion_{d,l,b,c,t} = \beta_3(Sovereign_d \times Crisis_{c,t} \times Domestic_{l,c}) + \beta_2(Crisis_{c,t} \times Domestic_{l,c}) \\ + \beta_1(Sovereign_d \times Domestic_{l,c}) + \beta_0(Retail_d \times Domestic_{l,c}) \\ + \zeta_d + \theta_{b,t} + \gamma_{c,t} + \varepsilon_{d,l,b,c,t} \quad (4) \end{aligned}$$

[25]It is worth noting that, because different investors may tend towards different kinds of domestic assets to hedge for the currency risk, the ideal setting to test for the redenomination risk would be the case in which we could see the creditor decomposition (bank vs non-bank) of several assets classes (such as corporate bonds and shares) rather than only that of sovereign debt. However, in the absence of a more comprehensive dataset and a legitimate argument for why non-bank residents should especially avoid hedging via government bonds, it is safe to say that redenomination risk was not substantial. Also see the extra analysis undertaken in Section 4.5.3 to control for redenomination risk in the tests of information channel.

where $Sovereign_d$ and $Retail_d$ are dummy variables indicating the respective asset classes. All other variables are constructed as previously explained.[26] In addition to the previous set of fixed effects, I include sector dummies (ζ_d) to take into account the differences in overall levels across debt types. The coefficients β_1 and β_0 should give us an idea about the home bias in these different asset classes in general. β_2 reflects the overall effect of the crisis on the home bias for both asset classes and β_3 should tell us if the increase in home bias was stronger for sovereign debt, as would be suggested by the other competing theories of home bias. For instance, Brutti and Sauré (2016, p. 167) interpret their finding for the relatively higher increase in government debt home bias (compared to that of private sector debt) as evidence in favor of the secondary market theory.

To get a better sense of whether sovereign debt was the only asset that has suffered from home bias during crisis, Table 6 draws the following comparison: Columns I and V confirm that there is a significant home bias across both assets classes together. When I separate the home bias for different assets, columns II and VI show that the magnitude of general home bias for retail debt (16.67%) is more than 30 percent higher than the one for sovereign debt (12.63%) and the difference between these two coefficients is statistically significant at 2% level, which is in line with the notion that informationally more sensitive assets such as retail debt should be held in general more intensively by the domestic agents who have an advantage in reaching out the relevant information for such assets (Portes et al., 2001; Portes and Rey, 2005).

[Insert Table 6 near here]

The remaining columns in Table 6 provide even more interesting results. Columns III and VII show that crisis has a positively significant effect on home bias for both asset classes. Columns IV and VIII shed light on the additional response of the sovereign debt to crisis, but there seems to be none. At best, this additional effect is negative (-260bps, though not statistically significant), meaning that it is the retail debt that may suffer more intensely from home bias in times of crisis. It is important to remind here that the crisis variable is constructed using a measure of sovereign risk (i.e, government bond spreads), which makes it a noisier proxy to represent the true credit risk of retail debt, unless sovereign and private sector credit risks are perfectly correlated. Such measurement error could possibly lead to attenuation bias, underestimating the true effect of crisis on domestic retail debt holdings.[27]

[26] To focus on the main coefficients of interest, the two-way interaction of *Sovereign x Crisis* is dropped from the estimation since the coefficient is statistically insignificant and its inclusion does not change the results in any meaningful way.

[27] The difference between unobserved retail sector credit risk and observed sovereign credit risk is likely to be larger during Eurozone crises, which would lead to a correlation between the measurement error and

Hence, the extra impact of crisis on retail debt home bias might be much larger in absolute terms than the estimated coefficient of 260bps.

For robustness, the same analysis is repeated with the corporate debt in Table A1. Not surprisingly, results are very much in line: in general, European banks have a higher home bias in their corporate exposures and, compared to sovereign debt, this bias rises at least equally in response to a crisis in a country.[28] Obviously, these findings are consistent with the expectation that, during crisis episodes that are usually associated with rising informational frictions, most asset types are likely to experience a reallocation from foreign to domestic agents. Overall, the evidence in this section points that the recent sovereign debt reallocation in Europe was not a special case and at least partly caused by a more general phenomenon that may have influenced various asset classes simultaneously.

[Insert Table A1 near here]

4.5. Effect of informational closeness on banks' sovereign exposures

The purpose of the discussions in the previous four sections was to illustrate the empirical patterns that do not easily match with the existing explanations in the literature and point towards the possible role of information in banks' sovereign bond holdings. However, none of them could be counted as conclusive evidence since the interaction of several theories may still explain some of these patterns. For instance, although a bit of a stretch in interpretation, the rising home bias in retail and corporate debt could still be tied to the argument of moral suasion if governments are assumed to push domestic banks to also shift their private sector exposures towards their own countries. Therefore, I need an empirical setting to be able to control/exclude, or at least minimize, the confounding effects of these alternative stories.

4.5.1. Identification strategy

My identification strategy to tease out the information channel builds on two layers. First, I argue that informational closeness matters for banks' asset holdings in general. It is already well established in the literature that the proximity to the borrower matters for the banks' lending behavior and it usually determines the amount of soft information that the

my observed proxy for credit risk ($Crisis_{c,t}$). This can cause a classical errors-in-variables problem that may underestimate the effect of credit risk on domestic retail debt (see Roberts and Whited, 2013). In simple terms, assuming that the private sector is in crisis every time sovereign is in trouble would lead us to underestimate the effect of crisis on private debt since private sector will clearly not be in trouble in some of those periods when sovereign is.

[28] In another unreported robustness check, I repeat the analysis by only including EBA disclosure dates in which both types of debt exposures were disclosed (6 dates; see Table 1) and find that results are unchanged.

bank could gather to serve its customers.[29] In the context of government debt, such soft information could be obtained via domestic banks' local/political connections or simply being more familiar with the country, its daily news and economic as well as political climate.[30] To this end, I employ 8 carefully-constructed measures of informational closeness, some of which are commonly used in cross-country studies (see Data Description). However, directly checking the effects of these proxies on government bond holdings may not be suitable as there exists the risk of picking up unobserved country/bank specific characteristics or, more importantly, bilateral cross-country linkages that may not have anything to do with information. This weakness calls for the second layer of my identification strategy where I benefit from the theoretical prediction that information channel should be stronger for riskier assets (Portes et al., 2001). Though they are usually transparent and standardized, government debt markets have an interesting aspect: while corporate bankruptcy is always about the (in)ability of a company to repay, a sovereign default is -in most cases- a political decision and directly related to the degree of governing party's willingness to cut back government spending or increase tax rates. This crucial difference between corporate and sovereign debt arises due to the lack of a legal mechanism to enforce repayment on sovereigns (Panizza et al., 2009) and makes it especially important in times of stress to have insider information on government's willingness to honor its promises or country's political capacity to endure further budget cuts. For example, Butler (2008) illustrates a case in which local investment banks underwriting municipal bonds have comparative advantage in accessing and assessing soft information, especially when the bond is risky. Hence, I expect the effect of information channel to intensify at higher levels of default risk for the government.

Thanks to these two layers, I come up with a difference-in-differences model in which I estimate the interaction of information proxies with a measure of sovereign risk as in the following:

$$SovereignPortion_{l,b,c,t} = \beta_1(SovereignRisk_{c,t} \times Information_{l,c}) + \theta_{b,t} + \gamma_{c,t} + \mu_{l,c} + \varepsilon_{l,b,c,t} \quad (5)$$

where $Information_{l,c}$ stands for one of the 8 proxies of informational closeness of the banks towards other countries as well as towards their own and $SovereignRisk_{c,t}$ is the average of the past 3 months' daily bond spreads with respect to Germany. Equation 5 has the spirit of the gravity regressions in the trade literature (e.g., Anderson and Van Wincoop, 2003) and I

[29] See, among many others, Mian (2006), Alessandrini, Presbitero, and Zazzaro (2009) and Agarwal and Hauswald (2010).

[30] Here, I interpret familiarity as an accumulated informational advantage rather than a behavioral bias although the previous literature is somewhat ambiguous on this (see Huberman, 2001).

am able to saturate the model with a full set of fixed-effects, especially include dummies at the level of interaction between home country and exposure country ($\mu_{l,c}$) so that all time-invariant bilateral cross-country linkages could be directly controlled. This aspect is very crucial for my identification strategy and restricts the model to only use the time variation available in sovereign risk to be able to identify the information channel. That is, the interaction of cross-sectional variation in sovereign risk and informational proxies is automatically captured by $\mu_{l,c}$ and if there is not enough time variation in bond spreads, inclusion of these dummies would bias my β_1 estimates downwards. For example, if British banks typically hold high levels of Cypriot government debt due to their informational advantage in Cyprus, I can capture this only if there is enough variation over time in the Cypriot government bond spreads; otherwise such pair-specific relationships will all be subsumed in $\mu_{l,c}$.

Specifications and alternative theories in the previous 4 sections concentrated on the rising home bias phenomenon that was related specifically to the domestic observations in my sample, such as Greek banks' exposures to Greek government debt. In order to be able to avoid the complications raised by the home bias phenomenon and its accompanying channels, I take a rather extreme approach and drop all the domestic observations from the full sample and report a second set of results only with the banks' remaining exposures to foreign countries. Notice that this is a conservative way of identifying the information channel since such links, if they exist, would probably be strongest between governments and domestic banks. By dropping these domestic observations, I would be resorting to a possibly weaker secondary information channel in which I compare the informational closeness only across foreign banks. Hence, for the sake of providing a cleaner identification, this approach risks underestimating the true magnitude of the information channel.

Before moving on to the results, it might be insightful to have a preliminary look at the banking linkages across the countries in my sample. Figure 4 pictures the bank branch network in these 30 EEA countries and it seems that Eurozone crisis struck the ones located in the outer sphere of this network. These troubled periphery countries seem to be both less connected to the others in the network and more likely to be clustered together. One could argue that this is because branch data gives out the post-crisis relationships and thus may have been affected by the crisis itself. However, a pre-crisis network constructed by historical bank mergers (illustrated in Figure 5) shows a very similar pattern. These figures imply that countries experiencing a crisis could have been particularly vulnerable to informational frictions, even before they were struck. Additionally, larger nodes in crisis countries imply that their banking sectors were dominated by domestic banks. This might be the reason why debt flew back to these countries in large quantities as they had relatively less foreign bank presence to begin with.

[Insert Figure 4 and Figure 5 near here]

4.5.2. Results

Table 7 presents the effects of informational distance on banks' government bond exposures conditional on the level of sovereign spreads. For easy comparison, estimations with two different samples (full and foreign) are reported side by side. A point worth mentioning initially is that, compared to the previous estimations, the explanatory power (adjusted-r-square) of the model with full sample massively increases due to the fixed effects at Home-Country x ExposureCountry level, implying that cross-country linkages matter substantially for the European banks' sovereign portfolios. In the full sample, interaction coefficients for all proxies are statistically significant at 1% level in the expected directions, being negative for geographical distance and positive for the rest. In the sample of foreign exposures (after domestic ones are dropped), almost all proxies retain a high level of significance except the legal origins proxy (Column VIIIB), which is not surprising given the noisy nature of that variable as it is likely to be confounded by other cultural and historical trends than pure informational distance (Guiso et al., 2009, p. 1106).

[Insert Table 7 near here]

Most relevant proxies in this context are the ones measuring financial information transmission via current bank branches and historical bank mergers. Column IA implies that, for the country with median sovereign bond spreads in my sample (144bps), a change in branches from 0 to 220 (mean level) corresponds to an additional sovereign bond holdings of around 5% (508bps) at the individual bank level. This effect is economically meaningful and more than four times larger than the average sovereign portion holding in my sample (120bps, see Table 2). In comparison, size of that effect is close to 50% of the additional contribution of crisis to average home bias that was found previously (˜1100bps, see Columns III/IV in Table 3). A similar back-of-the-envelope calculation with the estimated coefficient of the mergers proxy (Column IIA) generates an additional impact of 488bps for the median country and is comparable to the previous calculation with the coefficient for bank branches. The resulting implication is that financial information transmission matters and has sizeable effects both on banks' domestic and foreign government exposures.

One could argue that branches or mergers may also pick up the effect of governments' moral suasion on banks in general since more branches/mergers may mean more space for governments in corresponding countries to intervene and hence more regulatory leverage to use against banks. Even though such possibility cannot be excluded in theoretical terms,

one should expect that such pressures would naturally be stronger on domestic banks as the vast literature on moral suasion suggests (Altavilla et al., 2017; Becker and Ivashina, 2018). If so, one should observe a higher coefficient on the full sample estimations (vis-a-vis foreign sample) for these two variables, which does not seem to be the case. In fact, contrary to this prediction, coefficients found in the foreign sample (Columns IB/IIB) are 2-4 times larger than their full-sample counterparts which negates the possibility that these coefficients are influenced by moral suasion.

A more general information proxy is the press variable, which essentially captures the newspaper coverage between banks' home and exposure countries prior to the Eurozone crisis. Estimated coefficients of the interactions for this proxy are significant in both samples, despite its size being smaller in the foreign one. Hence, one could think of them as representing the lower and upper bounds of the true effect of general information on sovereign exposures. Additionally, other more structural variables such as common language and geographical distance also turn out to be highly significant in expected directions. To the extent that one could think of these proxies as historically determined and thus exogenous, the evidence here also points to the existence of a causal impact of information on sovereign bond exposures.

To make sure that estimations are not picking up some mechanical change due to the composition of the banks in my sample from one EBA announcement to another, I repeat the same analysis with several alternative dependent variables that try to adjust for such potential bias. Firstly, Table A2 contains the results with the CAPM-adjusted *SovereignPortionBias* variable which corrects the previous dependent variable by taking into account the size of each bank's relative government bond portfolio. Economic size and significance of these estimates are almost identical to the previous ones in Table 7. Secondly, instead of normalizing the dependent variable, I directly use the banks' nominal exposures in logarithmic form, à la Brutti and Sauré (2016). Results are available in Table A3 and show that, if anything, statistical significance rises for most coefficient estimates.[31] Finally, instead of dividing the banks' nominal bond exposures with the total bank-held debt of each country internally calculated within my sample at each point in time, I create a new dependent variable (*SovereignPortionECB*) by dividing the same nominal exposures by the total debt stock of each country as measured by the ECB at the corresponding time points. This expectedly constitutes a noisier measure as it is more difficult to pin down the correct value of the country's aggregate debt stock especially if some of it is issued in the form that cannot be traded in secondary markets. Such a scale would be especially insensitive, and thus problem-

[31] Since the log scale is different and represents a relative change, I refrain from interpreting and comparing the size of the coefficient estimates this time.

atic, in periods when the value of government debt fluctuates intensely, which is obviously the case during my sample period. Nevertheless, despite its potential shortcomings, results in Table A4 with this new dependent variable do not seem to deviate too much from the previous ones. Standard errors are expectedly higher and the point estimates seem to be smaller possibly due to the fact that nominal exposures are now scaled by total debt stock rather than only by bank-held debt. What is more interesting is the fact that the estimated coefficients for financial information (in foreign bank samples, Columns IB and IIB) are very similar to the ones reported in Table 7. Overall, findings in this subsection confirm the main prediction of the paper: government debt is reallocated to the informationally closer banks as the default risk of the underlying debt goes up.

4.5.3. Robustness checks

In this section, I will be using an incremental strategy where I incorporate the previous robustness checks as I move to the next one, reassuring the reader on the strength of my findings even when various restrictions are imposed simultaneously rather than one at a time.

One potentially confounding factor might be the possibility that countries struck by crises may also be better connected to each other. In such a case, information variables may capture the effect of risk-shifting which was documented in Table 4. To control for this possibility, I include *StressedBank x Crisis* interaction[32] as an additional control in Equation 5. A further criticism might be due to Brutti and Sauré (2016) who argue that political strength of the bank's home country might be important for sovereign debt reallocation. Since banks from politically influential countries may feel more confident about enforcing repayments, they may tend to buy foreign government bonds while others are selling. If large and politically strong Eurozone countries have also banking systems closely-connected to the troubled countries, then I might simply be capturing this political strength effect rather than the informational-closeness. To incorporate this into my framework, I construct two additional control variables that Brutti and Sauré (2016) propose as a measure of political strength. One is the share of total Eurozone GDP that the home country of the bank produces, namely $Euroshare_l$; and second is simply a dummy for the German banks $GermanBank_l$. Table 8 updates the results with these extra controls. In short, there is only mixed evidence that these alternative channels are economically/statistically important in determining debt reallocation and none of the previous findings regarding information effects change in any meaningful way.

[32] In unreported estimations, I experimented by directly using bond spreads (i.e., *StressedBank x SovRisk*) instead of the corresponding threshold dummies for the interaction terms; but did not come across any meaningful change in any of my results.

[Insert Table 8 near here]

One further extension of empirical strategy could be to check whether previous results might be driven by real exchange rate risk. Since my sample includes banks located in non-Eurozone countries such as HSBC in United Kingdom or Danske Bank in Denmark, differences in banks' currency exposures may affect their hedging strategies via government bonds. To account for this scenario, I construct a subsample composed of only banks headquartered in Eurozone countries. Hence, all banks in this subsample use Euro as the main currency. Given that inflation differences were minimal across European economies during my sample period and full currency compositions of banks' balance-sheets are unknown, I assume that these banks should on average face similar real exchange rate risks towards other countries. Table 9 updates all of the main results with this subsample. As can be clearly seen, there is no material change in any of my previous findings. If anything, most coefficient estimates seem to be larger in this subsample.

[Insert Table 9 near here]

Despite accounting for differences in real exchange rates, one can still argue that there was substantial redenomination (break-up) risk within the Eurozone. As some countries may have started planning to get out of the monetary union, banks may have optimally started selling government bonds to hedge against such countries in order to avoid potential currency mismatches after a Eurozone break-up. However, it is not straightforward to list which countries actually planned to exit or which countries were perceived by the market as potentially preparing to exit. Thus, to test whether such motives are important in explaining my results, I follow a strategy similar to Brutti and Sauré (2016) and drop from my sample all the bank exposures towards Greece. It can be easily argued that, if any break-up expectations were evident during the sample period, this would be especially valid for Greece as it has been the country that suffered the most from Eurozone crises both economically and politically (Lane, 2012). Therefore, Table 10 presents the results with Eurozone banks, but this time without any Greek exposures. Again, there does not seem to be any significant change in my main findings, supporting the notion that they are not driven substantially by the redenomination risk.

[Insert Table 10 near here]

On top of the previous setting with Eurozone banks and the exclusion of all exposures to Greece, one can also think that possible moral suasion applied to the Greek banks may have distorted their exposures not only to Greece but to other countries as well. One possible

way to check if this may have an impact on my results could be to drop all the Greek banks in my sample with all of their exposures. Table 11 illustrates the results with such further restriction on my sample. Coefficients on some of the structural proxies such as language and colonial links are now less precisely estimated (probably due to the loss of such relationships between Greek banks and Cyprus in the new subsample) although their economic magnitudes are still similar to the previous table. Most importantly, no significant change can be observed for financial and aggregate information proxies, which remain highly significant.

[Insert Table 11 near here]

Despite the overwhelming evidence in all of the previous subsample checks, one could still suspect that moral suasion or any other debt reallocation channel specifically applicable to the Eurozone crisis may be driving my results. To minimize such concerns and show that information channel is more generalizable than being specific to a crisis episode, I focus only on the observations from the post-crisis period. As clear from the literature on Eurozone crisis, Mario Draghi's "whatever it takes" speech in July, 2012, and the ECB's subsequent OMT programme have pulled the government debt markets from the brink of a collapse and marked the end of the intense phase of the Eurozone crisis (Saka et al., 2015; Delatte, Fouquau, and Portes, 2017). Therefore, in a new subsample test, I focus only on the observations after July, 2012. This gives me 5 data time points starting from the last quarter of 2012 (see Table 1), meaning that my sample size is automatically reduced by almost half. Even with such a small subsample, Table 12 shows that most proxies are still significant at conventional levels and, compared to Table 7, almost all of them are larger except the proxy for legal origins that turns out negative in the foreign sample but not significant. The fact that my estimates are larger in the second half of the sample period provides further reassurance that they are not driven substantially by other crisis-specific channels, such as moral suasion, whose intensity would expectedly be lower during the post-crisis period.

[Insert Table 12 near here]

As a final robustness check, I merge the conditions that led to Table 11 and Table 12; that is, I focus on the Eurozone banks in the post-crisis period by also dropping any exposure to Greece or any exposure by a Greek bank while still controlling for alternative channels of sovereign debt reallocation. Results with this smallest and most restrictive subsample are provided in Table 13. Vis-a-vis Table 11, coefficients are much less precisely estimated, which is not surprising given that the sample size shrinks considerably in Table 13. On the other hand, point estimates in general are not vastly different in terms of size. More importantly,

there is still some statistical evidence that financial information proxies or structural factors such as geographical distance or common borders have an impact on banks' government bond exposures.

[Insert Table 13 near here]

4.6. Discussion and policy implications

These findings clearly challenge the recent literature of Eurozone studies focusing on the rising home bias in sovereign debt and provide evidence for a unique channel that has not been studied in this context before. One might argue that, in the age of technology and well-integrated markets such as in Europe, information must be cheap to attain; so huge asymmetries in the markets should not arise. However, theoretical literature illustrates that even initially-small differences in informational standings of domestic and foreign agents may lead them to focus on these differences rather than spending effort to get the information related to foreign assets (Van Nieuwerburgh and Veldkamp, 2009). Furthermore, recent studies on the sovereign credit risk prices in the Eurozone provide evidence that, at the peak of the crisis, there were great discrepancies between bond yields (or CDS spreads) and macro fundamentals of the countries in the Euro periphery, which is interpreted as a sign of market panic (De Grauwe and Ji, 2013; Saka et al., 2015). In such circumstances, it is not unreasonable to expect domestic or government-related banks to benefit from their superior informational position and collect sovereign bonds while foreign banks were leaving the debt markets in a rush. In fact, recent research shows that banks that had loaded up periphery country bonds during crisis period benefited from this strategy by making huge profits as the debt market pressures eased later on (Acharya, Eisert, Eufinger, and Hirsch, 2016b).

What is then so special about domestic banks over other types of domestic agents? First of all, domestic banks are the main players in the government debt markets. Figure 3 clearly illustrates that even before the crisis in Euro periphery, domestic banks held almost as much sovereign debt as that of all other domestic agents combined. This could give the banks a comparative edge in pricing of government securities. Secondly, banks are natural information-gatherers for their economies. They transact with almost every sector of the domestic businesses and gain in-advance information on how well the overall economy may perform over the coming months/quarters, which would have a tremendous effect over government's ability to raise tax revenues and pay back its debt. Thirdly, banks are the agents with the greatest access to liquidity (via central banks) in times of financial crises. Hence, in a liquidity crunch, governments may find it easier to signal their intentions/plans

to local banks than any other local agent. Last but not least, public ownership in the banking sector is still more common relative to other sectors, which does not only give the government a tool to pressure banks, but also opens the possible communication channels that can transmit crucial soft information during times of sovereign stress (Ilzetzki, 2014).

Eurozone crisis has been characterized by sudden changes in periphery countries' bond prices and various policy responses in the face of rising market speculation. Especially the actions taken by European Central Bank (ECB) seem to have been instrumental in preventing the self-fulfilling market sentiments (Saka et al., 2015). It is also possible to argue that cheap financing provided by the ECB to commercial banks in the form of long term refinancing operations (LTROs) may have led some of these banks to increase their exposures to risky government bonds. Given that periphery country banks were more likely to be undercapitalized, this might be the reason behind the rising domestic exposures of those banks to their own governments. However, this logic skips the fact that there were various countries in crisis at the same period and cheap financing together with risk-shifting tendency would lead these banks to also increase their exposures to other crisis-countries, for which I find only weak evidence in my data and show that information channel is independent of such motives.

Another counter-argument might be that part of the literature shows how increasing sovereign exposures had negative spillovers on European banks' private lending, which may signal that sovereign exposure behavior was partly involuntary for these banks (Acharya, Eisert, Eufinger, and Hirsch, 2016a; Altavilla et al., 2017; Popov and Van Horen, 2015). Still, Broner, Erce, Martin, and Ventura (2014) clearly illustrate that, in the existence of frictions in financial markets, sovereign exposures may crowd out private lending without necessarily implying an involuntary or forced behavior on the part of banks. Additionally, some recent studies that argue in favor of moral suasion do not find any negative effect of sovereign exposures on private lending (Ongena et al., 2016).

As a key policy conclusion: if information channel gets activated between governments and domestic banks in the midst of a crisis, this may be considered as a stabilizing force compared to a situation where even domestic banks would rush out of the market and governments would find it impossible to rollover their debt. Therefore, the close link between governments and their domestic banks may create positive externalities in terms of mitigating the effects of sudden stops and preventing possibly inefficient sovereign defaults. Nevertheless, policy discussions have so far emphasized shifting the regulatory power from national to supranational institutions to avoid moral suasion or coming up with various innovations of debt issuance in order to cut off the diabolic loop between sovereigns and their banks (see Brunnermeier, Garicano, Lane, Pagano, Reis, Santos, Thesmar, Van Nieuwerburgh,

and Vayanos, 2016). Taken at face value, my results imply that these precautions would not be sufficient to prevent the rising home bias problem (to the extent that it constitutes a problem) during crises. Instead further policy discussions may also focus on increasing transparency in the sovereign debt markets especially in times of crisis or encouraging more cross-border banking activities to improve informational ties across countries.

5. Conclusion

This paper proposes a new channel of sovereign debt reallocation across banks based on informational frictions and provides evidence for it in the context of recent Eurozone debt crises. Using a novel bank-level dataset compiled from various stress-tests, transparency and capital exercises of the European Banking Authority (EBA), the paper first documents several empirical patterns on sovereign home bias that are not fully compatible with the existing explanations. It starts by confirming that European banks' home bias increased and sovereign debt was indeed reallocated from foreign to domestic banks at the peak of the crisis. It also presents findings consistent with risk-shifting behavior for the banks located in crisis countries; however banks' domestic sovereign bond preference is shown to have gone much beyond their risk-shifting motives. Interestingly, rising home bias phenomenon does not seem to be visible for the domestic agents other than banks. In addition, the paper illustrates that, in response to crisis, private forms of debt (retail and corporate) in bank balance sheets have experienced an equally large (if not larger) jump in home bias, tilting towards a more general explanation of the home bias rather than the specific ones applied to sovereign debt in the recent literature.

Finally and most importantly, to identify the information channel in this paper, I focus on the banks' foreign country exposures, which helps me minimize the potentially confounding effects of alternative stories that are specific to home country exposures, such as moral suasion or secondary market channels. Then, I take a difference-in-differences approach by comparing the sovereign exposures of foreign banks at different levels of informational closeness with varying levels of sovereign risk for the exposure country. In other words, I estimate the interaction between various information proxies (both current and structural) and sovereign bond spreads, by saturating the panel model with a rich set of fixed effects that take into account time-varying unobserved factors at bank and exposure country levels as well as constant bilateral linkages between home and exposure countries. This two-layered identification strategy (informational distance and sovereign risk) ensures that I capture the effect of information rather than some unobserved variable as it could be the case in a direct estimation. As a result, I find strong evidence for the argument that foreign banks

headquartered in informationally closer territories increase their relative exposures as the sovereign risk rises in a country. This effect is robust to controlling for various alternative channels and changing sample compositions. Interestingly, information seems to matter both in the forms of financial (i.e, bank branch linkages) and general (i.e., newspaper coverage) knowledge regarding the country of exposure. What is even more interesting is that the effects are statistically and economically meaningful even after the end of the Eurozone crisis (mid-2012) and even when very small subsets of the observations are taken into account to avoid the possible interference of other channels. Hence, this paper contributes to the extant empirical literature on the role informational asymmetries play in asset markets and extends it to the context of government bond exposures of commercial banks.

Taken at face value, my results have direct implications for policymakers. To the extent that information was at play during recent crises, increasing home bias in bank portfolios may have been a stabilizing force rather than a destabilizing one. Despite the well-illustrated adverse mechanism between governments and banks, the possibility that domestic banks act as a buyer of last resort may have helped many of the crisis-stricken governments to continue borrowing from the market and service their maturing debt payments. In the absence of a national central bank acting as a lender of last resort, this may have mitigated the disrupting effects of a sudden stop triggered by foreign banks who potentially had very little soft information about the default probability of the governments and thus ample reason to leave the sovereign debt markets in panic. In that case, future policy discussions may benefit from focusing on increasing transparency in the sovereign debt market and encouraging cross-border banking activities to mitigate the rising home bias in advance of the next Eurozone crisis.

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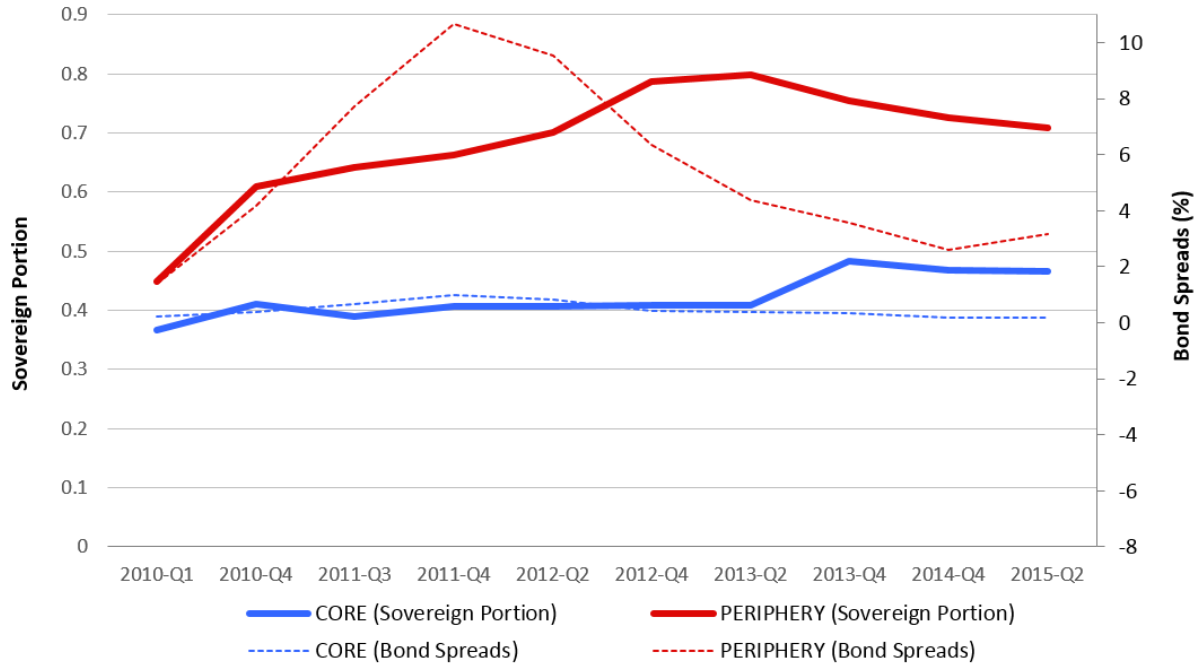


Fig. 1. **Sovereign portion of domestic banks in core and periphery Euro countries during crisis.** The graph shows simple country averages of sovereign portion and bond spreads for each country group (core vs. periphery). Sovereign Portion is defined as the portion of the total sovereign debt of a country held by its domestic banks. Bond Spreads are computed as the average daily bond spreads for a country (with respect to Germany) over the 3-month period before each observation date. Sovereign bond exposure data come from various stress-tests, transparency and recapitalization exercises undertaken by the European Banking Authority (EBA) and include 10 observation dates from 2010-Quarter1 to 2015-Quarter2 (see Table 1). Bond yields are obtained from Datastream. Core (non-crisis) countries: Austria, Belgium, Finland, France, Germany and Netherlands. Periphery (crisis) countries: Greece, Ireland, Italy, Portugal, Spain.

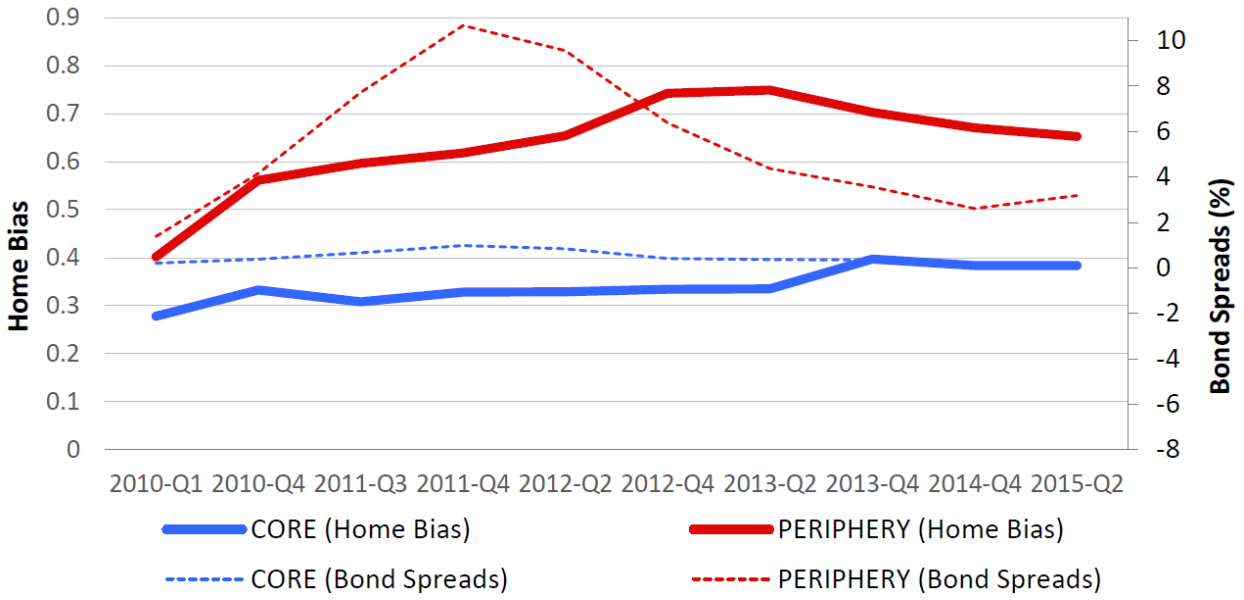
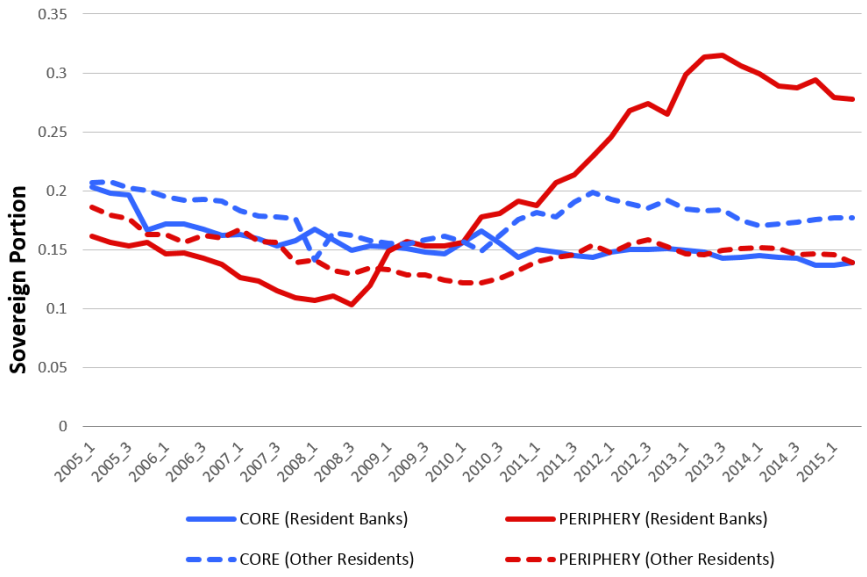
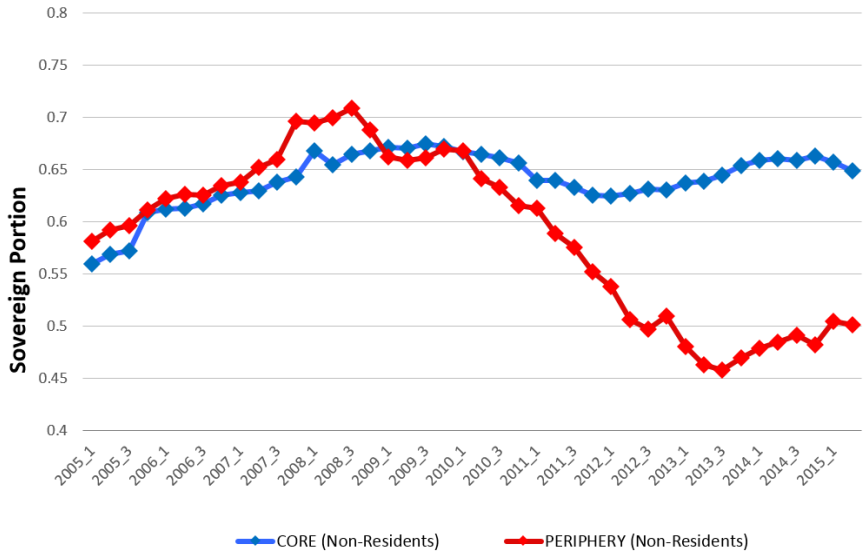


Fig. 2. **Home bias of domestic banks in core and periphery Euro countries during crisis.** The graph shows simple country averages of home bias and bond spreads for each country group (core vs. periphery). Home Bias is defined as the portion of the total sovereign debt of a country held by its domestic banks, after taking into account the portfolio size of these domestic banks according to a standard portfolio (CAPM) model (see the Data Description). Bond Spreads are computed as the average daily bond spreads for a country (with respect to Germany) over the 3-month period before each observation date. Sovereign bond exposure data come from various stress-tests, transparency and recapitalization exercises undertaken by the European Banking Authority (EBA) and include 10 observation dates from 2010-Quarter1 to 2015-Quarter2 (see Table 1). Bond yields are obtained from Datastream. Core (non-crisis) countries: Austria, Belgium, Finland, France, Germany and Netherlands. Periphery (crisis) countries: Greece, Ireland, Italy, Portugal, Spain.



(a) Bank residents and Non-bank residents



(b) Non-residents

Fig. 3. **Sovereign portion for bank residents, non-bank residents and non-residents during crisis.** The graph shows simple country averages of sovereign portion separately for bank residents, non-bank residents and non-residents. Sovereign Portion is defined as the portion of the total sovereign debt of a country held by a particular creditor group. Sovereign debt exposures come from the dataset compiled from various national sources by Merler and Pisani-Ferry (2012) and include quarterly observations from 2005-Quarter1 to 2015-Quarter2. Core (non-crisis) countries: Belgium, Finland, France, Germany and Netherlands. Periphery (crisis) countries: Greece, Ireland, Italy, Portugal, Spain. Data for Belgium and Finland can only be found annually; so these data are linearly interpolated in order to obtain quarterly values.

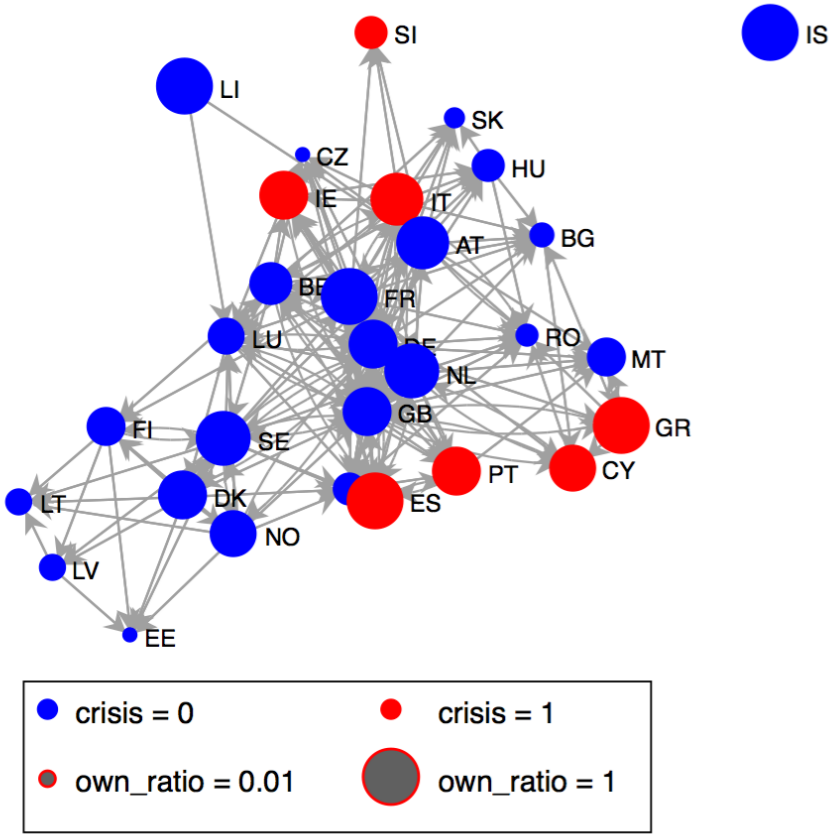


Fig. 4. **Bank branch network across European countries.** The graph shows a simple network map for all the bank branch connections across 30 EEA countries. *Crisis* countries (Greece, Cyprus, Ireland, Portugal, Italy, Slovenia and Spain) are in red and others are in blue. Each arrow represents a connection between two countries with the direction of the arrow pointing from home country towards the host. Nodes are placed via multidimensional scaling procedure with a random component and the size of the nodes (*own_ratio*) represents the percentage of the total branches in a country that belongs to domestic banks. Bank branch data come from SNL Financial as of February, 2016.

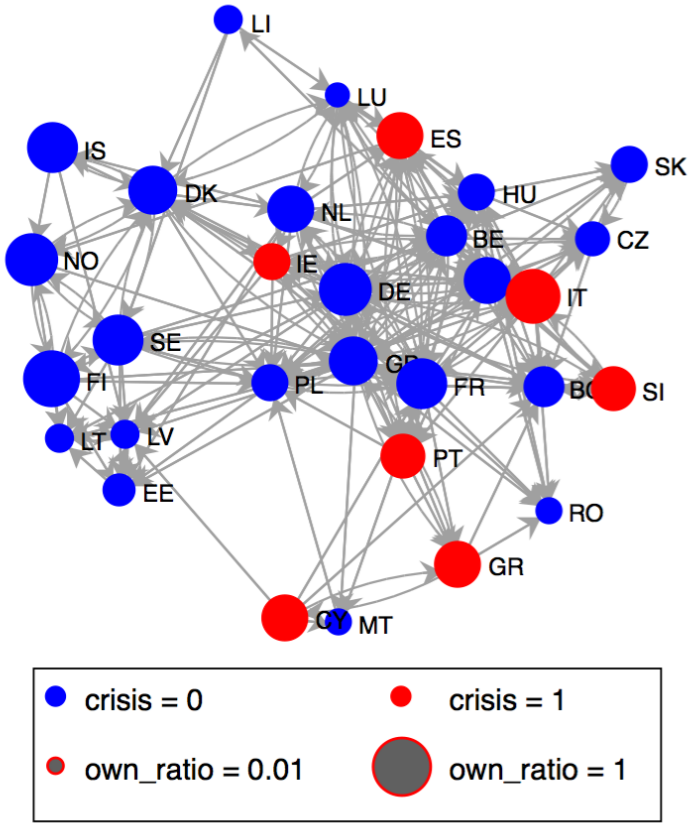


Fig. 5. **Bank merger network across European countries.** The graph shows a simple network map for all the bank merger connections across 30 EEA countries. *Crisis* countries (Greece, Cyprus, Ireland, Portugal, Italy, Slovenia and Spain) are in red and others are in blue. Each arrow represents a connection between two countries with the direction of the arrow pointing from home country towards the host. Nodes are placed via multidimensional scaling procedure with a random component and the size of the nodes (*own_ratio*) represents the percentage of the total mergers in a country that belongs to domestic banks. Bank merger data come from SDC Platinum and cover the years between 1985 and 2008.

Disclosure date	*Disclosure name*	*Information date*	*Number of banks covered*	*Type of credit disclosure*
23/07/2010	2010 EU-wide stress testing exercise (CEBS)	2010-Q1	91	Sovereign
15/07/2011	2011 EU-wide stress testing exercise (EBA)	2010-Q4	90	Sovereign & Private
08/12/2011	EU Capital exercise 2011 (EBA)	2011-Q3	65	Sovereign
03/10/2012	EU Capital exercise 2012 (EBA)	2011-Q4 & 2012-Q2	62	Sovereign
16/12/2013	2013 EU-wide transparency exercise (EBA)	2012-Q4 & 2013-Q2	64	Sovereign & Private
26/10/2014	2014 EU-wide stress testing exercise (EBA)	2013-Q4	123	Sovereign & Private
24/11/2015	2015 EU-wide transparency exercise (EBA)	2014-Q4 & 2015-Q2	105	Sovereign & Private

Table 1: **Data disclosure details from European Banking Authority (EBA).** The table lists the disclosures of various exercise results as announced by the European Banking Authority (EBA). CEBS refers to the Committee of European Banking Supervisors, which was comprised of senior representatives of bank supervisory authorities and central banks of the European Union and later succeeded by the EBA. 2010 EU-wide stress testing exercise was conducted by the CEBS and made public by national regulators; however EBA does not provide the related data. Hence, this dataset was obtained from the Peterson Institute for International Economics while all other datasets were acquired from EBA. Private credit refers to the corporate and retail credit exposure of the banks covered in the respective datasets. Information date refers to the data time-points in each disclosure for which the values of bank credit positions can be found.

Variables	*Mean*	*Median*	*Std. Deviation*	*Min*	*Max*	*Observations*	*Source*
SovereignPortion (in bps)	120	0	466	0	9725	23,268	EBA
SovereignPortionBias (in bps)	-1	-37	468	-755	9720	23,268	EBA
RetailPortion (in bps)	121	0	688	0	10000	13,509	EBA
SovereignPortion (Domestic - in bps)	1256	919	1281	0	8407	831	EBA
SovereignPortionBias (Domestic - in bps)	1150	720	1279	-137	8405	831	EBA
RetailPortion (Domestic - in bps)	1644	753	2078	0	10000	497	EBA
DomesticPortion (ResidentBanks - in bps)	1891	1974	1047	84	4509	242	Bruegel
DomesticPortion (OtherResidents - in bps)	1864	1983	1309	17	5834	242	Bruegel
Bond Spreads (in bps)	254	144	335	-96	2883	280	Datastream
Crisis dummy (Spread > 400bps)	0.12	0	0.33	0	1	280	Datastream
Branches	220	0	1864	0	28718	616	SNL Financial
Mergers	5	0	34	0	610	616	SDC Platinum
Press	0.07	0.03	0.12	0.00	0.95	616	Factiva
Language	0.07	0.00	0.26	0.00	1.00	616	Mayer & Zignago (2011)
Colony	0.07	0.00	0.25	0.00	1.00	616	Mayer & Zignago (2011)
Distance	6.90	7.22	1.47	0.00	8.49	616	MapQuest
Border	0.13	0.00	0.33	0.00	1.00	616	Mayer & Zignago (2011)
Legal	0.30	0.00	0.46	0.00	1.00	616	La Porta et al. (2008)

Table 2: **Summary statistics for main variables.** The table lists the variables used in the main regressions. "Bps" denotes basis points. *SovereignPortion* is the portion of the total sovereign debt of a country held by a specific bank. *SovereignPortionBias* is the portion of total sovereign debt of a country held by a specific bank, after adjusting for a standard CAPM model (see the Data Description section). *RetailPortion* is the portion of the total retail debt in a country held by a specific bank. Domestic in parentheses denotes the observations where the country of exposure is the same as the home country of the bank. *DomesticPortion* is the portion of the overall sovereign debt of a country held by domestic agents, separately for *ResidentBanks* and *OtherResidents*. *Bond Spreads* are the spreads (in basis points) on 10-year maturity bond for each country in the sample (with respect to 10-year German bond) averaged over three-months daily values before each observation date. *Crisis* is a dummy variable which is equal to 1 if a Euro country's bond spread (with respect to Germany) is above 400 basis points at an observation date. For the specific definitions of information proxies (*Branches-Legal*), see the Data Description section. The last column shows the data sources.

Dependent Variable:	*SovereignPortion*				*SovereignPortionBias*			
	I	*II*	*III*	*IV*	*V*	*VI*	*VII*	*VIII*
Domestic	1,257***	1,257***	1,127***	1,126***	1,273***	1,273***	1,143***	1,143***
	[10.430]	[10.276]	[9.363]	[9.210]	[10.511]	[10.356]	[9.437]	[9.284]
Domestic x Crisis			1,093***	1,102***			1,095***	1,101***
			[3.755]	[3.680]			[3.753]	[3.670]
Fixed Effects								
Bank	*Yes*		*Yes*		*Yes*		*Yes*	
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Bank x Time		*Yes*		*Yes*		*Yes*		*Yes*
Clustering	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj-R-sq	0.244	0.236	0.264	0.256	0.243	0.229	0.262	0.249
N	23268	23268	23268	23268	23268	23268	23268	23268

Table 3: **Sovereign debt reallocation across European banks during crisis.** The table summarizes the results of the equation (1) with dependent variables *SovereignPortion* (I-IV) and *SovereignPortionBias* (V-VIII) estimated over a time period fully spanning the Eurozone crisis on a biannual basis from early 2010 to mid-2015. *SovereignPortion* is the portion of total sovereign debt of a country held by a specific bank. *SovereignPortionBias* is the portion of total sovereign debt of a country held by a specific bank, after adjusting for a standard CAPM model (see the Data Description section). *Domestic* is a dummy variable equal to 1 only if the country of exposure is the same as the home country of the bank. *Crisis* is a dummy variable which is equal to 1 only if a Euro country's bond spread (with respect to Germany) is above 400 basis points calculated as the average of daily bond spreads over the 3-month period preceding the observation date. Sovereign bond holding data come from various exercises of the European Banking Authority (EBA) and country exposures are included for 30 members of the European Economic Area (EEA). Bond yields for *Crisis* dummy are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	*SovereignPortion*		*SovereignPortion*	
	I	*II*	*III*	*IV*
Domestic	1,227***	1,125***	1,244***	1,141***
	[10.186]	[9.204]	[10.263]	[9.278]
StressedBank x Crisis	291***	85***	291***	85***
	[4.089]	[3.162]	[4.073]	[3.089]
StressedBank x Crisis x Domestic		1,041***		1,040***
		[3.543]		[3.532]
Fixed Effects				
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*
Bank x Time	*Yes*	*Yes*	*Yes*	*Yes*
Clustering	Bank	Bank	Bank	Bank
Adj-R-sq	0.241	0.256	0.234	0.249
N	23268	23268	23268	23268

Table 4: **Sovereign debt reallocation across European banks during crisis: Stressed Banks.** The table summarizes the results of the equation (2) estimated over a time period fully spanning the Eurozone crisis on a biannual basis from early 2010 to mid-2015. Dependent variables are *SovereignPortion* (I-II), which is the portion of total sovereign debt of a country held by a specific bank, and *SovereignPortionBias* (III-IV), which is the portion of total sovereign debt of a country held by a specific bank after adjusting for a standard CAPM model (see the Data Description section). *Domestic* is a dummy variable equal to 1 only if the country of exposure is the same as the home country of the bank. *Crisis* is a dummy variable which is equal to 1 only if a Euro country's bond spread (with respect to Germany) is above 400 basis points calculated as the average of daily bond spreads over the 3-month period preceding the observation date. *StressedBank* is a dummy variable indicating those observations in which the home country of the bank is considered to be "in crisis" ($400bps \leq spread$). Sovereign bond holding data come from various exercises of the European Banking Authority (EBA) and country exposures are included for 30 members of the European Economic Area (EEA). Bond yields for *Crisis* dummy are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	*DomesticPortion*			
	I	*II*	*III*	*IV*
Crisis	-89	-922***	-1,009***	
	[-0.333]	[-3.609]	[-3.623]	
Crisis x ResidentBanks		1,667**	1,842***	1,842**
		[3.000]	[3.375]	[2.440]
Fixed Effects				
Country	*Yes*	*Yes*	*Yes*	
Time	*Yes*	*Yes*		
Creditor	*Yes*	*Yes*		
Creditor x Time			*Yes*	*Yes*
Country x Time				*Yes*
Clustering	Country	Country	Country	Country
R-sq	0.024	0.146	0.167	0.248
N	484	484	484	484

Table 5: **Sovereign debt reallocation during crisis: Resident banks vs non-bank residents.** The table summarizes the results of the equation (3) with dependent variable *DomesticPortion* (I-IV), which is the portion of the overall sovereign debt of a country held by a particular domestic agent (either by resident banks or other private residents), estimated over a time period fully spanning the Eurozone crisis on a quarterly basis from early 2010 to the mid-2015. *ResidentBanks* is a dummy variable equal to one only if the creditor is the resident banks of the country. *Crisis* is a dummy variable which is equal to 1 only if a Euro country's bond spread (with respect to Germany) is above 400 basis points calculated as the average of daily bond spreads over the 3-month period preceding the observation date. Domestic sovereign holding data come from the dataset compiled from various national sources by Merler and Pisani-Ferry (2012). Countries include Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain and United Kingdom. Bond yields for *Crisis* dummy are obtained from Datastream. Robust standard errors are clustered at the country-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	*DebtPortion*				*DebtPortionBias*			
	I	*II*	*III*	*IV*	*V*	*VI*	*VII*	*VIII*
Domestic	1,414***				1,436***			
	[10.053]				[10.141]			
Domestic x Retail		1,667***	1,539***	1,522***		1,696***	1,568***	1,553***
		[8.313]	[7.747]	[7.578]		[8.373]	[7.816]	[7.664]
Domestic x Sovereign		1,263***	1,123***	1,134***		1,279***	1,139***	1,148***
		[10.348]	[9.068]	[9.288]		[10.427]	[9.133]	[9.344]
Domestic x Crisis			1,180***	1,348***			1,185***	1,328**
			[3.645]	[2.641]			[3.636]	[2.590]
Domestic x Crisis x Sovereign				-260				-222
				[-0.588]				[-0.503]
Fixed Effects								
Bank x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Sector	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Clustering	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj-R-sq	0.209	0.213	0.228	0.229	0.206	0.210	0.225	0.225
N	36777	36777	36777	36777	36777	36777	36777	36777

Table 6: **Debt reallocation across European banks during crisis: Sovereign vs retail debt.** The table summarizes the results of the equation (4) estimated over a time period fully spanning the Eurozone crisis on a biannual basis from early 2010 to mid-2015. Dependent variables are *DebtPortion* (I-IV), which measures the portion of a specific type of total debt (sovereign or retail) of a country held by a specific bank and *DebtPortionBias* (V-VIII), which is the portion of total debt of a country held by a specific bank after adjusting for a standard CAPM model (see the Data Description section). *Sovereign* and *Retail* are dummy variables indicating the respective debt types held by the banks. *Domestic* is a dummy variable equal to 1 only if the country of exposure is the same as the home country of the bank. *Crisis* is a dummy variable which is equal to 1 only if a Euro country's bond spread (with respect to Germany) is above 400 basis points calculated as the average of daily bond spreads over the 3-month period preceding the observation date. Sovereign and retail debt data come from various exercises of the European Banking Authority (EBA) and country exposures are included for 30 members of the European Economic Area (EEA). Bond yields for *Crisis* dummy are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	SovereignPortion															
	IA	*IB*	*IIA*	*IIB*	*IIIA*	*IIIB*	*IVA*	*IVB*	*VA*	*VB*	*VIA*	*VIB*	*VIIA*	*VIIB*	*VIIIA*	*VIIIB*
Sample:	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*
SovRisk x Branches	0.016***	0.067***														
	[5.302]	[2.957]														
SovRisk x Mergers			0.677***	1.649***												
			[3.786]	[2.716]												
SovRisk x Press					146.980***	45.248**										
					[4.176]	[2.240]										
SovRisk x Language							77.261***	34.284***								
							[6.340]	[3.519]								
SovRisk x Colony									68.186***	28.298***						
									[5.471]	[2.877]						
SovRisk x Distance											-18.206***	-11.388**				
											[-4.756]	[-2.566]				
SovRisk x Border													71.815***	17.012*		
													[4.553]	[1.876]		
SovRisk x Legal															10.629***	4.065
															[3.398]	[1.423]
Fixed Effects																
Bank x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
HomeCountry x ExpCountry	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Clustering	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj-R-sq	0.517	0.225	0.513	0.224	0.513	0.223	0.514	0.224	0.513	0.224	0.516	0.224	0.513	0.223	0.510	0.223
N	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437

Table 7: **Effect of informational distance on sovereign debt reallocation.** The table summarizes the results of the equation (5) in full sample (Columns A) and in foreign sample (Columns B) estimated over a time period fully spanning the Eurozone crisis on a biannual basis from early 2010 to mid-2015. Dependent variable is *SovereignPortion*, which measures the portion of total sovereign debt of a country held by a specific bank. *SovRisk* is a measure of sovereign risk and calculated as the average of daily bond spreads over the 3-month period preceding the observation date. For the specific definitions and sources of information proxies (*Branches-Legal*), see the Data Description section. Sovereign bond holding data come from various exercises of the European Banking Authority (EBA) and country exposures are included for 30 members of the European Economic Area (EEA). Bond yields are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	SovereignPortion															
	IA	*IB*	*IIA*	*IIB*	*IIIA*	*IIIB*	*IVA*	*IVB*	*VA*	*VB*	*VIA*	*VIB*	*VIIA*	*VIIB*	*VIIIA*	*VIIIB*
Sample:	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*
SovRisk x Branches	0.016***	0.067***														
	[5.201]	[2.937]														
SovRisk x Mergers			0.657***	1.666***												
			[3.756]	[2.651]												
SovRisk x Press					142.615***	45.078**										
					[4.039]	[2.242]										
SovRisk x Language							75.809***	34.693***								
							[6.250]	[3.555]								
SovRisk x Colony									66.923***	28.831***						
									[5.451]	[2.945]						
SovRisk x Distance											-17.961***	-11.392**				
											[-4.671]	[-2.552]				
SovRisk x Border													69.718***	17.432*		
													[4.424]	[1.861]		
SovRisk x Legal															9.206***	4.030
															[2.965]	[1.393]
StressedBank x Crisis	47.266*	10.039	67.837***	12.954	45.031*	4.522	51.603**	3.285	65.236***	7.614	29.569	11.006	73.188***	11.633	104.650***	8.948
	[1.826]	[0.636]	[2.809]	[0.814]	[1.954]	[0.279]	[2.362]	[0.202]	[2.782]	[0.466]	[1.428]	[0.655]	[3.271]	[0.723]	[4.057]	[0.548]
EuroShare x Crisis	-73.667	-40.004	-79.751	-31.931	151.350	44.723	270.578**	106.651	301.372**	120.215	136.550	2.944	46.172	24.008	79.252	35.741
	[-0.570]	[-0.366]	[-0.636]	[-0.284]	[1.247]	[0.428]	[2.195]	[1.047]	[2.342]	[1.147]	[1.137]	[0.028]	[0.372]	[0.223]	[0.641]	[0.344]
GermanBank x Crisis	25.291	17.908	26.320	16.493	-24.597	-0.073	-47.230	-11.724	-50.998	-13.512	-18.858	10.322	26.249	11.146	-8.165	3.502
	[0.726]	[0.550]	[0.779]	[0.510]	[-0.761]	[-0.002]	[-1.425]	[-0.384]	[-1.510]	[-0.440]	[-0.577]	[0.330]	[0.724]	[0.334]	[-0.242]	[0.112]
Fixed Effects																
Bank x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
HomeCountry x ExpCountry	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Clustering	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj-R-sq	0.517	0.224	0.513	0.223	0.513	0.223	0.514	0.224	0.513	0.224	0.516	0.224	0.513	0.223	0.510	0.223
N	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437

Table 8: **Effect of informational distance on sovereign debt reallocation: Controls for alternative channels** The table summarizes the results of the equation (5) in full sample (Columns A) and in foreign sample (Columns B) estimated over a time period fully spanning the Eurozone crisis on a biannual basis from early 2010 to mid-2015. Dependent variable is *SovereignPortion*, which measures the portion of total sovereign debt of a country held by a specific bank. *SovRisk* is a measure of sovereign risk and calculated as the average of daily bond spreads over the 3-month period preceding the observation date. *Crisis* is a dummy variable which is equal to 1 only if a Euro country's bond spread (with respect to Germany) is above 400 basis points. *StressedBank* is a dummy variable indicating those observations in which the home country of the bank is considered to be "in crisis" ($400bps \leq spread$). *Euroshare* is the share of total Eurozone GDP that the home country of the bank produces (0 for Non-Eurozone). *GermanBank* is a dummy variable which is equal to one for banks located in Germany. For the specific definitions and sources of information proxies (*Branches-Legal*), see the Data Description section. Sovereign bond holding data come from various exercises of the European Banking Authority (EBA) and country exposures are included for 30 members of the European Economic Area (EEA). Bond yields are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	SovereignPortion															
	IA	*IB*	*IIA*	*IIB*	*IIIA*	*IIIB*	*IVA*	*IVB*	*VA*	*VB*	*VIA*	*VIB*	*VIIA*	*VIIB*	*VIIIA*	*VIIIB*
Sample:	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*
SovRisk x Branches	0.016***	0.070***														
	[5.274]	[3.017]														
SovRisk x Mergers			0.677***	1.925***												
			[3.873]	[3.269]												
SovRisk x Press					189.506***	77.723***										
					[4.824]	[3.165]										
SovRisk x Language							85.711***	40.648***								
							[6.641]	[4.129]								
SovRisk x Colony									85.943***	40.166***						
									[6.560]	[3.915]						
SovRisk x Distance											-19.356***	-13.552***				
											[-4.929]	[-3.142]				
SovRisk x Border													83.280***	24.405**		
													[4.991]	[2.322]		
SovRisk x Legal															9.992***	3.135
															[2.942]	[0.927]
Extra Controls	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Fixed Effects																
Bank x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
HomeCountry x ExpCountry	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Clustering	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj-R-sq	0.531	0.219	0.526	0.217	0.528	0.217	0.528	0.218	0.528	0.218	0.53	0.217	0.526	0.216	0.521	0.216
N	18,872	18,198	18,872	18,198	18,872	18,198	18,872	18,198	18,872	18,198	18,872	18,198	18,872	18,198	18,872	18,198

Table 9: **Effect of informational distance on sovereign debt reallocation: Extra controls + Only Eurozone banks.** The table summarizes the results of the equation (5) in full sample (Columns A) and in foreign sample (Columns B) estimated over a time period fully spanning the Eurozone crisis on a biannual basis from early 2010 to mid-2015. Observations only for the banks headquartered in Eurozone are included. Dependent variable is *SovereignPortion*, which measures the portion of total sovereign debt of a country held by a specific bank. *SovRisk* is a measure of sovereign risk and calculated as the average of daily bond spreads over the 3-month period preceding the observation date. Extra controls refer to the ones explicitly controlling for risk-shifting and political strength channels as in Table 8. For the specific definitions and sources of information proxies (*Branches-Legal*), see the Data Description section. Sovereign bond holding data come from various exercises of the European Banking Authority (EBA) and country exposures are included for 30 members of the European Economic Area (EEA). Bond yields are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	SovereignPortion															
	IA	*IB*	*IIA*	*IIB*	*IIIA*	*IIIB*	*IVA*	*IVB*	*VA*	*VB*	*VIA*	*VIB*	*VIIA*	*VIIB*	*VIIIA*	*VIIIB*
Sample:	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*
SovRisk x Branches	0.015***	0.071***														
	[5.008]	[3.016]														
SovRisk x Mergers			0.635***	2.070***												
			[3.744]	[3.317]												
SovRisk x Press					199.731***	70.634***										
					[4.317]	[3.133]										
SovRisk x Language							107.891***	31.790**								
							[4.167]	[2.603]								
SovRisk x Colony									108.556***	29.401**						
									[4.092]	[2.218]						
SovRisk x Distance											-20.716***	-18.600***				
											[-4.321]	[-3.233]				
SovRisk x Border													74.998***	23.115**		
													[4.181]	[2.200]		
SovRisk x Legal															22.463***	5.429
															[2.807]	[1.395]
Extra Controls	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Fixed Effects																
Bank x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
HomeCountry x ExpCountry	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Clustering	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj-R-sq	0.538	0.224	0.533	0.222	0.534	0.222	0.534	0.221	0.534	0.221	0.537	0.223	0.532	0.221	0.529	0.221
N	18,198	17,548	18,198	17,548	18,198	17,548	18,198	17,548	18,198	17,548	18,198	17,548	18,198	17,548	18,198	17,548

Table 10: **Effect of informational distance on sovereign debt reallocation: Extra controls + Only Eurozone banks + No exposures to Greece.** The table summarizes the results of the equation (5) in full sample (Columns A) and in foreign sample (Columns B) estimated over a time period fully spanning the Eurozone crisis on a biannual basis from early 2010 to mid-2015. Observations only for the banks headquartered in Eurozone are included and all exposures to Greece are dropped. Dependent variable is *SovereignPortion*, which measures the portion of total sovereign debt of a country held by a specific bank. *SovRisk* is a measure of sovereign risk and calculated as the average of daily bond spreads over the 3-month period preceding the observation date. Extra controls refer to the ones explicitly controlling for risk-shifting and political strength channels as in Table 8. For the specific definitions and sources of information proxies (*Branches-Legal*), see the Data Description section. Sovereign bond holding data come from various exercises of the European Banking Authority (EBA) and country exposures are initially included for 30 members of the European Economic Area (EEA). Bond yields are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	SovereignPortion															
	IA	*IB*	*IIA*	*IIB*	*IIIA*	*IIIB*	*IVA*	*IVB*	*VA*	*VB*	*VIA*	*VIB*	*VIIA*	*VIIB*	*VIIIA*	*VIIIB*
Sample:	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*
SovRisk x Branches	0.015***	0.071***														
	[4.986]	[2.975]														
SovRisk x Mergers			0.630***	1.979***												
			[3.746]	[3.117]												
SovRisk x Press					260.589***	110.946**										
					[4.567]	[2.446]										
SovRisk x Language							141.064***	36.085								
							[4.136]	[1.415]								
SovRisk x Colony									142.862***	26.843						
									[4.095]	[0.758]						
SovRisk x Distance											-20.666***	-18.269***				
											[-4.269]	[-2.858]				
SovRisk x Border													75.299***	24.014**		
													[4.167]	[2.271]		
SovRisk x Legal															22.795***	5.641
															[2.847]	[1.433]
Extra Controls	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Fixed Effects																
Bank x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
HomeCountry x ExpCountry	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Clustering	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj-R-sq	0.540	0.222	0.534	0.220	0.537	0.219	0.537	0.219	0.537	0.219	0.538	0.220	0.533	0.219	0.530	0.219
N	17,550	16,900	17,550	16,900	17,550	16,900	17,550	16,900	17,550	16,900	17,550	16,900	17,550	16,900	17,550	16,900

Table 11: **Effect of informational distance on sovereign debt reallocation: Extra controls + Only Eurozone banks + No exposures to Greece + No Greek banks.** The table summarizes the results of the equation (5) in full sample (Columns A) and in foreign sample (Columns B) estimated over a time period fully spanning the Eurozone crisis on a biannual basis from early 2010 to mid-2015. Observations only for the banks headquartered in Eurozone (except the ones in Greece) are included and all exposures to Greece are dropped. Dependent variable is *SovereignPortion*, which measures the portion of total sovereign debt of a country held by a specific bank. *SovRisk* is a measure of sovereign risk and calculated as the average of daily bond spreads over the 3-month period preceding the observation date. Extra controls refer to the ones explicitly controlling for risk-shifting and political strength channels as in Table 8. For the specific definitions and sources of information proxies (*Branches-Legal*), see the Data Description section. Sovereign bond holding data come from various exercises of the European Banking Authority (EBA) and country exposures are initially included for 30 members of the European Economic Area (EEA). Bond yields are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	SovereignPortion															
	IA	*IB*	*IIA*	*IIB*	*IIIA*	*IIIB*	*IVA*	*IVB*	*VA*	*VB*	*VIA*	*VIB*	*VIIA*	*VIIB*	*VIIIA*	*VIIIB*
Sample:	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*
SovRisk x Branches	0.018***	0.109**														
	[5.071]	[2.416]														
SovRisk x Mergers			0.915***	3.231**												
			[3.873]	[2.584]												
SovRisk x Press					207.196**	120.195**										
					[2.103]	[2.385]										
SovRisk x Language							134.050***	43.273*								
							[2.741]	[1.860]								
SovRisk x Colony									90.429**	16.475*						
									[2.372]	[1.786]						
SovRisk x Distance											-23.497**	-27.269**				
											[-2.530]	[-2.400]				
SovRisk x Border													96.130**	28.814**		
													[2.305]	[2.182]		
SovRisk x Legal															19.013	-0.986
															[1.341]	[-0.250]
Fixed Effects																
Bank x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
HomeCountry x ExpCountry	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Clustering	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj-R-sq	0.492	0.182	0.490	0.181	0.489	0.181	0.490	0.181	0.489	0.181	0.491	0.182	0.489	0.181	0.486	0.181
N	12,908	12,447	12,908	12,447	12,908	12,447	12,908	12,447	12,908	12,447	12,908	12,447	12,908	12,447	12,908	12,447

Table 12: **Effect of informational distance on sovereign debt reallocation: Post-crisis period.** The table summarizes the results of the equation (5) in full sample (Columns A) and in foreign sample (Columns B) estimated on a biannual basis over the post-Eurozone-crisis period from late 2012 to mid-2015. Dependent variable is *SovereignPortion*, which measures the portion of total sovereign debt of a country held by a specific bank. *SovRisk* is a measure of sovereign risk and calculated as the average of daily bond spreads over the 3-month period preceding the observation date. For the specific definitions and sources of information proxies (*Branches-Legal*), see the Data Description section. Sovereign bond holding data come from various exercises of the European Banking Authority (EBA) and country exposures are included for 30 members of the European Economic Area (EEA). Bond yields are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	SovereignPortion															
	IA	*IB*	*IIA*	*IIB*	*IIIA*	*IIIB*	*IVA*	*IVB*	*VA*	*VB*	*VIA*	*VIB*	*VIIA*	*VIIB*	*VIIIA*	*VIIIB*
Sample:	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*
SovRisk x Branches	0.018***	0.099**														
	[5.087]	[2.215]														
SovRisk x Mergers			0.921***	2.311**												
			[3.916]	[2.144]												
SovRisk x Press					421.311***	92.407										
					[2.951]	[0.957]										
SovRisk x Language							272.131***	48.522								
							[3.371]	[1.436]								
SovRisk x Colony									240.933***	2.481						
									[3.162]	[0.143]						
SovRisk x Distance											-37.852***	-25.527*				
											[-3.682]	[-1.880]				
SovRisk x Border													130.155**	26.385*		
													[2.514]	[1.831]		
SovRisk x Legal															40.296	-4.823
															[1.394]	[-0.814]
Extra Controls	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Fixed Effects																
Bank x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
HomeCountry x ExpCountry	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Clustering	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj-R-sq	0.509	0.156	0.506	0.154	0.511	0.153	0.513	0.153	0.511	0.153	0.514	0.154	0.506	0.154	0.502	0.153
N	9,882	9,516	9,882	9,516	9,882	9,516	9,882	9,516	9,882	9,516	9,882	9,516	9,882	9,516	9,882	9,516

Table 13: **Effect of informational distance on sovereign debt reallocation: Post-crisis period + Extra controls + Only Eurozone banks + No exposures to Greece + No Greek banks.** The table summarizes the results of the equation (5) in full sample (Columns A) and in foreign sample (Columns B) estimated on a biannual basis over the post-Eurozone-crisis period from late 2012 to mid-2015. Observations only for the banks headquartered in Eurozone (except the ones in Greece) are included and all exposures to Greece are dropped. Dependent variable is *SovereignPortion*, which measures the portion of total sovereign debt of a country held by a specific bank. *SovRisk* is a measure of sovereign risk and calculated as the average of daily bond spreads over the 3-month period preceding the observation date. Extra controls refer to the ones explicitly controlling for risk-shifting and political strength channels as in Table 8. For the specific definitions and sources of information proxies (*Branches-Legal*), see the Data Description section. Sovereign bond holding data come from various exercises of the European Banking Authority (EBA) and country exposures are initially included for 30 members of the European Economic Area (EEA). Bond yields are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	*DebtPortion*				*DebtPortionBias*			
	I	*II*	*III*	*IV*	*V*	*VI*	*VII*	*VIII*
Domestic	1,404***				1,425***			
	[10.016]				[10.080]			
*Domestic*Corporate*		1,640***	1,521***	1,517***		1,669***	1,550***	1,548***
		[8.444]	[7.940]	[7.881]		[8.475]	[7.970]	[7.924]
*Domestic*Sovereign*		1,262***	1,132***	1,134***		1,279***	1,148***	1,149***
		[10.326]	[9.088]	[9.292]		[10.406]	[9.153]	[9.347]
*Domestic*Crisis*			1,103***	1,139**			1,104***	1,119**
			[3.319]	[2.102]			[3.302]	[2.059]
*Domestic*Crisis*Sovereign*				-56				-22
				[-0.119]				[-0.047]
Fixed Effects								
Bank x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Sector	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Clustering	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj-R-sq	0.217	0.221	0.235	0.235	0.213	0.217	0.230	0.230
N	36777	36777	36777	36777	36777	36777	36777	36777

Table A1: **Debt reallocation across European banks during crisis: Sovereign vs corporate debt.** The table summarizes the results of the equation (4) estimated over a time period fully spanning the Eurozone crisis on a biannual basis from early 2010 to mid-2015. Dependent variables are *DebtPortion* (I-IV), which measures the portion of a specific type of total debt (sovereign or corporate) of a country held by a specific bank and *DebtPortionBias* (V-VIII), which is the portion of total debt of a country held by a specific bank after adjusting for a standard CAPM model (see the Data Description section). *Sovereign* and *Corporate* are dummy variables indicating the respective debt types held by the banks. *Domestic* is a dummy variable equal to 1 only if the country of exposure is the same as the home country of the bank. *Crisis* is a dummy variable which is equal to 1 only if a Euro country's bond spread (with respect to Germany) is above 400 basis points calculated as the average of daily bond spreads over the 3-month period preceding the observation date. Sovereign and corporate debt data come from various exercises of the European Banking Authority (EBA) and country exposures are included for 30 members of the European Economic Area (EEA). Bond yields for *Crisis* dummy are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	SovereignPortionBias															
	IA	*IB*	*IIA*	*IIB*	*IIIA*	*IIIB*	*IVA*	*IVB*	*VA*	*VB*	*VIA*	*VIB*	*VIIA*	*VIIB*	*VIIIA*	*VIIIB*
Sample:	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*
SovRisk x Branches	0.016***	0.069***														
	[5.220]	[2.978]														
SovRisk x Mergers			0.701***	1.713***												
			[3.768]	[2.727]												
SovRisk x Press					148.924***	45.377**										
					[4.187]	[2.208]										
SovRisk x Language							78.334***	34.454***								
							[6.296]	[3.521]								
SovRisk x Colony									69.073***	28.310***						
									[5.453]	[2.866]						
SovRisk x Distance											-18.509***	-11.617**				
											[-4.767]	[-2.578]				
SovRisk x Border													73.086***	17.601*		
													[4.577]	[1.880]		
SovRisk x Legal															10.888***	4.247
															[3.382]	[1.432]
Fixed Effects																
Bank x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
HomeCountry x ExpCountry	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Clustering	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj-R-sq	0.507	0.216	0.503	0.215	0.503	0.215	0.503	0.216	0.503	0.215	0.505	0.215	0.502	0.215	0.499	0.215
N	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437

Table A2: **Effect of informational distance on sovereign debt reallocation: Dependent variable with CAPM-adjustment.** The table summarizes the results of the equation (5) in full sample (Columns A) and in foreign sample (Columns B) estimated over a time period fully spanning the Eurozone crisis on a biannual basis from early 2010 to mid-2015. Dependent variable is *SovereignPortionBias*, which measures the portion of total sovereign debt of a country held by a specific bank, after adjusting for a standard CAPM model (see the Data Description section). *SovRisk* is a measure of sovereign risk and calculated as the average of daily bond spreads over the 3-month period preceding the observation date. For the specific definitions and sources of information proxies (*Branches-Legal*), see the Data Description section. Sovereign bond holding data come from various exercises of the European Banking Authority (EBA) and country exposures are included for 30 members of the European Economic Area (EEA). Bond yields are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	Log (1 + Nominal Exposure)															
	IA	*IB*	*IIA*	*IIB*	*IIIA*	*IIIB*	*IVA*	*IVB*	*VA*	*VB*	*VIA*	*VIB*	*VIIA*	*VIIB*	*VIIIA*	*VIIIB*
Sample:	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*
SovRisk x Branches	0.000***	0.000***														
	[3.121]	[3.149]														
SovRisk x Mergers			0.000*	0.012***												
			[1.809]	[3.367]												
SovRisk x Press					0.191***	0.235**										
					[3.249]	[2.004]										
SovRisk x Language							0.082***	0.075**								
							[3.407]	[2.219]								
SovRisk x Colony									0.084***	0.084***						
									[3.493]	[2.651]						
SovRisk x Distance											-0.016***	-0.042**				
											[-3.480]	[-2.120]				
SovRisk x Border													0.108***	0.117*		
													[2.769]	[1.821]		
SovRisk x Legal															0.042***	0.039***
															[3.063]	[2.800]
Fixed Effects																
Bank x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
HomeCountry x ExpCountry	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Clustering	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj-R-sq	0.656	0.545	0.656	0.545	0.656	0.545	0.656	0.544	0.656	0.545	0.656	0.545	0.656	0.545	0.656	0.545
N	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437	23,268	22,437

Table A3: **Effect of informational distance on sovereign debt reallocation: Dependent variable in log form.** The table summarizes the results of the equation (5) in full sample (Columns A) and in foreign sample (Columns B) estimated over a time period fully spanning the Eurozone crisis on a biannual basis from early 2010 to mid-2015. Dependent variable is $Log(1 + NominalExposure)$, which measures the natural logarithm of nominal sovereign debt exposures (in millions Euro) held by a specific bank. *SovRisk* is a measure of sovereign risk and calculated as the average of daily bond spreads over the 3-month period preceding the observation date. For the specific definitions and sources of information proxies (*Branches-Legal*), see the Data Description section. Sovereign bond holding data come from various exercises of the European Banking Authority (EBA) and country exposures are included for 30 members of the European Economic Area (EEA). Bond yields are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

Dependent Variable:	SovereignPortionECB															
	IA	*IB*	*IIA*	*IIB*	*IIIA*	*IIIB*	*IVA*	*IVB*	*VA*	*VB*	*VIA*	*VIB*	*VIIA*	*VIIB*	*VIIIA*	*VIIIB*
Sample:	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*	*Full*	*Foreign*
SovRisk x Branches	0.010***	0.070**														
	[3.875]	[2.556]														
SovRisk x Mergers			0.322***	1.305**												
			[2.891]	[2.597]												
SovRisk x Press					48.397**	17.964										
					[2.179]	[1.405]										
SovRisk x Language							22.658***	4.177								
							[2.660]	[1.247]								
SovRisk x Colony									21.712***	6.006						
									[2.672]	[1.471]						
SovRisk x Distance											-6.616**	-9.050**				
											[-2.410]	[-2.116]				
SovRisk x Border													25.468**	10.701		
													[2.088]	[0.830]		
SovRisk x Legal															2.484	1.104
															[1.227]	[0.676]
Fixed Effects																
Bank x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
ExpCountry x Time	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
HomeCountry x ExpCountry	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Clustering	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj-R-sq	0.485	0.233	0.483	0.232	0.483	0.231	0.483	0.231	0.483	0.231	0.484	0.232	0.483	0.231	0.483	0.231
N	21,606	20,784	21,606	20,784	21,606	20,784	21,606	20,784	21,606	20,784	21,606	20,784	21,606	20,784	21,606	20,784

Table A4: **Effect of informational distance on sovereign debt reallocation: Dependent variable with ECB measure.** The table summarizes the results of the equation (5) in full sample (Columns A) and in foreign sample (Columns B) estimated over a time period fully spanning the Eurozone crisis on a biannual basis from early 2010 to mid-2015. Dependent variable is *SovereignPortionECB*, which measures banks' nominal sovereign debt exposures divided by the size of total debt stock of the country as measured by the ECB. *SovRisk* is a measure of sovereign risk and calculated as the average of daily bond spreads over the 3-month period preceding the observation date. For the specific definitions and sources of information proxies (*Branches-Legal*), see the Data Description section. Sovereign bond holding data come from various exercises of the European Banking Authority (EBA) and country exposures are included for 30 members of the European Economic Area (EEA). Bond yields are obtained from Datastream. Robust standard errors are clustered at the bank-level and t-statistics are reported in brackets. $*p \leq 0.1, **p \leq 0.05, ***p \leq 0.01$.

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