The Real Effects of Financial Protectionism*

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February 14, 2019

Abstract

This paper analyzes the effect of government support for banks, such as recapitalizations on financial integration and firm outcomes. Using data on European syndicated lending, results show that bailout banks increase their home bias in lending by 24.6 % more than non-bailout banks. In turn, discriminated foreign firms can only imperfectly substitute this fall in lending by switching banks or issuing corporate bonds. Thus, the negative loan supply effect translates into lower sales and employment growth for foreign firms. In addition, government support distorts credit allocation in the home market by shifting lending to larger, safer and less innovative firms. Moreover, I document that politicians gain influence over banks by transferring control rights to the government as part of the support scheme. These results suggest that locating bank resolution within the European Banking Union at the national level discourages international economic activity, distorts credit towards less productive firms and harms growth.

JEL classification: F21, F36, G21, G30, O16

Keywords: Bank Bailouts, Financial Protectionism, Cross-border Bank Flows, Syndicated Loan Market, Real Effects, European Banking Union.

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*I would like to thank Tim Adam, Kerstin Bernoth, Franziska Bremus, Ralf Elsas, Marcel Fratzscher, Thomas Gehrig, Simon Gervais, Denis Gromb, Rainer Haselmann, David Heller, Pia Hüttl, Christian Jauregui, Martin Kanz, Lukas Menkhoff, Daniel Metzger, Thomas Mosk, Terrance Odean, Raghavendra Rau, Jörg Rocholl, Andrew K. Rose, Farzad Saidi, Sascha Steffen, Alex Stomper, Daniel Streitz, Sergio Vicente, Ganesh Viswanath, as well as participants at the 8th IWH/INFER Workshop on International Capital Flows and Macroprudential Stability, 25th Annual Meeting of the German Finance Society's (DGF) Doctoral Seminar, 6th International PhD Meeting in Economics 2018, 1st Financial Stability Conference Research Workshop 2018, seminars at the German Institute for Economic Research (DIW), Humboldt University of Berlin and at the University of California at Berkeley for helpful discussions and comments. Contact: Mohrenstrasse 58, Room 4.3.016, DE−10117 Berlin, +49 30 89 78 94 78.

1 Introduction

The collapse of Lehman Brothers in 2008 and the subsequent euro area crisis were followed by a sharp decline in banking integration. Throughout Europe, national policy makers stepped up to help their ailing banks with unprecedented government support. In spite of these attempts to stabilize the banking sector in order to prop up the economy, Europe is looking back on a decade of low growth, low investment, a slow recovery to jobs and cross-border bank flows on the decline.[1]

In this paper, I provide novel evidence on financial protectionism and its real effects on firms using data on almost the entire European banking sector. I define financial protectionism as a change in the preferences of domestic banks, induced by government support that leads them to discriminate against foreign firms.[2] According to anecdotal evidence on financial protectionism, the six French bailout banks committed to maintain domestic lending at a growth rate of $3-4$ %, in return for receiving government support (Woll, 2014, p. 117). To examine financial protectionism empirically, I extend the UK setting in Rose and Wieladek (2014) to all 28 EU countries capturing more than 500 banks. Additionally, I observe changes in political connections, such as a transfer of control rights to uncover the mechanism of financial protectionism. Moreover, I use bank-firm relationships to identify loan supply and test for real effects at the firm level working through a distortion of credit allocation.

I find that bailout banks increase home bias in lending more than non-bailout banks. Moreover, this increase in home bias is primarily driven by a reduction in foreign lending. In particular, banks increase their home bias by 24.6 % following a bailout from their home government. On the intensive margin, bailout banks increase lending volume to home relative to foreign borrowers by 30.4 % more than non-bailout banks. This lower cross-border loan supply has significant real effects on the performance of foreign firms. Firms at the 90^{th} percentile in terms of dependence on foreign banks affected by a bailout have 6.5 % lower loan growth, relative to firms at the 10^{th} percentile. I find that firms are not able to substitute this reduced access to cross-border lending by other forms of funding, such as non-syndicated loans or corporate bonds. Hence, reduced access to cross-border loans paired with imperfect credit substitution translates into weaker sales

[1] For evidence on the decline of cross-border bank flows see Cerutti and Claessens (2016); Bremus and Fratzscher (2015); Bussière, Schmidt and Valla (2016); Emter, Schmitz and Tirpák (2016); European Central Bank (2017)

[2] This definition was proposed by Rose and Wieladek (2014).

(−3.5 %) and employment (−3 %) growth of firms with stronger dependence on foreign bailout banks. In contrast, having a stronger relationship with home banks affected by a bailout has no significant effect on average loan growth or firm performance. Moreover, I document that government support for banks distorts credit allocation by providing more lending to larger, safer and less innovative firms in the protected home market. These findings suggest that government support for banks has discouraged international economic activity, distorted credit towards less productive firms and was harmful to both economic growth and employment.

I provide evidence that governments engage in financial protectionism and that the mechanism operates through a transfer of control rights from bank to government. Results show that preferential lending for home borrowers is strongest when the recapitalization funds of the bailout come in conjunction with a shift of control rights from bank to government. In contrast, bailout banks that receive a recapitalization without a change in control rights do not significantly change their loan mix. This suggests that politicians gain novel influence over bank lending through a transfer of control rights from the bank to the government as part of the bailout.[3] Thus, these findings suggest that governments persuade banks to redirect loan supply towards the home market in return for the bailout, in line with the financial protectionism hypothesis (Rose and Wieladek, 2014).

The data spans the period from 2000 through 2015, capturing 66 banks that received government support during the Great Financial Crisis. I consider three types of government support for banks: nationalizations, recapitalizations and other (that is, unusual access to liquidity) using data from the European Commission State aid Cases. Moreover, I apply a time-varying ownership correction of more than 2,100 bank subsidiaries to aggregate lending at the bank holding level.[4] This data captures reallocation of credit across countries through subsidiaries using the internal capital market of the bank holding entity. Moreover, I add balance sheet data for both firms and banks, by merging the firm-bank relationship data in Dealscan with Compustat and Bankscope. This information in combination with the granular loan level data allows overcoming challenges to identification common in the literature.[5]

[3]The importance of political connections for bank bailouts has been shown in Duchin and Sosyura (2012); Chavaz and Rose (2018), while Bertrand, Kramarz, Schoar and Thesmar (2018); Goldman, Rocholl and So (2013, 2009); Cheung, Jing, Rau and Stouraitis (2005) highlight importance of political connections more generally. For evidence on home bias and moral suasion in a different market, that is, the market for government bonds see Acharya and Steffen (2015).

[4]I hand-construct the time-varying ownership aggregation as in Schwert (2018).

[5]For a discussion on the common identification challenges on identifying loan supply see Khwaja and

The first identification challenge to establishing loan supply effects is to address firm heterogeneity. The concern is that changes in firm's demand for loans over time may bias the results on bank lending. While this issue cannot be addressed with aggregated data, disaggregated data allows to overcome this. To address the trade-off between identification and external validity, I absorb loan demand at three distinct levels of aggregation. First, I construct a bank-borrower country panel that allows for inclusion of borrower-country-time fixed effects to absorb time-varying changes in loan demand in each borrower country.[6] Second, I move to the firm level where I include firm country-industry-time fixed effects. I use firm fixed effects to base inference on the within firm variation and additionally control for size, performance, leverage and liquidity to capture time-varying firm heterogeneity. Third, I move to the granular bank-firm level to employ firm-time fixed effects. By comparing the lending behavior of bailout and non-bailout banks to the same borrower, I address the concern that differences in loan demand biases the results on bank lending. The negative effect on foreign lending by bailout banks hence reflects loan supply.

The second identification challenge is a likely selection bias into bailout and non-bailout banks. Indeed, bailout and non-bailout banks differ ex-ante in terms of size, global footprint and capitalization. Hence, I address selection bias into bailout and non-bailout banks by implementing propensity score matching on bank observables. After matching bailout and non-bailout banks along their home country, year, total assets, leverage, tier 1 capital ratio, liquidity risk, non-performing loans, return on assets, globalness and political connections – bailouts continue to be associated with a sizable increase in the home bias of lending.

An alternative explanation is that the reduction in foreign lending following a bailout merely reflects a flight home effect common to all foreign banks (De Haas and Van Horen, 2013). Indeed, I find evidence on a flight home effect across all foreign banks. However, the cross-border loan retrenchment by foreign bailout banks is twice as strong as for foreign non-bailout banks. While this supports the findings in Giannetti and Laeven (2012), it also implies that the flight home effect cannot fully explain the observed contraction in cross-border lending.

This paper contributes to the discussion on the drivers of financial disintegration and

Mian (2008); Jiminez, Mian, Peydro and Saurina Salas (2010); Jiménez, Ongena, Peydró and Saurina (2014); Morais, Peydro and Ruiz Ortega (2019).

[6]This specification follows the research design in Giannetti and Laeven (2012)

the ongoing policy debate on designing the European Banking Union.[7] The results point to the importance of a consistent framework for bank resolution and bank supervision within an economic union. Bank resolution at the national level leads to pro-cyclical banking integration that harms financial stability. In this framework, national policymakers are incentivized to persuade their banks to protect the local economy causing a welfare loss through the destruction of cross-border bank-firm relationships. Importantly, the cross-border bank retrenchment associated with financial protectionism leads to a capital misallocation that harms both economic growth and employment in the European Union.

2 Data & Empirical Strategy

2.1 Data

I capture lending of almost the entire European banking sector operating on Dealscan during the period from 2000 to 2015. The sample consists of 529 bank holdings headquartered in 28 EU countries. I include all banks with a mean lending volume of larger than 22m USD focusing on lending by commercial banks. Banks are then aggregated at the parent level applying a time-varying ownership correction of each subsidiary during the sample period. I hand-correct changes in the ownership from 2,199 subsidiaries using information on ownership changes from company websites, Bankscope and newspaper articles.[8] Then, I merge the lending banks from Dealscan with Bankscope to add balance sheet information, accounting for time-varying ownership changes throughout the sample.[9]

To construct lending relationships between banks and firms, I use data on syndicated loans from Dealscan. The syndicated loan market accounts for a significant share of total lending. Around one-third of total international lending is done through the syndicated loan market (Gadanecz and von Kleist, 2002) and it is an important source of financing in both developed and emerging economies (Cerutti, Hale and Minoiu, 2015). Syndicated loans are issued jointly by a group of banks to a single borrower. The lending syndicate

[7]For a discussion on retrenchment in financial integration since the Global Financial Crisis see Claessens (2017); Bremus and Neugebauer (2018).

[8]For the time-varying ownership correction I follow Schwert (2018) who presented this correction for the US and apply it to the European banking sector.

[9]For more information on the syndicated loan market's institutional setting see Berg, Saunders and Steffen (2016).

includes at least one lead bank and usually further participant banks. Lead banks negotiate terms and conditions of deals, perform due diligence, and organize participants. Therefore, lead arrangers stand in direct contact with the borrower and retain larger loan shares for signaling purposes (Sufi, 2007). Participants are usually not in direct contact with the borrower, but merely supply credit. Compared to other types of bank loans, syndicated loans are on average larger in volume and issued to bigger borrowers. I restrict the sample to loans by banks to non-financial firms and consider lending only by commercial, savings, cooperative and investment banks.[10] I consider both lending by lead arrangers and participants to capture total loan supply on the syndicated loan market.

Bailout data is hand-collected using the State aid Cases provided by the European Commission.[11] I classify bailouts into three types: nationalization, recapitalization and other (e.g. unusual access to liquidity). Each type is constructed as time-varying dummies that take value one for periods in which the state intervention is active. Therefore, the unit of variation is the bank-bailout country-year level. Start and end dates are drawn from the State aid Cases. In case of unknown end dates, the nationalizations will take value one for the full sample period. In case of recapitalizations, I impute the end dates using the average duration of recapitalizations in the sample with known end dates. In addition, I construct the continuous variable 'recapitalization amount' where the full recapitalization amount is spread uniformly across all periods in which the bailout is active. Consecutive interventions are aggregated.

I obtain balance sheet data of banks by merging lenders active in Dealscan with Bankscope. Overall, I am able to match 466 non-bailout banks and 66 bailout banks in the sample. Summary statistics for the bank-level sample are displayed in Table 1. The average bank has an outstanding loan volume of 8.2 bn USD, a leverage of 92 % and is active in 10 borrower countries. Table 2 splits the sample into bailout and non-bailout banks and shows that these two groups are quite heterogeneous. Bailout banks are on average larger, are more leveraged, have more non-performing loans, more political connections[12] and a stronger global footprint. This highlights the importance of addressing

[10]In Dealscan, I include only the lender types Commercial Banks, Finance Companies, Investment Banks, Mortgage Banks, Thrift/S&L, and Trust Companies. Investment banks constitute 3 % of our sample and excluding them does not change results. Borrower types included are Corporations, Insurance Companies, Law Firms, Leasing Companies and Other. See Doerr and Schaz (2017) for further details on data construction using Dealscan data.

[11]The data can be downloaded here: http://ec.europa.eu/competition/elojade/isef/index.cfm?clear=1&policy_area_id=3

[12]Measured as government bank ownership compiled from Bankscope

this heterogeneity in the identification strategy in order to reduce the likelihood that results are driven by omitted factors that are specific to bailout banks vis-a-vis non-bailout banks.

Bank-borrower country level I construct the bank-borrower country level from data on syndicated lending. First, I decompose syndicated loan deals into loan portions provided by each lender to obtain granular credit level data. Whenever Dealscan provides information on lending shares of each bank, I use this information to split loan volume accordingly (available for 28 % of the deals).[13] In cases where lending shares are missing I split loan volume on a pro-rata basis among all banks in a syndicate.[14] Transactions with deal status 'canceled', 'suspended', or 'rumor' are removed and all loan nominations transformed into million U.S. Dollars (USD) using the spot exchange rate at origination, provided by Dealscan. If after this allocation procedure the loan portion is smaller than 10,000 USD, I drop the observation to remove erroneously small loans (0.6 % of observations). Next, I use the loan portions to construct each bank's outstanding loan volume as a stock variable to proxy the loan's entry on the loan book (Morais, Peydro and Ruiz Ortega, 2019). Each outstanding loan remains active until the end of its maturity. Second, I aggregate all outstanding loan portions between a bank-firm combination to obtain bank b's outstanding loan volume to firm f in year t, forming a bank-firm-year observation. Third, I aggregate all bank-firm-year observations by firm (borrower) country to obtain the bank-borrower country-year level as in Giannetti and Laeven (2012). Thus, I obtain each bank b's log outstanding lending volume to all borrowers of country j ($volume_{b,j,t}$). Table 3 shows summary statistics at the bank-borrower country-level.

I construct a bias metric to take into account that time-varying differences in the borrower countries' market sizes may drive changes in bank lending shares. This bias metric captures the lending bias of bank b to all borrowers from country j at time t. Following Bremus and Fratzscher (2015), I adopt the bilateral bias definition to the bank-borrower country level:

[13] See Giannetti and Laeven (2012); De Haas and Van Horen (2013)

[14] In the sub-case of partial information on loan shares, I first use the available information to allocate loan shares. Then, I split the remaining amount equally among banks with missing information. If the sum of the allocation rule is larger than 110 % I consider this an erroneous entry and treat it as if lending share information was not available in the first place.

$$bias_{b,j,t} = \begin{cases} \frac{s_{b,j,t} - w_{j,t}}{w_{j,t}} & \text{if } s_{b,j,t} \leq w_{j,t} \\ \frac{s_{b,j,t} - w_{j,t}}{s_{b,j,t}} & \text{if } s_{b,j,t} > w_{j,t}, \end{cases} \tag{1}$$

bounding the bias between $[-1, 1]$ as in Bremus and Fratzscher (2015) in order to avoid outliers to drive results. Where $s_{b,j,t}$ denotes bank b's lending share to all borrowers of country j, and $w_{j,t}$ is the market share of country j in the global syndicated lending market. All shares are time-varying at annual frequency denoted with t. Intuitively, a bias value of larger than zero implies that bank b's share in market j is larger than market j's share in the total syndicated loan market. Thus, positive (negative) values of $bias_{b,j,t}$ imply a positive (negative) bias to borrowers in the respective country, relative to the market size of this country.[15]

Firm level In order to analyze the effects of loan supply on firm (borrower) performance, I add firm balance sheet information to the data constructing a firm-year level. To do so, I first aggregate the firm-bank-year loan data to the firm-year level to obtain firms' lending relationships. Second, I match firms (borrowers) in Dealscan with firms in Compustat (Global and US) using the linking file used in Chava and Roberts (2008) and updated as of April 2018. Overall, I am able to match 8,205 firms (33 % of all firms) borrowing from 463 banks (161,645 firm-year observations). Summary statistics at the firm-level are shown in Table 4. This linking exercise gives rise to a selection bias into larger firms that are less financially constrained. Thus, I expect this selection bias to render the estimates of the real effects to become more conservative. The reason being that the effect of a negative loan supply shock on firm performance is found to be larger for smaller firms with less financial leeway in previous studies (Chodorow-Reich, 2014).

To measure firms' relationships with banks that differ in the two dimensions of interest – nationality and bailout treatment – I construct three variables. These variables capture the differential lending effects by the four bank types on firm outcomes. First, *foreign affected* measures a firms relationship with foreign banks that are affected by a bailout. Intuitively, a high value of *foreign affected* implies that a firm borrows a lot from foreign banks that receive a bailout. I construct this metric as the share of loans coming from banks that are affected by a bailout at t ($BO_{b,t} = 1$) and are foreign relative to the firm's nationality by headquarter ($foreign_b = 1$):

[15] Note, that due to this normalization between $[-1, 1]$, the mean bias is $\neq 0$ in Table 3.

$$foreign\ affected_{f,t} = \frac{\sum_{\forall b} loan_{f,b,t} \cdot BO_{b,t} \cdot foreign_b}{\sum_{\forall b} loan_{f,b,t}} \tag{2}$$

Intuitively, *foreign affected* $= 1$ implies that a firm borrows exclusively from foreign banks that are all affected by a bailout. While a firm with *foreign affected* $= 0$ has no relationship with a bank that is affected by a bailout at time t. Therefore, higher values of *foreign affected* imply a stronger relationship of a firm with foreign banks that are affected by a bailout. The average firm has 15.1 % of loans outstanding from foreign bailout banks, as can be seen from Table 4.

$$foreign\ unaffected_{f,t} = \frac{\sum_{\forall b} loan_{f,b,t} \cdot NOBO_{b,t} \cdot foreign_b}{\sum_{\forall b} loan_{f,b,t}} \tag{3}$$

Second, *foreign unaffected* captures firms' relationships with foreign banks that are unaffected by a bailout. Third, *home affected* measures firms' relationships with banks from its home country that receive a bailout from the home government. Respectively, I weigh a firm f's outstanding loan volume by the bank dummies foreign ($foreign_b = 1$), affected ($BO_{b,t} = 1$) and unaffected ($NOBO_{b,t} = 1$):

$$home\ affected_{f,t} = \frac{\sum_{\forall b} loan_{f,b,t} \cdot BO_{b,t} \cdot home_b}{\sum_{\forall b} loan_{f,b,t}} \tag{4}$$

The relationship between Equation (2) and (4) is that they split a firms' relationships with bailout banks into home and foreign. Table 4 shows that the average firm has 63.1 % of loans outstanding from foreign non-bailout banks and 3.7 % from home bailout banks. The remaining fourth variable capturing a firms' relationship with home non-bailout banks is omitted and will be the control group in the regression analysis.

2.2 Empirical Strategy

Bank-borrower country level According to the financial protectionism hypothesis, banks are persuaded by the national government to shift lending towards the home market in return for receiving a bailout (as in Rose and Wieladek (2014); Chavaz and Rose (2018)). To test this hypothesis, I start by exploring how bank b's propensity to lend borrowers in country j at year t varies, depending on whether country j is the bank's home country and whether bank b receives a bailout or not. Therefore, the baseline

regression specification is:

$$y_{b,j,t} = \beta_1\ home_{b,j} \times BO_{b,t} + \beta_2\ home_{b,j} + \beta_3\ BO_{b,t} + X_{b,t-1} + \mu_{b,j} + \theta_{b\times t} + \phi_{j\times t} + \varepsilon_{b,j,t}, \quad (5)$$

where the dependent variable, $y_{b,j,t}$, is either the outstanding loan volume by bank b to borrowers in country j at year t ($volume_{b,j,t}$), or the bias of bank b's loan portfolio to borrowers from country j at year t ($bias_{b,j,t}$). The dependent variable $volume_{b,j,t}$ thus captures effects on the intensive lending margin; while $bias_{b,j,t}$ captures effects on a banks' lending bias by taking time-varying changes of borrower country market j's size into account. On the right hand side of the equation, $home_{b,j}$ is a time-invariant dummy taking value one if country j is bank b's home country by headquarter location. The bailout dummy variable $BO_{b,t}$ takes value one if bank b receives a bailout at time t.[16] $X_{b,t-1}$ denotes following bank-year control variables to capture omitted variables: assets, leverage, tier 1 capital ratio, non-performing loans, liquidity risk and globalness (number of bank b's active countries j) lagged by one period. $\theta_{b\times t}$, $\phi_{j\times t}$, and $\mu_{b,j}$ denote bank-time, borrower country-time and bank-borrower country fixed effects, respectively. Standard errors are clustered at both the bank and time level.

The coefficient of interest is β_1, which reflects to what extent a bailout increases the bank's propensity to grant new loans to home rather than to foreign borrowers. According to the financial protectionism hypothesis, I expect $\beta_1 > 0$. That is, a bank increases its lending volume or lending bias at home more than abroad, following a bailout.

Central to the estimation of equation (5) is the definition of the control group. That is, for which observations the bailout variable $BO_{b,t}$ takes value zero. It takes value zero for all banks that do not receive a bailout, which assumes that all banks in the sample not receiving a bailout are a reasonable counterfactual for the treatment variable bailout. However, I draw solely on the within bank or within bank-borrower country variation for estimation to avoid cross-sectional inference from different banks or different bank-country combinations (through bank and bank-borrower country fixed effects).

The first identification challenge to testing the financial protectionism is to absorb loan

[16]Note two things on the construction of the bailout variable. First, the bailout can come from any country. Thus, the bailout country may be different from the bank's home country in a few cases, for example Dexia. Second, the bailout keeps value one for all years in which the bailout is active. It takes value zero, after a bailout ends (for instance, after the scheduled payback of the recapitalization funds).

demand. The granular structure of the underlying loan-level data allows to address this in three steps. First, $\phi_{j\times t}$ capture all time-varying unobserved heterogeneity at the borrower country level, including a borrower country's demand for loans. Second, $\theta_{b\times t}$ capture all time-varying unobserved heterogeneity across banks. For instance, $\theta_{b\times t}$ controls for idiosyncratic shocks to banks' credit supply and other changes at the bank-time level. Third, adding $\mu_{b,j}$ controls for unobservable heterogeneity at the bank-borrower country level such as distance.

The second identification challenge is that bailouts are endogenous to other unobservable variables such as political connections. This selection bias may lead to biased coefficients. In Section 3.2, I address concerns on selection bias using propensity score matching on observable variables such as balance sheet characteristics and political connections. Furthermore, I address firm heterogeneity by constructing a granular bank-firm-year panel to employ firm-time fixed effects in the spirit of Khwaja and Mian (2008).[17]

Overall, the employed fixed effects structure allows addressing a range of alternative explanations, to rule out remaining concerns on a potentially spurious correlation between bailouts and a bank's propensity to prefer home over foreign borrowers. Central to the identification is the absorption of any demand shock affecting country j and any supply shock affecting bank b at time t. Thus, the empirical framework allows for identification of the differential propensity of bank b to lend to their home country rather than to a foreign country after receiving a bailout, using as controls other banks that are lending to the same countries but were not bailed out.

Firm level To analyze the effects of credit supply on real effects, I will now move to the firm-year level. I will test whether firms with exposure to foreign bailout banks experience a credit crunch and whether this affects firm performance. To establish real effects of financial protectionism I will proceed in three steps. First, I analyze whether there is a credit crunch for foreign firms following the bailouts. Second, I test whether firms are able to substitute this fall in credit with alternative funding sources. For instance, some firms may be able to draw credit from a bailout bank in its home country. Moreover, firms may also be able to substitute into alternative debt instruments such as non-syndicated loans or corporate bonds. Third, I will test whether imperfect credit substitution leads to real effects for firms.

[17]Further studies identifying loan supply effects using firm-time fixed effects are Jiménez, Ongena, Peydró and Saurina (2014) and Morais, Peydro and Ruiz Ortega (2019).

The key challenge to the identification of financial protectionism is to disentangle two forces intrinsically related to bailouts: financial protectionism and idiosyncratic bank shocks. It may well be, that the discrimination against foreign borrowers is caused by the banks idiosyncratic shock putting the bank into distress in the first place. The comparison of firms' dependence on foreign bailout banks (*foreign affected*) with their dependence on home bailout banks (*home affected*) allows disentangling these two effects; both variables capture firm dependence on bailout banks, while dividing the effect into home bailout banks and foreign bailout banks. If the bailout banks' initial problems are the cause of the fall in lending, then both foreign and home firms should be equally affected by the negative loan supply effect. If, on the other hand, the reason behind the reduction in lending is, indeed, protectionism associated with the bailout then foreign firms should be stronger affected than home firms by the reduction in lending.

In order to test for a credit crunch, credit substitution and real effects I estimate variants of following regression equation at the firm-year level:

$$\begin{aligned} \Delta\ y_{f,t} = \delta_1\ \textit{foreign affected}_{f,t-1} + \delta_2\ \textit{foreign unaffected}_{f,t-1} \\ + \delta_3\ \textit{home affected}_{f,t-1} + X_{f,t-1} + \phi_f + \phi_{c,i,t} + u_{f,t} \end{aligned} \tag{6}$$

The baseline specification tests for a foreign credit crunch associated with bailouts on the syndicated loan market. Therefore, the dependent variable $\Delta\ y_{f,t}$ will be the loan growth of total syndicated lending by firm f at year t. In the second specification, the dependent variable will be loan growth of total long-term debt of firm f to capture credit substitution into alternative debt instruments such as non-syndicated credit or corporate bonds. To analyze real effects, I use sales and employment growth as dependent variables. The variable $\textit{foreign affected}_{f,t-1}$ is the share of firm f's outstanding credit from foreign banks affected by a bailout as defined in equation (2), with lending relationships lagged by one period. Moreover, $\textit{foreign unaffected}_{f,t-1}$ captures a firm's relationship with foreign banks unaffected by a bailout and $\textit{home affected}_{f,t-1}$ captures a firm's relationship with home banks affected by a bailout, as defined in equations (3) and (4). The redundant variable is a firm's relationship with home banks that are unaffected by a bailout and, hence, forms the control group. $X_{f,t-1}$ denotes following firm-year control variables to capture firm demand: log of total assets, leverage, sales, liquidity and common equity, lagged by one period. ϕ_f denote firm fixed and $\phi_{c,i,t}$ denote country*industry*year fixed effects, where c stands for country and i for industry of firm f.

The main coefficient of interest δ_1 is on *foreign affected* and is the firm-level flip side of β_1, which is the estimated interaction coefficient ($home \times BO$) from bank-country level equation (5). It illustrates the change in loan growth for firms with high dependence on foreign bailout banks capturing the credit crunch of foreign firms. To analyze whether bailouts affect lending to home and foreign firms differently, I add the two control groups: i) *foreign unaffected* to capture a firm's dependence on foreign banks that are unaffected by bailouts, and ii) *home affected* to capture a firm's dependence on home banks that are affected by bailouts. Additionally, this specification sheds light on whether banks increase their home bias by cutting lending to foreign firms or rather by extending more of the new capital to home firms. To avoid contemporaneous effects of bailouts on firms' bank relationships, I include these variables in lags.

In case of perfect substitution, $\delta_1 = 0$ in the regressions with total syndicated lending and long-term debt as dependent variables as firms substitute the fall in lending by switching banks or resorting to non-syndicated debt instruments. For instance, if bailout banks in the home market retrench just as foreign banks shift their business into their own domestic markets, firms switch to home banks leaving net credit unaffected. However, this may not be possible as home banks are at an informational disadvantage relative to foreign banks who had formed lending relationships with the firms. A common finding in the literature is that it is difficult for firms to form new bank relationships in times of banking crises (Ongena and Smith, 2001; Chodorow-Reich, 2014). This gives rise to imperfect credit substitution, implying $\delta_1 < 0$.

In order to interpret the estimated coefficients as a loan supply effect, I use firm fixed effects and country*industry*time fixed effects to absorb time-varying loan demand per country-industry bucket. This assumes that all firms in the same country-industry bucket change their loan demand similarly. Alternatively, I will use country*time fixed effects as a less demanding specification and show that results are similar across different specifications. As loan demand may still vary for different firms in each country-industry bucket, I will validate this assumption at the bank-firm-year level using firm*time fixed effects in Section 3.2.1, as this specification is commonly interpreted as a loan supply effect (Khwaja and Mian, 2008; Jiménez, Ongena, Peydró and Saurina, 2014; Morais, Peydro and Ruiz Ortega, 2019). I will show that results are robust to this rigorous specification.

3 Main Results

I present the main results in four steps. First, I establish evidence on financial protectionism by analyzing bank lending at the bank-borrower country level and show that banks increase their home bias following a bailout (section 3.1). Thereafter, I examine the robustness of the results (section 3.2). Then, I evaluate real effects by showing that firms with higher dependence on foreign bailout banks have lower loan, long-term debt, sales and employment growth (section 4). Finally, I examine the characteristics of the protected home firms and illustrate that lending shifts towards larger, safer and less innovative firms at home (section 5).

3.1 Effect of Bailouts on Lending

Table 6 reports results for regression Equation (5) and shows that banks increase their home bias following a bailout. The dependent variable is the bias of bank b's lending to borrowers from country j at time t as defined in Equation (1). Column (1) looks at the within-bank and within-time variation by using bank and time fixed effects. To control for bank heterogeneity I add size, leverage, capitalization, non-performing loans, liquidity risk and globalness, which restricts the sample to observations with full data coverage in Bankscope. In line with expectations, the coefficient on $Home$ is positive, reflecting the positive home bias in bank lending throughout the sample. The coefficient of interest (β_1) on the interaction term (Home $\times$ Bailout) is positive and statistically significant. Following a bailout, banks increase the lending bias to their home market by ($\frac{0.177}{0.656+0.177}$ =) 21.2 %.

To address concerns about omitted variables, column (2) adds bank-time fixed effects to control for time-varying unobserved heterogeneity across banks. Thus, bank-time fixed effects capture idiosyncratic shocks to banks' credit supply and other changes at the bank-time level. As bank-time fixed effects subsume the bank control variables used in the first specification, this now allows for an analysis on the full sample. Thus, the tendency of bailout banks to lend more to their home country does not depend on the fact that certain banks lend more or less than others to all countries, as I include bank-time fixed effects.

To address time-varying changes in loan demand across countries, I further add bor-

rower country-time fixed effects in column (3). That is, borrower country-time fixed effects control for changes in loan demand at the borrower country level that is common to all banks. Therefore, the tendency of bailout banks to increase their home bias is also not driven by countries rolling out a bailout scheme to borrow more, as the estimates are robust to including borrower country-time fixed effects. In this preferred specification, banks increase the lending bias to their home market by ($\frac{0.253}{0.773+0.253}$ =) 24.6 %, after receiving a bailout.

The coefficient of interest on the interaction term *Home* × *Bailout* remains significant even after controlling for bank-borrower country fixed effects in column (4). This specification relies on the within bank-borrower country variation and thereby controls for further unobservable heterogeneity such as distance between bank and borrower country. The estimated coefficient is now smaller but remains both economically and statistically significant.

To explore the intensive margin of foreign bank lending following bailouts, I now re-estimate Equation (5), after replacing the dependent variable by the log outstanding loan volume issued by bank b to borrowers in country j at year t. Table 7 shows results on the intensive margin by repeating the identification strategy of Table 6. The coefficient of interest on the interaction term *Home* × *Bailout* is positive and statistically significant across specifications. In the most conservative specification shown in column (4), banks increase the lending volume to borrowers in their home country by 30.4 % relative to foreign borrowers, after receiving a bailout.

Overall, this suggests that banks are persuaded by the government to engage in financial protectionism in return for receiving a bailout. Across specifications, I find that banks increase their home bias following a bailout. Moreover, bailout banks increase the lending volume more to home borrowers than to foreign borrowers, relative to non-bailout banks. These results hold after controlling for loan demand, bank-borrower country characteristics and time-varying bank heterogeneity.

3.2 Robustness

In this section I address doubts on identification arising due to concerns that bailouts are likely endogenous. First, I address the concern of firm heterogeneity between bailout and non-bailout banks by employing firm-time fixed effects on the firm-bank-time level.

Second, I will turn to the issue of selection bias by applying propensity score matching to make bailout and non-bailout banks comparable on observable variables.

3.2.1 Firm Heterogeneity

The central identification challenge is to identify loan supply to foreign firms following a bailout. It may be that bailout banks are cutting credit more to foreign firms because the quality of their foreign loan portfolio is lower in comparison to non-bailout banks. Hence, firm heterogeneity could explain the differences in lending between bailout and non-bailout banks.

To address this concern, I will move the analysis to the bank-firm-year level in order to absorb loan demand through firm-time fixed effects. By comparing the lending behavior of bailout and non-bailout banks to the same borrower, I address the concern that differences in loan demand biases the results on bank lending (Khwaja and Mian, 2008).

Table 8 shows that bailout banks reduce their lending to foreign firms, relative to non-bailout banks after absorbing loan demand. The dependent variable is the log outstanding loan volume between bank b and firm f at year t. Column (1), adds bank-firm fixed effects to compare the lending of the same banks to the same firm over time.[18] In general, bailout banks extend loans with higher volume, as indicated by the positive coefficient on *Bailout*. The coefficient of interest on the interaction term (*Foreign* $\times$ *Bailout*), however, is highly significant and negative. This supports the previous finding that bailout banks reduce their lending to foreign firms compared to non-bailout banks.

To ensure that this negative effect on foreign lending reflects loan supply, column (2) and column (3) add country-industry-time and firm-time fixed effects. Therefore, column (3) supports that the negative effect of bailouts on foreign lending reflects loan supply, as it absorbs any time-varying changes in loan demand at the firm level. Following a bailout, banks reduce their lending volume to foreign firms by 7.2 % relative to non-bailout banks.

In order to control for time-varying differences across banks driven by factors at the bank level, I add bank-time fixed effects in column (4) and (5).[19] In the strictest specification reported in column (5), the magnitude of the coefficient is reduced but remains both statistically and economically significant at 3 %.

[18] The coefficient $Foreign_{b,f}$ is absorbed by bank-firm fixed effects.
[19] The coefficient on $Bailout_{b,t}$ gets absorbed through bank-time fixed effects.

Comparing column (2) and (3), both country-industry-time and firm-time fixed effects yield similar coefficients. This similarity supports the identification strategy at the firm level in section 4, where aggregation allows only the inclusion of country-industry-time fixed effects.

Overall, these results confirm the previous finding on bailouts and foreign lending: banks reduce their lending to foreign firms after receiving a bailout, which cannot be explained by firm heterogeneity.

3.2.2 Selection Bias

In this section I apply propensity score matching in order to address potential concerns of selection bias. The objective of this matching procedure is to make bailout and non-bailout banks comparable across observable variables. The matching exercise mimics a natural experiment in which treatment and control group are similar on bank level observables, such as capitalization or size, but differ with respect to the treatment - bailouts in this case. Moreover, I now compare bailout and non-bailout banks that are similarly affected by the banking crisis itself, which provides an alternative way to address bank heterogeneity discussed in Section 2. To implement propensity score matching I proceed in three steps. First, I implement the kernel weighting density algorithm. Second, I assess the quality of the match. Third, I will repeat the regression of Equation (5) on the matched sample.

I implement propensity score matching using the kernel weighting density algorithm on following observable variables: home country, year, total assets, leverage, tier 1 capital ratio, liquidity risk, non-performing loans, return on assets, globalness (defined as number of active borrower countries on the syndicated loan market) and political connections (defined as dummy with value one if the home government has a positive ownership share in the bank).

To assess the quality of the match, Figure 1 depicts the propensity score distribution before and after the implementation of the kernel weighting. The figure shows that before matching, bailout and non-bailout banks are heterogeneous across observable variables. However, the propensity score distribution of bailout and non-bailout banks looks similar after the match. This suggests that, after implementing the match, bailout and non-bailout banks are now comparable across observables and only differ in terms of the

bailout treatment.

We can now proceed to the analysis of the treatment effect by repeating the regression exercise of section 3.1 on the matched sample. Treatment and control group are now matched in terms of observable variables; and differ only in terms of whether they receive a bailout or not. Table 9 shows that regression results on the matched sample are similar to the previous results without matching. Coefficients remain comparable both in terms of statistical significance and economic magnitude. Intuitively, two banks that are now similar in terms of a number of observable variables, such as capitalization or profitability, but differ in whether they receive a bailout, change their home bias differentially. The bank affected by a bailout increase its home bias substantially more than the unaffected bank. This suggests, that the results discussed in Section 3.1 are unlikely driven by a selection bias.

4 Real Effects

To examine whether the negative loan supply to foreign firms has real effects, I will now turn to the firm-year level. So far, bank-borrower country level regressions capture changes in lending by a bank to all borrowers from a specific country. However, if firms are able to switch banks or use alternative forms of funding, such as issuing corporate bonds, changes in bank lending may not affect firm performance. Suppose a bailout bank cuts lending to a foreign firm. If this firm then forms a new borrowing relationship with a bailout bank at home, or issue a corporate bond, this will mitigate the negative loan supply effect. To establish a link between the negative loan supply shock and real effects I test for credit substitution by firms in two steps. I analyze firm's credit substitution, first, by switching banks on the syndicated loan market and, second, by issuing alternative debt instruments. I find that firms with stronger relationships with foreign bailout banks experience a larger drop in lending, which cannot be undone by credit substitution. This imperfect credit substitution gives rise to real effects: Firms with stronger reliance on foreign bailout banks perform worse.

4.1 Credit Substitution on the Syndicated Loan Market

I now analyze the impact of bailouts on firm lending and test for credit substitution on the syndicated loan market. Table 10 shows results of estimating regression Equation (6) and addresses firm heterogeneity through different combinations of fixed effects and firm controls. Column (1) controls for unobservable time-invariant firm characteristics through firm fixed effects and time-varying unobservable firm characteristics through country*industry*year fixed effects. The dependent variable is loan growth (Δ *loan volume*$_{f,t}$). The coefficient on *foreign affected banks* is negative and statistically significant at the 1 % level. Increasing dependence on foreign affected banks from the 10^{th} to the 90^{th} percentile decreases loan growth by 6.5 % $((0.71-0.0)\times-0.092)$. The coefficient for dependence on *foreign unaffected banks* is about half in size of the coefficient for foreign affected banks. This suggests that the flight home effect documented in (Giannetti and Laeven, 2012) cannot explain the documented increase in home lending fully. Although all foreign banks are found to retrench in general in line with the flight home hypothesis, the effect for foreign bailout banks is twice as strong. In contrast, firms that have relationships with *home affected banks* do not experience an increase in lending after these banks are bailed out. Thus, firms can not undo the fall in credit by foreign bailout banks by resorting to home bailout banks. Overall, this suggests that financial protectionism leads to a negative loan supply effect on foreign firms.

The results in Table 10 highlight that firms are unable to undo a fall in credit from a foreign bailout bank by switching banks on the syndicated loan market. The results are robust to alternative specifications. Effects are similar when absorbing demand effects instead with less demanding country*year fixed effects in column (3). In addition to the time-varying fixed effects, I add firm-year controls to control for loan demand, restricting the sample to firms for which I have balance sheet information in column (2) and (4). The coefficient on foreign affected banks remains stronger than for foreign unaffected banks, although the difference now becomes slightly smaller, suggesting that controlling for firm demand is important but that the story cannot be explained by firm heterogeneity only. The result on imperfect credit substitution of firms is a common finding in the literature on banking crises (Ongena and Smith, 2001; Chodorow-Reich, 2014).

To disentangle financial protectionism from the idiosyncratic bank shock that are both related to the bailout in the first place, I will compare foreign affected with the control group home affected. Intuitively, both capture the exposure to banks that are bailed

out and are thus all subject to idiosyncratic bank shocks. The difference between these two groups is now only the nationality of the borrower relative to the nationality of the bailout bank. Table 10 illustrates that while exposure to foreign affected banks has a negative effect on a firm's loan growth, exposure to home affected banks has no effect irrespective of the specification. This shows that while banks cut lending to foreign firms they do not extend more loans to home firms following a bailout.

Overall, this documents a differential effect of bank bailouts on lending to firms, depending on the relative nationality between firm and bank. These results provide evidence that banks engage in financial protectionism, that cannot be explained by idiosyncratic bank shocks and the flight home effect documented in the literature.

4.2 Credit Substitution into Alternative Debt Instruments and Firm Performance

I now analyze the ability of firms to use alternative debt instruments and the impact of bailouts on firm performance. To obtain data on the liability side of firms, I now restrict the sample to firms with available balance sheet information. Table 11 shows results of estimating regression Equation (6) using the growth rates of long-term debt, employment and sales as dependent variables. In order to absorb loan demand, I add firm controls, firm fixed effects as well as country*industry*year fixed effects to all specifications. Column (1) shows that firms can at most imperfectly substitute the decline in syndicated lending by alternative sources of funding - including non-syndicated loans and corporate bonds. Consistent with the fall in credit, I find that firms borrowing from foreign affected banks perform worse than firms borrowing from foreign unaffected banks and home affected banks. Moving firms from the 10^{th} to the 90^{th} percentile in terms of dependence on foreign affected banks, leads to lower long-term debt (-6.7 %, column (1)), sales (-3.5 %, column (2)) and employment growth (-3.0 %, column (3)). The real effects of foreign unaffected banks are around three-quarters in size. Therefore, the difference in performance between firms relying on foreign affected and foreign unaffected banks is less pronounced when looking at real effects, compared to the nominal lending effects.

In sum, Tables 10 and 11 suggest that the foreign syndicated lending contraction has real economic effects on the affected firms. As banks engage in financial protectionism they cut lending to foreign firms. In turn, these firms cannot undo this negative loan

supply effect. Neither by switching banks on the syndicated loan market nor by using other forms of funding such as non-syndicated loans or corporate bonds. Thus, negative loan supply to foreign firms paired with imperfect credit substitution gives rise to real effects: Firms that depend more on foreign bailout banks experience lower loan, sales and employment growth.

5 Credit Allocation

In this section, I examine whether bailouts distort credit allocation in the home market. If government intervention shifted credit allocation towards larger, safer and less innovative firms, this would lower productivity and growth in the home market. To test the effect on credit allocation, I sort borrowers into the bottom and top halves according to their distribution of size, R&D intensity and ROA volatility, fixing the distribution at $t-1$. Where size is defined by borrower f's total assets, R&D intensity is the ratio of R&D expenditure over sales, and ROA volatility is an ex-ante volatility measure defined as the five-year standard deviation of firm f's return on assets (ROA, using profit & loss before tax) from year $t-5$ to $t-1$, following Heider et al. (2019). Within borrower types, I then compare lending, holding the same borrower constant.

Table 12 examines the shift in credit allocation in the home market distinguishing borrowers by size, risk and R&D intensity. Comparing effects at home and abroad, bailout banks increase lending within large borrowers, while they do not increase lending to small borrowers (columns 1 and 2). In columns 3 and 4, I instead split borrowers into the top and bottom halves according to the distribution of R&D intensity. Within less innovative borrowers, bailout banks increase their lending more at home than abroad. Within more innovative borrowers, this coefficient is positive but of lower magnitude. Moreover, comparing effects at home relative to abroad, bailout banks increase their loan volume within safe borrowers, while they do not increase lending within risky borrowers (if anything, they decrease lending, columns 5 and 6).

In sum, these results provide evidence that government intervention distorts the credit allocation in the home market by protecting larger, safer and less innovative firms, which could be harmful for the outlook of growth and productivity in the home market.

6 Mechanism

This section provides evidence that governments engage in financial protectionism and that the mechanism operates through a transfer of control rights from bank to government. In particular, governments gain novel influence over a bank through a nationalization that accompanies the bailout of the bank. In turn, the government gains influence over the business model as part of the bailout and, thus, suades the bank to prefer home borrowers in their lending. In contrast, bailout banks that only receive a recapitalization but are not nationalized, and hence no transfer of control rights to the government occurs, do not significantly change their loan mix.

The propensity of banks to prefer home over foreign borrowers is strongest in those cases, where a transfer of control rights occurs for those banks that have no political connections before the bailout. In those cases governments gain novel influence over a bank to which it had no political connections, in the form of public ownership, before the bailout. Thus, financial protectionism is strongest in those cases where bailouts brought about a new increase in government control over a particular bank.[20]

To test the mechanism that operates through an increase in governments' control rights, I capture following two dimensions. First, whether the government already has influence over the bank irrespective of the bailout. I distinguish banks into banks with and without political connections to capture the extent to which the government already has influence over the bank before the bailout. A bank is defined as politically connected, if either the home government is one of its shareholders or if the institution is publicly owned. Second, whether a bailout comes with a transfer of control rights from bank to the government. I distinguish bailouts into two categories: i) bailouts that come with a transfer of control rights and ii) bailouts that come without a transfer of control rights to the government. I define a bailout with a transfer of control rights to the government as a bank nationalization as this gives the government direct influence over the banks' management. A bailout with no transfer of control rights is defined as a pure capital injection, either through a recapitalization or by providing unusual liquidity, but without a change in public ownership of the bank.[21]

[20]The importance of political connections for bank bailouts has been shown in Duchin and Sosyura (2012); Chavaz and Rose (2018), while Bertrand, Kramarz, Schoar and Thesmar (2018); Goldman, Rocholl and So (2013) highlight importance of political connections more generally.

[21]I omit bank-borrower country fixed effects as both *Political Connections* and *Home* are invariant at the bank-borrower country level.

Table 13 provides evidence in support of the mechanism that works through a transfer of control rights to the government. Column 1 tests the differential effect of a transfer of control rights for politically unconnected banks on lending through triple interactions. The strongest increase in home lending is associated with bailouts that transfer control rights from ex-ante politically unconnected banks to the government. As can be seen in row three, no significant effect on home lending can be found for those bailouts that do not transfer control rights from politically unconnected banks to the government. I do not find evidence for protectionism operating through bailouts without transfer of control rights (i.e. pure capital injections) independent of a banks' political connections.

Overall, these findings suggests that financial protectionism operates through a transfer of control rights from ex-ante politically unconnected banks to the government, as the government establishes direct influence over the banks' business through the bailout. In turn, governments make use of their newly gained control rights by persuading the respective bank to redirect lending towards the home market in return for the bailout - in line with the financial protectionism hypothesis (Rose and Wieladek, 2014).

7 Conclusion

When governments support their ailing banking sector, they have an incentive that the home economy benefits from this controversial measure. This paper provides evidence that governments engage in financial protectionism by persuading banks to redirect loan supply towards the home market in return for the bailout. In particular, I find that bailout banks change their loan mix in favor of home borrowers, while this is not the case for non-bailout banks. I document that the mechanism of financial protectionism operates through a transfer of control rights from government to bank. Additionally, financial protectionism alters the structure of cross-border banking and thereby affects the real economy. In the home market, government support for banks distorts credit allocation towards larger, safer and less innovative firms. Abroad, financial protectionism leads to a negative loan supply shock to foreign firms that translates into lower sales and employment growth due to imperfect credit substitution.

This paper contributes to the debate on designing the international architecture of bank resolution within the European Banking Union. I provide evidence that bank support located at the national government level discourages international economic activity,

reduces financial integration, distorts credit towards less productive firms and harms both growth and employment.

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8 Tables and Figures

8.1 Descriptives

Table 1: **Summary Statistics (*bank-level sample*)**

Variable	Mean	Std. Dev.	Min.	Max.	N
ln(Total assets)	16.688	2.178	10.597	21.965	3395
Total lending in bn USD	8.196	32.91	0	625.198	5229
Leverage in %	91.962	7.744	5.073	100	3389
Tier 1 ratio in %	12.223	6.487	2.02	100	2240
Liquidity risk in %	1.197	3.107	0	90.031	3185
Non-performing loans in %	7.179	9.045	0	95.828	2216
Political Connections $\in \{0, 1\}$	0.4	0.49	0	1	5321
Home share in %	58.285	41.442	0	100	5321
Globalness $\in [1, \infty]$	9.827	17.993	1	94	5321

Note: This table shows summary statistics of variables at the *bank-year-level*. *Total lending*$_{b,t}$ (in bn USD) is bank b's total outstanding lending volume on the syndicated loan market in year t. *Leverage*$_{b,t}$ is bank b's leverage in year t. *Tier 1 ratio*$_{b,t}$ is bank b's tier 1 capital ratio in year t. *Liquidity risk*$_{b,t}$ is the ratio of total loans to deposits plus short-term liability claims. *Non-performing loans*$_{b,t}$ is the ratio of non-performing loans (NPL) to total loans (including syndicated and non-syndicated lending). *Political Connections*$_{b,t}$ is a dummy with value one if the home government has a positive ownership share in bank b. *Home share*$_{b,t}$ is bank b's ratio of home loans to total loans on the syndicated loan market. *Globalness*$_{b,t}$ is defined as bank b's number of active borrower countries on the syndicated loan market in year t.

Table 2: **Bailout vs. Non-Bailout Banks (*bank-level sample*)**

	Bailout Banks		**Non-Bailout Banks**		**Mean Diff**
	mean	sd	mean	sd	t
ln(Total assets)	18.24	(1.70)	16.56	(2.16)	-12.16
Total lending in bn USD	33.63	(63.29)	6.74	(29.61)	-13.63
Leverage in %	93.77	(4.39)	91.81	(7.94)	-3.90
Tier 1 ratio in %	11.96	(4.39)	12.25	(6.66)	0.60
Liquidity risk in %	0.96	(0.66)	1.22	(3.23)	1.29
Non-performing loans in %	12.81	(12.56)	6.54	(8.32)	-10.10
Political Connections $\in \{0, 1\}$	0.58	(0.49)	0.39	(0.49)	-6.37
Home share in %	46.24	(37.42)	58.98	(41.56)	5.11
Globalness $\in [1, \infty]$	25.44	(27.81)	8.92	(16.82)	-15.57

Note: This table shows summary statistics for bailout and non-bailout banks separately for variables at the *bank-year-level*. There are a total of 66 bailout banks and 466 non-bailout banks. *Total lending*$_{b,t}$ (in bn USD) is bank b's total outstanding lending volume on the syndicated loan market in year t. *Leverage*$_{b,t}$ is bank b's leverage in year t. *Tier 1 ratio*$_{b,t}$ is bank b's tier 1 capital ratio in year t. *Liquidity risk*$_{b,t}$ is the ratio of total loans to deposits plus short-term liability claims. *Non-performing loans*$_{b,t}$ is the ratio of non-performing loans (NPL) to total loans (including syndicated and non-syndicated lending). *Political Connections*$_{b,t}$ is a dummy with value one if the home government has a positive ownership share in bank b. *Home share*$_{b,t}$ is bank b's ratio of home loans to total loans on the syndicated loan market. *Globalness*$_{b,t}$ is defined as bank b's number of active borrower countries on the syndicated loan market in year t.

Table 3: **Summary Statistics (*bank-borrower country-level sample*)**

Variable	Mean	Std. Dev.	Min.	Max.	N
ln(Loan volume)	4.634	1.86	0.224	10.471	51272
Lending bias $\in [-1, 1]$	0.159	0.657	-0.986	0.999	51281
ln(Total assets)	18.928	1.858	12.354	21.965	33379
Leverage in %	94.281	4.943	16.029	100	33650
Tier 1 ratio in %	11.822	9.415	3.4	100	27558
Liquidity risk in %	1.172	3.191	0	90.031	30927
Non-performing loans in %	5.564	5.492	0.129	45.176	25607
Bailout $\in \{0, 1\}$	0.142	0.349	0	1	52289
Control Rights Transfer $\in \{0, 1\}$	0.036	0.187	0	1	52289
Political Connections $\in \{0, 1\}$	0.368	0.482	0	1	52289
Globalness $\in [1, \infty]$	42.766	27.394	1	94	52289

Note: This table shows summary statistics of variables at the *bank-borrower country-year-level*. *ln(Loan volume)*$_{b,j,t}$ is the log of bank b's outstanding lending volume to all borrowers in country j on the syndicated loan market in year t. *Lending bias*$_{b,j,t}$ is the lending bias of bank b to all borrowers from country j at time t as defined in Section 2. *Leverage*$_{b,t}$ is bank b's leverage in year t. *Tier 1 ratio*$_{b,t}$ is bank b's tier 1 capital ratio in year t. *Liquidity risk*$_{b,t}$ is the ratio of total loans to deposits plus short-term liability claims. *Non-performing loans*$_{b,t}$ is the ratio of non-performing loans (NPL) to total loans (including syndicated and non-syndicated lending). *Bailout*$_{b,t}$ is a dummy with value one if bank b receives a bailout in year t. *Control Rights Transfer*$_{b,t}$ is a dummy with value one if the bailout of bank b is a nationalization. *Political Connections*$_{b,t}$ is a dummy with value one if the home government has a positive ownership share in bank b. *Globalness*$_{b,t}$ is defined as bank b's number of active borrower countries on the syndicated loan market in year t.

Table 4: **Summary Statistics (*firm-level sample*)**

Variable	Mean	Std. Dev.	Min.	Max.	N
Foreign affected $\in [0,1]$	0.151	0.295	0	1	161645
Foreign unaffected $\in [0,1]$	0.631	0.413	0	1	161645
Home affected $\in [0,1]$	0.037	0.142	0	1	161645
Δ loan volume	0.02	0.327	-1.535	5.109	132931
Δ long-term debt	0.075	0.554	-3.03	3.034	53146
Δ sales	0.07	0.201	-1.545	1.093	53311
Δ employment	0.031	0.168	-0.865	0.87	44844
ln(Total assets)	8.433	2.032	3.516	16.381	57394
Leverage in %	32.943	19.464	0	135.108	57648
ln(Sales)	7.993	2.235	-5.116	23.464	56449
Liquidity in %	0.001	2.968	-464.512	94.8	54925
ln(Common equity)	7.395	2.254	-4.51	22.548	55601

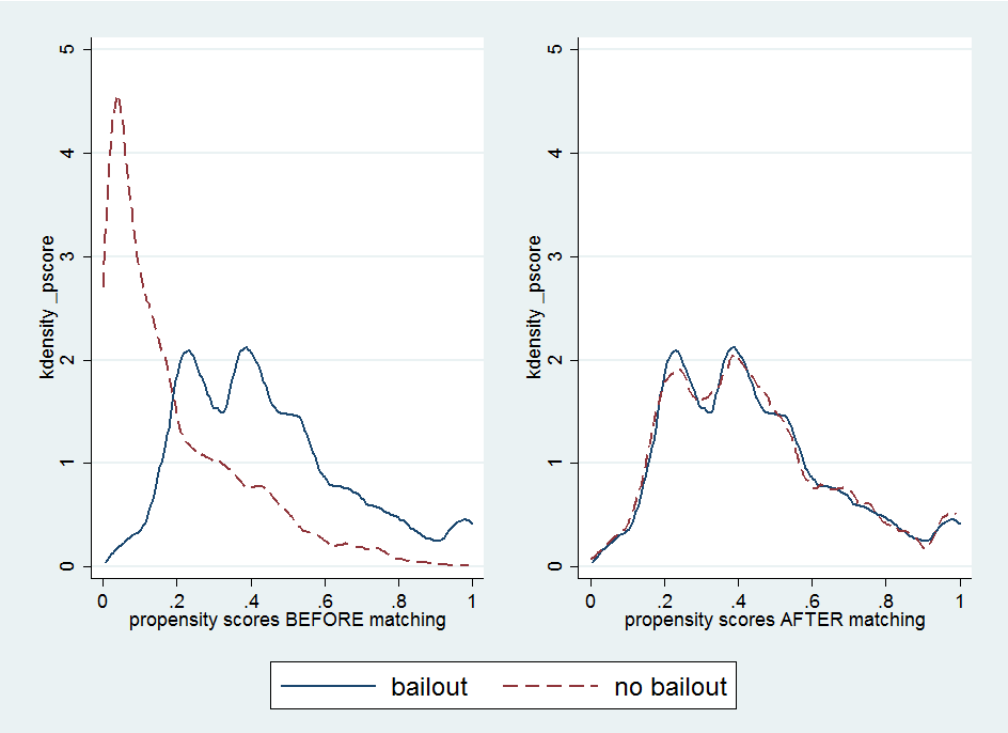
Note: This table shows summary statistics of variables at the *firm-year-level*. *foreign affected*$_{f,t-1}$ is the share of firm f's outstanding loan volume coming from foreign banks affected by a bailout at t. *foreign unaffected*$_{f,t-1}$ is the share of loans coming from banks unaffected by a bailout. *home affected*$_{f,t-1}$ is the share of firm f's outstanding loan volume coming from home banks that received by a bailout at t. Δ*loan volume*$_{f,t}$ is the log difference of firm f's total borrowing on the syndicated loan market. Δ*long-term debt*$_{f,t}$, Δ*sales*$_{f,t}$ and Δ*employment*$_{f,t}$ is the log difference of firm f's long-term debt, sales and employment respectively. Δ*Liquidity*$_{f,t}$ (in %) is the ratio of firm f's cash flows over total assets.

Table 5: **Summary Statistics (*bank-firm-level sample*)**

Variable	Mean	Std. Dev.	Min.	Max.
ln(Loan volume)	3.771	1.35	0.122	7.045
Foreign $\in \{0,1\}$	0.768	0.422	0	1
Bailout $\in \{0,1\}$	0.184	0.387	0	1
N		563199		

Note: This table shows summary statistics of variables at the *bank-firm-year-level* (or *loan-level*). *ln(Loan volume)*$_{b,f,t}$ is log of bank b's outstanding lending volume to borrower f in year t. *Foreign*$_{f,t}$ is a dummy with value one if firm f's nationality is different from bank b, by headquarter location. *Bailout*$_{b,t}$ is a dummy with value one if bank b receives a bailout in year t.

Figure 1: **Propensity Score Distribution**



Note: This Figure depicts the propensity score distribution before and after the implementation of the kernel weighting, to assess the quality of the propensity score matching. The figure shows that before matching, bailout and non-bailout banks are heterogenous across observable variables. After matching bailout and non-bailout banks are now comparable across observables. For further details on observable variables and the matching procedure see Section 3.2.2.

8.2 Results

Table 6: **Effect of Bailouts on Home Bias in Lending**

VARIABLES	(1) Bias	(2) Bias	(3) Bias	(4) Bias
Home × Bailout$_{b,t}$	0.177**	0.214***	0.253***	0.144**
	(0.0784)	(0.0727)	(0.0660)	(0.0500)
Home	0.656***	0.578***	0.773***	
	(0.0470)	(0.0339)	(0.0338)	
Bailout_b,t	-0.0184			
	(0.0216)			
Assets	0.0346			
	(0.0285)			
Leverage	-0.156			
	(0.531)			
Capital ratio	-0.000355			
	(0.00165)			
NPL share	-0.0596			
	(0.174)			
Liquidty Risk	0.00321			
	(0.00530)			
Globalness	-0.00146			
	(0.00194)			
Observations	21,775	48,526	48,526	48,526
Bank FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Bank x Time FE	No	Yes	Yes	Yes
Borrower country x Time FE	No	No	Yes	Yes
Bank x Borrower country FE	No	No	No	Yes
Cluster	Bank + Time	Bank + Time	Bank + Time	Bank + Time

Note: This table shows regressions on the bank-borrower country-year level. The dependent variable is lending bias of bank b to country j at year t as defined in Section 2. $Home_{b,j}$ is a dummy with value one for the banks home country. *Bailout* is a time-varying dummy with value one during active bank bailouts as defined in Section 2. $Leverage_{b,t-1}$ is bank b's leverage in year $t-1$. *Tier 1 ratio*$_{b,t-1}$ is bank b's tier 1 capital ratio in year $t-1$. *Liquidity risk*$_{b,t-1}$ is the ratio of total loans to deposits plus short-term liability claims, lagged by one year. *Non-performing loans*$_{b,t-1}$ is the ratio of non-performing loans (NPL) to total loans (including syndicated and non-syndicated lending), lagged by one year. $Globalness_{b,t-1}$ is defined as bank b's number of active borrower countries on the syndicated loan market in year $t-1$. For further details on the variables see Table 3. All standard errors are clustered both at the bank and year level. *** p<0.01, ** p<0.05, * p<0.1

Table 7: **Effect of Bailouts on Lending Volume**

VARIABLES	(1) log loan volume	(2) log loan volume	(3) log loan volume	(4) log loan volume
Home × Bailout$_{b,t}$	0.630**	0.650**	0.579**	0.304*
	(0.249)	(0.282)	(0.231)	(0.163)
Home	2.814***	2.509***	2.061***	
	(0.139)	(0.108)	(0.0965)	
Bailout_b,t	-0.00623			
	(0.0708)			
Assets	0.116			
	(0.0788)			
Leverage	1.221			
	(1.261)			
Capital ratio	0.00196			
	(0.00426)			
NPL share	-0.388			
	(0.459)			
Liquidty Risk	-0.00248			
	(0.00348)			
Globalness	0.0102			
	(0.00593)			
Observations	21,661	48,539	48,539	48,539
Bank FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Bank x Time FE	No	Yes	Yes	Yes
Borrower country x Time FE	No	No	Yes	Yes
Bank x Borrower country FE	No	No	No	Yes
Cluster	Bank + Time	Bank + Time	Bank + Time	Bank + Time

Note: This table shows regressions on the bank-borrower country-year level. The dependent variable is the log outstanding loan volume of bank b to borrowers in country j at year t. $Home_{b,j}$ is a dummy with value one for the banks home country. *Bailout* is a time-varying dummy with value one during active bank bailouts as defined in Section 2. $Leverage_{b,t-1}$ is bank b's leverage in year $t-1$. *Tier 1 ratio*$_{b,t-1}$ is bank b's tier 1 capital ratio in year $t-1$. *Liquidity risk*$_{b,t-1}$ is the ratio of total loans to deposits plus short-term liability claims, lagged by one year. *Non-performing loans*$_{b,t-1}$ is the ratio of non-performing loans (NPL) to total loans (including syndicated and non-syndicated lending), lagged by one year. $Globalness_{b,t-1}$ is defined as bank b's number of active borrower countries on the syndicated loan market in year $t-1$. For further details on the variables see Table 3. All standard errors are clustered both at the bank and year level. *** p<0.01, ** p<0.05, * p<0.1

Table 8: **Firm Heterogeneity: Firm×Time Fixed Effects**

VARIABLES	(1) log loan volume	(2) log loan volume	(3) log loan volume	(4) log loan volume	(5) log loan volume
Foreign × Bailout	-0.089**	-0.079***	-0.072***	-0.073***	-0.030*
	(0.038)	(0.020)	(0.020)	(0.025)	(0.017)
Bailout	0.252***	0.060***	0.060***		
	(0.041)	(0.019)	(0.019)		
Observations	483,176	483,176	483,176	483,176	483,176
R-squared	0.875	0.925	0.948	0.888	0.951
Bank × Firm FE	Yes	Yes	Yes	Yes	Yes
Bank × Time FE	No	No	No	Yes	Yes
Country × Industry × Time FE	No	Yes	-	No	-
Firm × Time FE	No	No	Yes	No	Yes
Cluster	Country × Time	Country × Time	Country × Time	Country × Time	Country × Time

Note: This table shows regressions on the bank-firm-year level. The dependent variable is the log outstanding loan volume of bank b to borrowers f at year t; $Foreign_{b,f}$ is a dummy with value one if firm f has a different nationality than bank b; *Bailout* is a time-varying dummy with value one during active bank bailouts as defined in Section 2. For further details on the variables see Table 5. All standard errors are clustered both at the bank and year level. *** p<0.01, ** p<0.05, * p<0.1

Table 9: **Matching: Effect of Bailouts on Home Bias in Lending**

VARIABLES	(1) Bias	(2) Bias	(3) Bias	(4) Bias
Home × Bailout$_{b,t}$	0.204**	0.209**	0.234***	0.209***
	(0.0845)	(0.0817)	(0.0832)	(0.0776)
Home	0.617***	0.611***	0.835***	0.838***
	(0.0583)	(0.0522)	(0.0530)	(0.0623)
Bailout_b,t	-0.0291	-0.0358	-0.0147	-0.0344*
	(0.0244)	(0.0218)	(0.0251)	(0.0207)
Assets	-0.00712	0.0648	0.0225	0.0492
	(0.0308)	(0.0421)	(0.0307)	(0.0455)
Leverage	-0.0187	0.0667	-0.228	-0.289
	(0.577)	(0.460)	(0.486)	(0.343)
Capital ratio	-0.00398***	-0.00194	0.000715	0.00127
	(0.00142)	(0.00141)	(0.00140)	(0.00130)
NPL share	-0.198	-0.0550	0.0487	0.158
	(0.186)	(0.102)	(0.175)	(0.106)
Liquidty Risk	0.00233	0.0248**	0.000584	0.0222**
	(0.00501)	(0.0108)	(0.00421)	(0.0106)
Pol. Connect. = o,	-	-	-	-
Globalness	0.000423	0.000849	-0.00436**	-0.00473**
	(0.00190)	(0.00192)	(0.00217)	(0.00213)
Observations	19,884	19,758	19,692	19,562
PS Matching	No	Yes	No	Yes
Bank FE	Yes	Yes	Yes	Yes
Borrower country x Time FE	No	No	Yes	Yes
Cluster	Bank	Bank	Bank	Bank

Note: This table shows regressions on the bank-borrower country-year level, after implementing propensity score matching. The dependent variable is lending bias of bank b to country j at year t as defined in Section 2. *Home*$_{b,j}$ is a dummy with value one for the banks home country. *Bailout* is a time-varying dummy with value one during active bank bailouts as defined in Section 2. *Leverage*$_{b,t-1}$ is bank b's leverage in year $t-1$. *Tier 1 ratio*$_{b,t-1}$ is bank b's tier 1 capital ratio in year $t-1$. *Liquidity risk*$_{b,t-1}$ is the ratio of total loans to deposits plus short-term liability claims, lagged by one year. *Non-performing loans*$_{b,t-1}$ is the ratio of non-performing loans (NPL) to total loans (including syndicated and non-syndicated lending), lagged by one year. *Globalness*$_{b,t-1}$ is defined as bank b's number of active borrower countries on the syndicated loan market in year $t-1$. For further details on the variables see Table 3. All standard errors are clustered both at the bank and year level. *** p<0.01, ** p<0.05, * p<0.1

Table 10: **Impact of Bailouts on Firm Lending**

VARIABLES	(1) Δ loan volume	(2) Δ loan volume	(3) Δ loan volume	(4) Δ loan volume
foreign affected banks	-0.092***	-0.150***	-0.091***	-0.132***
	(0.020)	(0.039)	(0.015)	(0.026)
foreign unaffected banks	-0.055***	-0.102***	-0.050***	-0.081***
	(0.017)	(0.030)	(0.013)	(0.021)
home affected banks	0.007	-0.035	-0.001	-0.021
	(0.018)	(0.061)	(0.013)	(0.035)
assets		0.041***		0.026***
		(0.010)		(0.006)
leverage		0.131***		0.116***
		(0.036)		(0.023)
sales		0.000		0.000*
		(0.000)		(0.000)
liquidity		0.031**		0.029**
		(0.015)		(0.012)
common equity		-0.000		-0.000*
		(0.000)		(0.000)
Observations	87,354	25,667	130,107	43,244
R-squared	0.360	0.377	0.163	0.171
Firm FE	Yes	Yes	Yes	Yes
Country × Time FE	-	-	Yes	Yes
Country × Industry × Time FE	Yes	Yes	-	-
Controls	-	Yes	-	Yes
Cluster	Firm	Firm	Firm	Firm

Note: This table shows regressions on the firm-year level. The dependent variable is the log difference of the loan volume of firm f received by all banks at year t; *foreign affected*$_{f,t-1}$ is the share of firm f's outstanding loan volume coming from foreign banks affected by a bailout at t. *foreign unaffected*$_{f,t-1}$ is the share of loans coming from banks unaffected by a bailout. *home affected*$_{f,t-1}$ is the share of firm f's outstanding loan volume coming from home banks that received by a bailout at t. *assets*$_{f,t-1}$, *leverage*$_{f,t-1}$, *sales*$_{f,t-1}$, *liquidity*$_{f,t-1}$ and *common equity*$_{f,t-1}$ is the respective balance sheet variable of firm f lagged by one year. For further details on the definition of variables see Section 2 and for summary statistics see Table 4. All standard errors are clustered at the firm level. *** p<0.01, ** p<0.05, * p<0.1

Table 11: **Impact of Bailouts on Credit Substitution and Firm Performance**

VARIABLES	(1) Δ long-term debt	(2) Δ sales	(3) Δ employment
foreign affected banks	-0.094**	-0.049***	-0.043***
	(0.042)	(0.015)	(0.014)
foreign unaffected banks	-0.075**	-0.035***	-0.036***
	(0.031)	(0.012)	(0.011)
home affected banks	0.020	0.048	-0.006
	(0.112)	(0.030)	(0.033)
assets	0.250***	0.078***	0.052***
	(0.016)	(0.006)	(0.005)
leverage	1.268***	-0.022	0.011
	(0.060)	(0.019)	(0.017)
sales	-0.000	0.000***	-0.000
	(0.000)	(0.000)	(0.000)
liquidity	0.317***	0.071	0.057***
	(0.050)	(0.046)	(0.021)
common equity	-0.000**	-0.000***	0.000
	(0.000)	(0.000)	(0.000)
Observations	24,568	25,531	22,170
R-squared	0.463	0.618	0.512
Firm FE	Yes	Yes	Yes
Country × Industry × Time FE	Yes	Yes	Yes
Cluster	Firm	Firm	Firm

Note: This table shows regressions on the firm-year level. The dependent variables Δ*long-term debt*$_{f,t}$, Δ*sales*$_{f,t}$ and Δ*employment*$_{f,t}$ are the log difference of firm f's long-term debt, sales and employment respectively. *foreign affected*$_{f,t-1}$ is the share of firm f's outstanding loan volume coming from foreign banks affected by a bailout at t. *foreign unaffected*$_{f,t-1}$ is the share of loans coming from banks unaffected by a bailout. *home affected*$_{f,t-1}$ is the share of firm f's outstanding loan volume coming from home banks that received by a bailout at t. *assets*$_{f,t-1}$, *leverage*$_{f,t-1}$, *sales*$_{f,t-1}$, *liquidity*$_{f,t-1}$ and *common equity*$_{f,t-1}$ is the respective balance sheet variable of firm f lagged by one year. For further details on the definition of variables see Section 2 and for summary statistics see Table 4. All standard errors are clustered at the firm level. *** p<0.01, ** p<0.05, * p<0.1

Table 12: **Impact of Bailouts on Banks' Loan Portfolio**

VARIABLES	(1) Bottom-half firm size	(2) Top-half firm size	(3) Bottom-half R&D intensity	(4) Top-half R&D intensity	(5) Bottom-half RoA volatility	(6) Top-half RoA volatility
Home × Bailout	0.010	0.069*	0.137***	0.100**	0.066**	-0.049
	(0.027)	(0.035)	(0.043)	(0.046)	(0.028)	(0.036)
Observations	57,339	62,493	21,531	22,371	56,421	54,678
Bank × Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Bank × Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm × Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Country × Time	Country × Time	Country × Time	Country × Time	Country × Time	Country × Time

Note: This table shows regressions on the bank-firm-year level. The dependent variable is the log outstanding loan volume of bank b to borrowers f at year t; The sample is split into the top and bottom half of the annual median according to the distribution of firm size, firm R&D intensity and firm RoA volatility; *Home* is a dummy with value one for the banks home country; *Bailout* is a time-varying dummy with value one during active bank bailouts as defined in Section 2. For further details on the variables see Table 5. All standard errors are clustered both at the country-year level. *** p<0.01, ** p<0.05, * p<0.1

Table 13: **Transfer of Control Rights and Political Connections**

VARIABLES	(1) log loan volume	(2) Bias
Home × Control Rights × No Political Connection	2.538***	0.589*
	(0.750)	(0.295)
Home × Control Rights	-0.156	0.142
	(0.673)	(0.193)
Home × No Control Rights × No Political Connection	0.325	0.0972
	(0.450)	(0.157)
Home × No Control Rights	0.361	0.152
	(0.389)	(0.119)
Home × No Political Connection	0.0654	0.0433
	(0.231)	(0.0818)
Home	2.013***	0.678***
	(0.187)	(0.0661)
Observations	48,539	47,850
Bank x Time FE	Yes	Yes
Borrower country x Time FE	Yes	Yes
Cluster	Bank + Time	Bank + Time

Note: This table shows regressions on the bank-borrower country-year level. In column 1, the dependent variable is the log outstanding loan volume of bank b to borrowers in country j at year t; In column 2, the dependent variable is lending bias of bank b to country j at year t as defined in Section 2; *Home* is a dummy with value one for the banks home country. *Control Rights Transfer*$_{b,t}$ is a dummy with value one if the bailout of bank b is a nationalization. *Political Connections*$_{b,t}$ is a dummy with value one if the home government has a positive ownership share in bank b. For further details on the variables see Table 3. All standard errors are clustered both at the bank and year level. *** p<0.01, ** p<0.05, * p<0.1