Political Connections: Evidence from Insider Trading Around TARP

Ozlem Akin
Nicholas S. Coleman
Christian Fons-Rosen
José-Luis Peydró

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Political Connections and Informed Trading: Evidence from TARP[*]

Ozlem Akin   Nicholas S. Coleman   Christian Fons-Rosen   José-Luis Peydró

Abstract

We study insider trading behavior surrounding the largest bank bailout in history: TARP. In politically-connected banks, insider buying during the pre-TARP period is associated with increases in abnormal returns around bank-specific TARP announcement; for unconnected banks, trading and returns are uncorrelated. Results hold across insiders within the same bank and are stronger for finance-related government connections. Through a FOIA request we obtained the previously undisclosed TARP funds requested; the ratio of received to requested funds correlates both with abnormal returns and insider buying behavior in connected banks.

It is well established that there are strong and powerful linkages between corporations and politicians leading to mutual benefits (Acemoglu, Johnson, Kermani, Kwak, and Mitton, 2016; Blanes i Vidal, Draca, and Fons-Rosen, 2012; Faccio, Masulis, and McConnell, 2006; Fisman, 2001; Johnson and Mitton, 2003; Sapienza, 2004). For example, firms invest large amounts of money in campaign contributions and lobbying in addition to being a natural employer after a political career (Cooper, Gulen, and Ovtchinnikov, 2010; Luechinger and Moser, 2014; Mironov and Zhuravskaya, 2016; Shleifer and Vishny, 1994). However, a crucial, yet unexplored, question in the literature is the role of private information exchanges between government officials and corporate executives before government decisions are publicly announced.

To analyze this question, we focus on banks. In particular, we exploit the connections between financial sector regulators and top bank executives surrounding the Troubled Asset Relief Program (TARP) bailout announcement. The banking sector and its political connections is particularly interesting as, for example, the U.S. financial sector is by far the largest donor to political campaigns, contributing roughly $260 million to politicians in 2006 alone; e.g. this is more than twice that of the health care industry, which ranks a distant second (Johnson and Kwak, 2011). The financial sector also spends large amounts on lobbying, and it benefits from a fast spinning "revolving door" between the Federal government and Wall Street that has attracted substantial media attention.[1]

A recent episode underscored the strong linkages between financial regulators and the top banks: on October 14th, 2008, the United States government announced that the Department of Treasury would invest up to $700 billion in financial institutions through the Capital Purchase Program (CPP). This bank bailout, also known as TARP, became the largest federal investment program in recent U.S. history.[2] Bank bailouts not only generate social outrage by using taxpayers' money to help revitalize financial institutions, but they also potentially create moral hazard as it confirmed the notion that banks were, indeed, too-big-to-fail, too-many-to-fail, or too-important-to-fail. Understanding the political economy of banks is therefore a crucial question for both policy-makers and academics alike.

We use insider trading data, defined as buying and selling shares of one's own bank, to explore whether there is statistical evidence to support the notion that political connections lead to private information flows from regulators to bankers before bank-specific TARP bailout decisions were made public. Our empirical strategy follows the approach employed in the insider trading literature. As we do not have the insiders' private information set, or any variable that is perfectly related to it, we use forward-looking variables. To the extent that insiders' trades are also based on private information about their company that is not known by the market, these trades will have

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[1] Lucca, Seru, and Trebbi (2014) provides striking evidence on a recent increase in worker flows from regulators to the private sector and vice versa. See also, for example, Boesler and Kearns (2015) for media attention.

[2] The main component of TARP, the Capital Purchase Program (CPP), is a preferred stock and equity warrant purchase program led by U.S. Treasury's Office of Financial Stability. We use the name TARP henceforth to refer to CCP.

predictive power of the firm's future performance.[3] For each of our board members, we obtain insider trading data from the Thomson Financial Insider Filings database. We obtained the full list of TARP receiving banks from the U.S. Treasury's TARP Transaction Report, which provides detailed information on each TARP agreement, including the amount received and the date at which the TARP injection was announced. Our sample is composed of 225 publicly listed banks that received TARP bailouts and 1,062 board members of these banks.[4]

The other key variable is political connections. Following Duchin and Sosyura (2012), we measure political connections by the previous employment history of top bank directors and officers obtained from BoardEx, which provides biographical information on board members and senior executives. We define an individual as connected if before joining the bank she worked in a financial regulator, the Treasury, or Congress.[5] A bank is defined as connected if at least one of its board members is connected. Furthermore, we exploit within the same bank variation across connected and unconnected insiders.[6]

In a cross-sectional analysis of banks, we measure banks' stock performance, defined as the buy - and- hold return in the five days following the bank-specific TARP announcement (thereafter, *post-TARP period*).[7] We explore whether a positive abnormal bank return can partly be explained by political connections and insider trading in the *pre-TARP period*, defined as the period between the Lehman failure date (September 15th, 2008) and the bank-specific TARP announcement date. Our detailed data on insider trading and connections allows us to not only analyze banks' behavior, but also to exploit heterogeneous behavior across connected and non-connected individuals within the same bank. Finally, we also shed light on a possible source of exchanged private information.

In our first set of results, we find that connected banks whose insiders bought more shares in the pre-TARP period are more likely to experience positive abnormal returns in the post-TARP period, i.e., in the days following the bank-specific TARP announcement.[8] However, this result does not hold for unconnected banks, as insider trading and returns are uncorrelated. Furthermore, connected banks as a whole do not buy more shares in the pre-TARP period nor do they experience

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[3] The insider trading literature provides evidence on insiders' ability to predict future stock price changes in their own firm's stock (Cohen, Malloy, and Pomorski (2012); Huddart, Ke, Shi (2007); Lakonishok and Lee (2001); Seyhun (1986) and Seyhun (1992b)).

[4] We exclude nine banks that were required to participate in the TARP program initially. These banks include Bank of America, Bank of New York Mellon, Citigroup, Goldman Sachs, JP Morgan, Merrill Lynch, Morgan Stanley, State Street, and Wells Fargo.

[5] Apart from Duchin and Sosyura (2012), other papers that use previous employment history as a proxy for connections include Bertrand, Kramarz, Schoar, and Thesmar (2007), Fan, Wong, and Zhang (2007), Faccio et al. (2006), Blau, Brough, and Thomas (2013), and Goldman, Rocholl, and So (2009).

[6] For another paper that looks at variation in insider trading behavior across individuals within a company, see Adams, Wu, and Zhu (2012).

[7] Following Duchin and Sosyura (2012), we compute the abnormal return on each day by subtracting the market index return from the raw bank return. Results are robust to directly using the raw returns.

[8] Results are robust to controlling for the bank characteristics that the literature on insider trading considers key.

positive abnormal returns relative to unconnected banks. Moreover, when including separate terms for political connections to the arms of the government that deal with either financial sector or non-financial sector issues, we find that the latter are not associated with positive abnormal returns. This suggests that government connections per se do not matter; rather, it is connections related to TARP decision-making that matters.

In our second set of results, we restrict the sample to connected banks and analyze trading data for both connected and unconnected individuals within the same bank. Despite substantially lower variation, including a smaller sample of banks, regressions with bank-fixed effects have enough statistical power to provide further support for our hypothesis. In particular, we find that connected executives buy more shares during the pre-TARP period in the banks that experience positive abnormal returns in the post-TARP period; this result is not present for unconnected individuals. Put another way, our previous results hold when we compare connected and unconnected executives within the same bank. In a series of tests, we show that this result is robust to controlling for the usual trading habits of individuals in previous years. Additionally, we show that connected individuals are not simply better market timers than unconnected individuals in general, they do not experience higher positive abnormal returns than their unconnected colleagues neither in tranquil economic times nor in crisis times other than during the period of bank bailouts; in addition, connected and unconnected insiders are not different in age or board membership experience. Our overall results are consistent with the notion that connections matter.=.

We perform a variety of additional tests to ensure the robustness of our findings. First, one could argue that bank stock returns dropped sharply immediately after the Lehman failure and insiders who bought in that period were just taking advantage of the low prices. For this reason, we consider the initial TARP announcement date (October 14th, 2008) as an alternative starting point instead of the day Lehman failed (September 15th, 2008).[9] Second, results also hold if we just focus on the 30- day insider trading period before the bank-specific TARP announcement date. Third, the literature documents that buy transactions contain more information than sell transactions of insiders so we focus on the value of buy transactions of insiders in our baseline analysis (Lakonishok and Lee, 2001). Nonetheless, we also use the net buy value of transactions, computed as buy minus sell to ensure the robustness of our analysis. Fourth, results are also robust to using a continuous measure of abnormal returns as an alternative stock performance measure. Finally, the severity of the U.S. recession was not uniform across states and politicians might favor some states more than others; for this reason, we account for geographic variation by incorporating state-fixed effects in our regressions.

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[9] On October 14th, 2008, President Bush and Secretary of the Treasury Henry Paulson announced revisions to the TARP program. The Treasury announced their intention to buy senior preferred stock and warrants from the nine largest American banks.

While our results show that connections matter, we have not explored the specific channel through which they matter. The terms of the TARP program were standardized across banks and enabled U.S. Treasury to acquire preferred stock – which pays dividends equal to five percent for the first five years of the program and nine percent beyond five years, as discussed in Annex A of the TARP contracts – and warrants for the common stock.[10] In the end, the CPP invested roughly $205 billion, but an important limitation of the TARP Transaction Report is that the Treasury did not disclose any information on the amount of TARP funds that individual banks had requested.

Thus, the only individuals that, in principle, knew this figure were the financial regulators and the bank insiders (Sorkin, 2009). Therefore, we requested this information through a Freedom of Information Act (FOIA) request as it allowed us to compare the actual TARP funds allocated relative to the initially requested TARP funds by each bank. Indeed, we find that the ratio of received to requested funds is a strong predictor of abnormal positive returns in the post-TARP period. Increases in this ratio are also associated to more buying behavior by insiders in the pre-TARP period, but only for connected banks. Therefore, our results suggest that this information could be the channel through which connections matter. Remarkably, there are no results for ex-ante buying or ex-post returns if we use either the amount of received or the amount of requested funds, but not the ratio.

Overall, results are consistent with politically connected bankers using their connections for their personal gain.[11] In a broader sense, these results are an example of the close connections between key government officials and Wall Street, which may in turn trigger social outrage and moral hazard. Our contributions to the literature are threefold: (1) Using insider trading data together with a large policy shock (TARP bank bailouts), we test whether politically connected bankers benefit from their connections. Insider trading is not simply interesting for documenting whether top bank insiders make money, but following the literature on insider trading, also for proxying the private information that insiders have beforehand, and therefore further documenting the political economy of the financial sector. (2) By exploiting not only cross-sectional variation, but also variation across politically-connected insiders within the same corporation, we obtain a cleaner identification than the previous literature; (3) We use a unique and unexplored dataset via FOIA on the amount of TARP funds the banks requested which allows us to provide suggestive evidence on a specific channel through which political connections may be profitable.

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[10] TARP contracts can be found here: https://www.treasury.gov/initiatives/financial-stability/TARP-Programs/bankinvestment-programs/cap/Pages/contracts.aspx.
[11] In a cross-sectional regression at the bank level and taking the general announcement day of October 3rd as a baseline for all our 225 banks, we find that connected banks had a negative 5-day abnormal return, compared to unconnected banks. This result is consistent with the belief by market participants that the connections will distort TARP money allocation and will not benefit shareholders, but rather only connected individuals. Results are available upon request.

The remainder of the paper is organized as follows. Section 1 reviews related literature. Section 2 describes the data and empirical strategy. Section 3 discusses the results. Finally, in Section 4 we conclude.

1 Related Literature

Economists have long studied the potential for individuals or firms to benefit from political influence or connections (Backman, 2001; Peltzman, 1976; Peltzman, Levine, and Noll, 1989; Stigler, 1971). This paper utilizes a unique dataset surrounding the TARP bailouts to connect insider trading to the existing literature on the value of political connections. In particular, we test for a new channel from government to top corporate executives.

Research has confirmed several positive outcomes following the TARP bailouts. Borrowers from TARP-receiving banks obtained more favorable loan contracts, relative to banks that did not receive TARP funds, following the bailout (Berger and Roman, 2015), and TARP statistically and economically increased job creation and decreased business and personal bankruptcies (Berger, Roman, and Sedunov, 2016). The TARP-receiving banks were able to increase their market share and market power which could exacerbate moral hazard in the banking sector (Berger and Roman (2015), Berger and Roman (2016)), but through increased capital cushions, TARP led to decreases in the systemic risk of banks, especially larger and safer banks located in better local economies Government bailouts could provide benefits to firms with more political influence or knowledge. Previous empirical work has found that political connections are beneficial. There is evidence that firms that contribute to political campaigns outperform firms that do not (Cooper et al., 2010). In particular, firms that provided contributions to officials that eventually won the elections experience higher stock returns than firms that contributed to the losing candidates (Akey, 2015; Claessens, Feijen, and Laeven, 2008). Firms tend to benefit as their connections become more politically powerful, as well (Faccio et al., 2006; Ferguson and Voth, 2008; Goldman et al., 2009). But these connected firms lose value after their political connections erode (Blanes i Vidal et al., 2012; Faccio and Parsley, 2009; Fisman, 2001).

Political benefits accrue through multiple channels. First, connected firms may benefit from preferential access to financing which may provide more or cheaper loans to certain firms, sectors, or regions (Carvalho, 2014; Charumilind, Kali, and Wiwattanakantang, 2006; Khwaja and Mian, 2005; Sapienza, 2004). Second, connected firms get more government contracts which are potentially highly lucrative (Boas, Hidalgo, and Richardson, 2014). And third, political connections can provide support in an economic or financial crisis (Acemoglu et al., 2016; Blau et al., 2013; Faccio et al., 2006; Goldman, Rocholl, and So, 2013; Tahoun, 2014; Tahoun and Van Lent, 2013). Further, political connections are not only important in corrupt countries. The impact of political connections is significant even in Denmark, arguably the world's least corrupt country (Amore and Bennedsen, 2013).

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The empirical literature on insider trading documents that corporate insiders possess valuable information regarding the future price of their own firms' securities. Corporate insiders sell before significant stock-price decreases and buy before significant price increases. The literature examines the information content of insider trading by analyzing insiders' trades before major corporate events such as bankruptcy (Seyhun and Bradley, 1997), earnings announcements (Ke, Huddart, and Petroni, 2003; Piotroski and Roulstone, 2005), merger announcements (Keown and Pinkerton, 1981), seasoned equity offering (Karpoff and Lee, 1991), selloffs (Hirschey and Zaima, 1989), takeovers (Seyhun, 1990), dividend policy (John and Lang, 1991; Ku and Westerfield, 1992), and share repurchases (Lee, Mikkelson, and Partch, 1992). Overall, these studies show that corporate managers possess nonpublic information and are able to exploit their informational advantage by trading with uninformed investors in the market.[12] A more nuanced view is presented in Adams et al. (2012) who find that insider trades are mainly informative in non-financial firms, but not in financial institutions.

Our paper differs from the insider trading literature in that the channel through which political connections matters comes from outside the firm and is only received by a subset of entities and individuals.[13] Our paper moreover focuses on insider trading within banks surrounding a specific event: the U.S. Treasury's TARP bailout program. In a contemporaneous paper, Jagolinzer, Larcker, Ormazabal, and Taylor (2017) use a cross-sectional analysis across banks to examine insider trading around bank bailouts to discuss the informativeness of trades. Apart from using different samples and time periods, at the individual level we find that only connected individuals benefit. Thanks to our FOIA request, we also find that the ratio of received to requested funds is associated to ex-ante insider buying and ex-post returns for connected banks, which suggests that it could be the source of information exchanged.

2 Overview of TARP, Data and Empirical Strategy

This section presents an overview of the background behind TARP. It also discusses the data, sample selection, and empirical strategy used to examine the relationship between banks receiving

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[12] For early studies focusing on insider trading in the U.S. consistently present evidence that insiders earn significant abnormal profits by trading securities of their own firms, see e.g., Lorie and Niederhoffer (1968), Pratt and DeVere (1970), Jaffe (1974b); Jaffe (1974a), Finnerty (1976a), Finnerty (1976b). Later studies also confirm the evidence on insiders' ability to predict future stock price changes in their own firm stock using larger datasets and more developed statistical techniques (see, e.g. Seyhun (1986), Seyhun (1992b), Lakonishok and Lee (2001); Huddart et al. (2007); Cohen et al. (2012)).

[13] Bourveau, Coulomb, and Sangnier (2016) link insider trading to political connections, but their paper is not about information leakages, i.e., it is not about ex ante insider trading and ex post government intervention, which is our main question in this paper. They rather look at ex post trading behavior of insiders connected to President Sarkozy after the French 2007 presidential election. Their results indicate that politically-connected firm directors have a sense of impunity after the elections engaging in fraudulent behavior as they are more likely not to comply with trades legal reporting requirements.

TARP funds, trading by corporate insiders, the political connections of these insiders, and subsequent market performance of these financial institutions.

2.1 Overview of TARP

Except for the largest U.S. banks which were required to take TARP funds, banks were required to submit an application to their federal regulator to obtain TARP funding. The TARP applications, which had to specify the amount of TARP funds they would like to receive, were not made public. The United States Department of Treasury only released the amount of TARP funds that were approved for each bank, omitting the amount that banks requested.

Based on a bank's application and its CAMELS ratings[14] which were assigned by financial regulators, banks were either moved straight to the TARP Investment Committee, which was the body largely responsible for TARP decisions, or required to submit additional supporting information before potentially moving to the Investment Committee. It is therefore conceivable that banks that were given a quicker path to the Investment Committee also had their TARP funds approved faster.

According to the Special Inspector General for TARP's 2009 report, Treasury officials notified the banks when their applications received preliminary approval. Following preliminary approval, banks were required to inform the U.S. Treasury of any changes in its status since the initial application and then the loan moved to closing. Public announcements regarding TARP approvals were made within two business days of closings. We therefore argue that bank insiders had substantial information regarding TARP applications, its application status, and a rough idea of when the final approval would occur throughout the whole process.

2.2 Data and Sample

Data for this paper comes from several sources. We are first interested in banks that received TARP bailout funds.[15] The list of TARP receiver banks and the date at which the TARP injection was announced are contained in the U.S. Treasury's TARP Transaction Report.[16] This report additionally provides the amount of TARP funds that each bank received as well as the outstanding balance that is still owed to the U.S. Treasury. For our work, we use the Transaction Report dated 04/14/2011. An important limitation of these data is that the U.S. Treasury has not disclosed any

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[14] CAMELS ratings for U.S. banks are a score between 1 and 5 for Capital adequacy, Asset quality, Management, Earnings, Liquidity, and Sensitivity to market risks.

[15] As mentioned previously, the nine banks that were required to participate in the TARP program initially were excluded.

[16] http://www.treasury.gov/initiatives/financial-stability/reports/Pages/TARP-Investment-Program-Transaction-Reports.aspx

information on the amount of TARP funds that individual banks had originally requested. Through a Freedom of Information Act (FOIA) request, we obtained this information.

Corporate insider transactions data come from Thomson Financial Insider Filings Database (TFN) which collects all insider trades reported to the SEC.[17] These insider trading records include the transactions of people subject to the disclosure requirements of Section 16(a) of the Securities and Exchange Act of 1934 reported on SEC Forms 3, 4, 5 and 144. We focus on the transactions from Form 4, which an insider fills out when his/her ownership position in the firm changes. The information we observe includes: (1) the name and address of the corporate insider, (2) issuer name of the security, (3) relationship of insider to the issuer (officers, directors or other positions held by insider in the firm), (4) whether it is an acquisition or disposition, (5) the transaction code which describes the nature of the transaction, (6) the transaction date, (7) the transaction amount, and (8) the transaction price. The transactions reported on Form 4 include all transactions that cause a change in ownership position. Among these transactions, we keep only insiders' open market purchases and sales.[18] All other types of transactions, such as grants and awards or exercise of derivatives, are excluded.[19]

Following Lakonishok and Lee (2001), before merging insider transaction data with other databases, we first identify and eliminate non–meaningful records in the insider trading database. We exclude amended records (Amendment Indicator is "A"), filings marked as inaccurate or incomplete by the Thomson database (cleanse code "S" or "A"), small transactions where fewer than 100 shares were traded and also trades for which we do not have the insider's transaction price nor the closing price of the stock.[20] Additionally, filings in which the reported transaction price is not within 20 percent of the closing price in CRSP, and transactions including more than 20 percent of the outstanding shares are excluded to avoid potentially erroneous records. Depending on their positions in the firm, insiders may have different access to firm-specific information (Lin and Howe, 1990; Piotroski and Roulstone, 2005; Ravina and Sapienza, 2010; Seyhun, 1986). The Thomson Financial Insider Filings database provides the role rank (data item is "rolecode") of insiders in their firm. This data item enables us to identify the position of the insider in the bank (i.e. officer, director, chairman of the board, large shareholder, etc.). Based on

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[17] According to Section 16(a) of the Securities and Exchange Act of 1934, corporate insiders (corporate officers, directors and large shareholders [who own more than 10 percent of the firm's stock]) are required to report their trades by the 10th day of the month that follows the trading month. Reporting requirements changed in 2002 as the Sarbanes-Oxley Act requires reporting to the SEC within two business days following the insider's transaction date. See Seyhun (1992a), Bainbridge (2012) and Crimmins (2013) for details on insider trading regulations.

[18] Thomson Financial Insider Filings database provides a data field which gives information on the nature of each transaction. We keep only transactions with codes "S" and "P", which stand for open market sale and purchase, respectively.

[19] Note, however, that the sales of stocks acquired through the exercise of a derivative are counted as an open market sale ("S") and are therefore included in our sample.

[20] Thomson Financial Insider Filings database provides the eight digit CUSIP number as an identifier for each security. We merge the insider trade information of each security on each date with CRSP daily stock file using CUSIP to obtain the closing price of the stock and the number of shares outstanding on each transaction date.

their differential access to private information about firm operations, we classify insiders into two sub-categories: top-five executives and independent directors. [21] [22]

To generate a political-connections measure by bank and by insider, we follow Duchin and Sosyura (2012). We consider a bank to be connected if it employed an executive in 2008-2009 with simultaneous or former work experience at either a banking regulator, the Treasury, or Congress. The current and historic board members of each bank and their employment histories can be found in BoardEx. Our granular BoardEx data allow us to additionally create an individual board member connections measure, which allows us not only to control for any unobservable bank-level variation, but also to compare connected board members with unconnected board members at the same bank.

Lastly, firm-level accounting data is obtained from Compustat; price and shares outstanding data come from CRSP Monthly and Daily Stock Files. Our final sample consists of 225 banks and 1062 board members for which we have consistent data across all of our databases. If a bank received multiple TARP infusions, we focus only on the first disbursement.

2.3 Empirical Strategy

We aim to test the relationship between financial institutions whose insiders bought shares of their own firm prior to the firm-specific TARP announcement and the subsequent stock price movements following the announcement of the TARP bailout funds. We then want to test if these stock price movements differ depending on whether: (1) banks are politically connected; (2) trades were made by an insider that is politically connected.

Our first estimating equation at the cross-sectional bank level is:

$$Return_{d,i} = \beta_0 + \beta_1 Buy_i + \beta_2 Connected_i + \beta_3 Buy_i \times Connected_i + \gamma Controls + \epsilon_i \qquad (1)$$

where subscript i denotes the bank. $Return_{d,i}$ is the stock performance of bank i in the post-TARP period. We measure bank stock performance with a dummy variable taking the value of 1 if that bank experienced a positive stock return after the bank-specific TARP announcement and 0 otherwise. To compute stock return after the announcement, we first compute the daily abnormal

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[21] Top-five executives, which includes the firm's Chairman of the Board, CEO, CFO, COO and President (The corresponding relationship codes in Thomson Financial Insider Filings database are "CB", "CEO", "CFO", "CO", and "P", respectively.) has access to better firm-related information than insiders in the other categories (Beneish and Vargus, 2002; Core, Guay, Richardson, and Verdi, 2006)

[22] Executives may hold more than one title in the bank. Thomson Financial Insider Filings database provides information up to 4 different titles. In our independent director sample, we include only non-employee members of the board of directors. We exclude large shareholders who own more than 10 percent of the firm's stock unless they report any other title (such as director) than being a large shareholder.

return by subtracting CRSP value-weighted index return from the daily stock return; we then compute the buy-and-hold return over a five day event window including the announcement date using these abnormal daily returns.

One of our variables of interest in equation (1) is the insider trading measure. We use the total value of buy transactions in each bank, Buy_i, as our main measure. In each bank, we first take the open market buy transactions for each insider on each day between Lehman failure (September 15th, 2008) and the day of the bank-specific TARP announcement. We then compute the value of each transaction (transaction price $\times$ number of shares purchased) and sum over all transactions scaled by market capitalization of the bank as of September 15th, 2008. We calculate market capitalization as the share price multiplied by the shares outstanding obtained from CRSP:

$$Buy_i = 100 \times \frac{\sum_{k=1}^{n} Buy_{i,k,20080915:T-1}}{MarketCap_{i,20080915}} \tag{2}$$

where subscript i denotes the bank and T denotes the bank-specific TARP announcement date and k denotes insider, and n is the number of insiders per bank. Insider buys are quite small overall; the median bank insider buys a small fraction of the overall company at only 0.002%. We therefore argue that movements in stock prices are not driven by the insider trades themselves.

Lastly, $Connected_i$ is a dummy variable equal to 1 if bank i is politically connected and 0 otherwise. Our main connection of interest is constructed using BoardEx. Following Duchin and Sosyura (2012), a bank is defined as connected if at least one of the insiders has previous or concurrent work experience at a federal bank regulator.[23]

As an alternative specification at the cross-sectional bank level, we also estimate:

$$Return_{d,i} = \beta_0 + \beta_1 Connected_i + \beta_2 Return_{d,i} + \beta_3 Return_{d,i} \times Connected_i + \gamma Controls + \epsilon_i \tag{3}$$

which is similar to equation (1) after having swapped the dependent variable and the key regressor of interest. We introduce this alternative specification as it will be useful to set a parallel to our individual–level estimations described below. We now perform a Poisson regression analysis as the distribution of our dependent variable is highly skewed. Both in equations (1) and (2), our coefficient of interest is β_3 and we expect it to be positive. We include several control variables

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[23] Connected institutions include: Board of Governors of the Federal Reserve System and regional Reserve Banks, Federal Deposit Insurance Corp, Office of the Comptroller of the Currency (OCC), US Department of the Treasury, US Securities and Exchange Commission (SEC), US House of Representatives, and the US Senate.

following both the insider trading literature and recent literature on the TARP bailout program.

In the second part of the paper, we conduct our analysis at the individual level. This will help us to address a number of concerns with cross-sectional regressions at the bank level. For example, it may be that our results suffer from omitted variable bias as connected banks might have different unobservable features compared to unconnected banks. Furthermore, one would like to learn more about the trading behavior of the actual bank executives. To this end, we test whether connected individuals bought more during the pre-TARP announcement period especially when their bank experienced a higher positive abnormal return in the post-TARP period. In this set of results, we restrict our sample to banks in which we have both connected and unconnected insiders. As the return variable is defined at the bank-level, we use buy transactions value for each individual as the dependent variable.

We estimate the following equation at the individual level with bank fixed effects:

$$Buy_{ij} = \beta_0 + \beta_1 Connected_j + \beta_2 Return_i \times Connected_j + BankFE + \epsilon_{ij} \qquad (4)$$

where subscript j denotes an individual and $BankFE$ stands for bank fixed effects. The main variable of interest is the interaction of the connection dummy and bank stock performance. We expect its coefficient (β_2) to be positive. We again perform a Poisson regression analysis as we did in equation (2).

3   Descriptive Statistics and Results

3.1   Descriptive Statistics

A full set of summary statistics are reported in Table 1. All control variables are as of 2008:Q3. Our mean bank loses 2.3% in the five day period after the bank-specific TARP announcement compared to the market average return; the large standard deviation (9.3%) indicates a large variation in stock performance.[24] Out of 225 banks, 109 banks (39%) have a positive abnormal return. Our banks have a mean of $14 billion in assets. The market capitalization of the mean bank is $1.7 billion. The mean book-to-market ratio is 1.1. The buy-and-hold stock return of our sample banks in 12 months preceding Lehman failure (2007 October-2008 September) is -4.6% at the mean (standard deviation of 31.8%).[25]

Table 2 provides information about bank-specific TARP announcement dates for each of our 225 banks. The bulk of announcements were made in late 2008 (58% of cases), though several announcements still took place during the summer of 2009.

Finally, Table 3 documents the split of our 1,062 individuals into different categories. Out of our sample of 1062 individuals, we have 118 CE0s (6 of them connected) and 944 directors (21 of them connected). In our connected banks we find 230 individuals, while in the unconnected ones we rather have 832 individuals.

3.2   Bank-level Results

In Panel A of Table 4 we explore the relationship between insider buying in the pre-TARP period and bank stock return in the post-TARP period (see equation (1)). In columns (1) to (3) the main regressor of interest is a dummy Connected, taking a value of 1 if the bank is connected and 0 otherwise, while the dependent variable is a dummy taking a value of 1 if the bank had a non-negative abnormal return after their bank-specific TARP announcement.

Column (1) is the baseline regression while in columns (2) and (3) we control for returns in the previous period, size and book-to-market ratio that are well-known determinants of stock return. The estimated coefficient of Connected is never statistically significant, implying no differential abnormal return across types of banks.

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[24] Consistent with previous findings, we find that the average return on the bank-specific TARP announcement day is close to zero (Bayazitova and Shivdasani, 2012). Without market–adjustment it is 0.51% and market adjusted return on the announcement day is 0.03% (with standard deviation 8.01).

[25] Table A4 in the Appendix compares the estimated coefficients for bank characteristics between connected and unconnected banks. Throughout all specifications, apart from connected banks having a lower book-to-market value, banks are similar in all other characteristics.

In columns (4) to (8), we add the amount of stock bought in the pre-TARP period by bank insiders and interact it with the political connections dummy defined previously. In the baseline regression (column (4)) we report that the estimated coefficient on the interaction term is positive and statistically significant. For connected firms, a one standard deviation increase in the Buy variable is associated with a 38% higher likelihood of a positive abnormal return after their bank-specific TARP announcement, which is close to three fourths of a standard deviation. For unconnected firms, higher pre-TARP buying behavior is uncorrelated with post-TARP positive abnormal returns. In other words, insiders at connected banks were much more likely to buy stocks if the bank would later experience positive abnormal returns, while the behavior of insiders in unconnected banks is consistent with having no guess about abnormal returns after the bank-specific TARP announcement was made. As the severity of the U.S. recession was not uniform across states, in column (5) we account for geographic variation by incorporating state-fixed effects; results are remarkably stable. Finally, in columns (6) to (8) we incorporate the same control variables as in columns (2) and (3). Interestingly, throughout columns (4) to (8), the magnitude of the estimated coefficient for the interaction term remains very stable, while at the same time we observe notable increases in the R-squared, which is suggestive of our main measure being exogenous to observables and unobservables (Altonji, Elder, and Taber, 2005).[26]

Panel B of Table 4 reports results from our alternative specification presented in equation (2). Similarly to the previous panel, columns (1) to (3) do not include an interaction term and the main variable of interest is the Connected dummy. Insiders at connected banks did not buy shares disproportionately leading up to the TARP bailouts. In columns (4) to (8) we include an interaction term between the political connection dummy and the dummy for abnormal bank-level returns obtained in the post–TARP period. Results can be summarized as follows: only the subset of connected banks experiencing positive abnormal post–TARP returns bought more than a proportional amount of shares beforehand.[27]

3.3   Individual-level Results

Until this point, our analysis has been aggregated to the bank-level, but our rich individual-level dataset on connections and trading behavior enables us to include bank fixed effects, improve the identification and shed light on a potential mechanism. Bank fixed effects allow us to control for time invariant unobserved heterogeneity across banks and rule out alternative explanations. For example, perhaps there was a self-selection by connected insiders to healthy banks based on soft

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[26] Results also hold if we just focus on the 30-day insider trading period before the bank-specific TARP announcement date. Results available upon request.

[27] In the Appendix we provide two robustness checks to our main specification. First, we use the continuous measure of abnormal returns (Table A1) and the results are very similar. For connected firms, a one standard deviation increase in the Buy variable is associated with a 0.065 increase in the Return, which is close to two thirds of a standard deviation. A second potential concern is that we are only picking up insider buying and ignoring insider selling. To address this concern, we use net buy as an alternative insider trading measure and again find that our results hold (Table A2).

information. In this case, our previous results would be unable to determine whether the effect is driven by connected insiders or soft information. By including bank fixed effects, we are able to compare connected individuals with unconnected individuals at the same bank to isolate the effect of the connection.

In particular, for each bank we decompose individuals into two groups based on whether they are politically connected or not. Table 5 again uses the same estimation equation as in Panel B of Table 4, but now the unit of observation is the group of individuals rather than the bank. The dependent variable (Buy) is the value of buy transactions for each of these two groups between Lehman failure date (Sept 15th, 2008) and the bank-specific TARP announcement date (adjusted by market capitalization as of September 2008). Our main regressor of interest is an interaction term between the group level political connection dummy and the bank-level dummy for positive abnormal bank-level returns obtained in the post–TARP period.[28]

Columns (1) and (2) present results for the full sample of banks (with and without control variables) without including bank fixed effects. Columns (3) and (4) redo the estimations after including bank fixed effects, so that the bank-level return cannot be estimated on its own. In all specifications, results suggest that connected individuals bought more shares in the pre-TARP period if the post-TARP abnormal bank-level return would in turn be positive; importantly, this result is not however found for unconnected individuals.[29]

In Table 6 we build on the previous table by incorporating an additional time period before the Lehman collapse. The goal is to account for the buying behavior of individuals both in tranquil times (January 2004 until Lehman failure date) and also in crisis times (January 2007 until Lehman failure date) in order to understand whether the differentiated buying behavior of connected individuals is a general phenomenon that happens in any time period or rather something unique that only happened around the TARP period. While we keep the same dependent variable as in Table 5, now our regressor of interest is a triple interaction that should help us to answer the following question: do politically connected individuals always obtain positive abnormal returns when they buy more ex-ante, or is this only seen in the period during the TARP bailouts? All four columns include bank fixed effects; while the first two columns provide estimates when including a pre-period during tranquil times, the last two columns rather include a pre-period during crisis times. Columns (1) and (3) show that connected individuals overall did not buy more stocks in the post-Lehman time period compared to how much they bought both in tranquil or crisis times pre-

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[28] Whether a bank is connected or not is purely based on employment histories found in BoardEx. On those regressions we had a sample of 225 banks, where 33 of them were connected. In the individual-level regressions we observe a reduction in the sample size to a total of 128 banks, where 26 of them are connected. The reason is that we need to do a match of individual names between BoardEx and the insider trading data. Since we do not match all individuals, the sample changes slightly.

[29] Estimated coefficients are unaltered if we only focus on independent directors or if we combine Top 5 and independent directors together in the same group. Results are available upon request.

Lehman. Interestingly, columns (2) and (4) show that triple interaction is statistically significant; the relative increase in buying activity by connected individuals in the post-Lehman period only arises if the bank will experience positive abnormal returns after the TARP announcement has been public; consistent with previous results, no such difference arises for unconnected individuals. Overall, these results strengthen the claim that differences in ability or unobservables are not driving our main claim in this paper.[30]

3.4 Alternative Hypothesis: Individual-level Ability and Other Unobservables

Up to now we have shown that our main finding is robust to the inclusion of bank fixed effects in tables that use individual-level information and that the trading behavior of connected individuals is specific to the period around TARP. Nonetheless, the goal of this subsection is to reinforce the claim that results are not driven by any individual-level unobservable measure like, for example, ability.

Table 7 compares the mean value of a set of control variables across individuals. It uses data for our previous 1062 individuals and reports that connected and unconnected individuals have no statistically significant difference in neither of the following variables: age, gender, current and total number of boards of directors on which they are or have been present.

Finally, in Table 8, we investigate the differences in insider trading profitability at the individual level in different time periods before the Lehman failure. The goal is to understand whether connected individuals systematically obtain higher returns from investment (perhaps due to unobservables that are correlated with being politically connected) or not. We follow Inci, Narayanan, and Seyhun (2016) by using a calendar–time approach to form two portfolios: one for connected and another one for unconnected individuals. The connected portfolio on any date consists of all stocks purchased by connected executives during the 50 trading days ending on that date.[31] The portfolio return on date t is:

$$\frac{1}{n_t} \sum_{i=1}^{n_t} R_{it} \tag{5}$$

where $R_{i,t}$ is the gross date t return on purchase i, and n_t is the number of purchases in the portfolio (corresponding to n_t insider purchase events) in the previous 50 trading days. This portfolio is

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[30] Our results are not driven by the average stockholder replicating the investment strategy of insiders, information that is available 2 days after each insider's trade. If market participants following this strategy were large enough, we would be observing stock price changes closely linked in time to the days in which insiders trade. This process is orthogonal to finding abnormal returns precisely after the bank-specific TARP announcement.

[31] During this interval, if more than one connected executive purchased a stock, or if the same executive purchased a stock multiple times, then that stock appears multiple times in the portfolio.

updated on a daily basis by deleting stocks purchased more than 50 days earlier. This calculation yields a time series of daily returns for the connected portfolio. The daily returns for the unconnected portfolio are computed similarly.

Abnormal returns are calculated as the intercept from Capital Asset Pricing model (CAPM) in the following time-series regression for each portfolio j:

$$R_{jt} - R_{ft} = a_j + \beta_j(R_{mt} - R_{ft}) + \epsilon_t \qquad (6)$$

where R_{jt} is the daily return on the calendar-time portfolio, R_{mt} is the return on a value-weighted market index, R_{ft} is the daily return on a three-month Treasury bill.

Columns (1) to (6) report results for normal times defined as January 2004 to June 2007. The coefficient a_j in column (1) shows that the difference in mean daily returns is close to zero (0.001), a result consistent with connected individuals not having better portfolio returns on a systematic basis. Column (2) present results if we use Fama and French (1993) three-factor model and column (3) present results using Carhart (1997) four-factor model.

In order to check our results' sensitivity to the interval we used, we perform a similar analysis with an alternative interval. Columns (4) to (6) replicate the analysis by replacing 50 days with 90 days. Columns (7) to (12) replicate the analysis for the crisis period before TARP, defined as from January 2007 to August 2008. Overall, the results in this table suggest that connected and unconnected individuals experience similar returns in both normal times and crisis times.

3.5   Mechanism

As previously discussed, we propose a possible piece of information responsible for the differential trading behavior of connected individuals and banks: the (log of the) ratio of the actual TARP amount a bank received divided by the amount requested. A FOIA request made it possible to construct this ratio, which is a strong predictor of post-TARP positive abnormal returns (Table 9): in a cross-sectional regression of banks, we find that higher values of this ratio strongly and positively correlate with bank performance after bank-specific TARP information was made public. This result holds after including a set of state-level fixed effects in column (2). Results are similar in columns (3) to (4) where we replicate the analysis using a continuous variable for positive abnormal stock returns instead of the dummy variable. If the ratio increases by one standard deviation (i.e. 22%), then the expected abnormal return will increase by 0.65%, which is

close to one standard deviation. Interestingly, there are no results if we use either the amount of received or the amount of requested funds, but not the ratio.[32]

Once we have established the explanatory power of the ratio in predicting abnormal returns, Table 10 reports how this ratio is correlated with the buying behavior of banks. This table resembles Panel B of Table 4, where the dependent variable was the buying behavior at the cross section of banks, but now the bank-level (log of the) ratio variable is used as the regressor of interest instead of the post- TARP bank-level abnormal return. Column (1) reports a positive coefficient for the interaction term between the bank-level connection measure and the (log of the) ratio of received to requested amount: only among connected banks do we observe a strong positive association between a bank receiving a larger fraction of requested funds and its bank executives buying more stock beforehand. This result is robust to including state fixed effects (column (2)) and our usual set of bank-level controls (column (3)).[33]

Up until now, we have been claiming that banks with political connections defined as in Duchin and Sosyura (2012) are in the best place to obtain private information beforehand about key TARP announcements. This definition of political connection puts a lot of weight on connections to the financial branch of government, which is where we expect the effect to take place. But what happens when we additionally include a term comprising connections to the non-financial branches of government? Do we observe that financial connections are more useful than non-financial connections to benefit from insider trading? In Table 11, we rerun Table 10 after also adding a variable measuring each bank's non-financial government connections.[34] While our coefficient of interest related to financial connections is still positive and statistically significant with a similar magnitude as in the previous table, the new terms on non-financial connections are neither economically nor statistically significant.

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[32] See Table A3 in Appendix for regressions using only the amount of received funds. Results for requested funds are not reported to avoid cluttering.

[33] Results that only use either the requested or the received funds are not statistically significant and non reported for avoid cluttering.

[34] These connections include any previous U.S. government employment except the ones already included in Duchin and Sosyura (2012) For example, Institute of Nuclear Power Operations, US Supreme Court, National Aeronautics and Space Administration or the National Institutes of Health.

4 Conclusion

Strong and powerful linkages between corporations and politicians often lead to mutual benefits (Acemoglu et al., 2016; Bertrand et al., 2007; Faccio et al., 2006; Fisman, 2001; Johnson and Kwak, 2011; Sapienza, 2004). In particular, the fast spinning 'revolving door' between governments and the financial sector together with the financial sectors' large lobbying expenditures have attracted substantial media attention since the global financial crisis. In this paper, we test whether there is statistical evidence to suggest that the insider trading behavior of politically-connected banks (and politically-connected insiders at these banks) is consistent with their having private information in the times surrounding the U.S. governments' TARP announcement. We find that insiders in politically-connected banks did not buy more shares than unconnected banks in the lead up to the TARP bailout announcement; rather politically-connected banks where insiders bought shares prior to the TARP announcement experienced abnormal stock returns following the announcement. Further, we find that this result holds not just for connected banks, but also for connected individuals at these banks. These results are robust to a variety of additional tests including alternative date windows, alternative measures of insider trading, and alternative classifications of abnormal returns. Additionally, a placebo test of whether connections to the arms of the government that do not deal with financial sector issues is negative, implying that being connected specifically to financial regulatory agencies is the useful feature. We utilize a unique dataset of the amount of funds that each bank requested in its TARP application obtained via a FOIA request. Among connected banks, there is a strong correlation between receiving a higher share of the requested TARP funds and insider buying, but this result does not hold among unconnected banks. Lastly, we do not find that connected banks and insiders outperform unconnected banks in non-TARP periods. In a broader sense, these results highlight the political economy of the financial sector, in particular, related to the biggest bailout in history.

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Table 1
Summary Statistics

	Obs.	Minimum	Maximum	Mean	Standard Deviation
Return	225	-0.297	0.218	-0.023	0.093
$Return_d$	225	0.000	1.000	0.465	0.500
Connected	225	0.000	1.000	0.147	0.355
Connected $_{nonfin}$	225	0.000	1.000	0.551	0.498
Buy	225	0.000	2.152	0.073	0.229
Net Buy	225	-4.549	2.099	0.014	0.434
Received/Requested	211	0.145	3.595	0.995	0.216
Total assets	225	0.222	311.485	13.540	38.974
Market Capitalization	225	0.007	63.173	1.675	6.089
Book-to-market	225	0.112	4.655	1.131	0.641
Past year return	225	-0.757	0.717	-0.046	0.318

This table presents summary statistics for the sample of 225 banks. $Return_d$ is a dummy variable that takes value of 1 if Return is positive. Return, is the buy--and--hold return over 5--day event window including the announcement day using abnormal daily returns. Daily abnormal return is computed as daily return -- daily CRSP value--weighted index return. *Connected* is a dummy variable that takes value of 1 if the bank is connected. We define bank as connected if any of the insiders previously worked in a government position as defined by Duchin and Sosyura (2012). *Connected$_{nonfin}$* is a dummy variable that takes value of 1 if the bank is connected to any non--financial committee. *Buy* is the total value of insiders' buy transactions between Lehman failure date (Sept 15th, 2008) and bank--specific TARP announcement date (as a percentage of market capitalization as of September 2008). *Net Buy* is computed by subtracting insiders' total sell transactions from their total buy transactions between Lehman failure date (Sept 15th, 2008) and bank--specific TARP announcement date (as a percentage of market capitalization as of September 2008). *Received/Requested* is the ratio of the amount of TARP funds that bank received to the amount of TARP funds that bank had originally requested. *Total assets* is the book value of assets (in billions of dollars). *Market capitalization* is defined as price times shares outstanding (in billions of dollars). *Book--to--market* is the ratio of equity book value to market capitalization. All accounting variables are computed as of 2008Q3. *Past year return* is the buy--and--hold return from October 2007 to September 2008.

Table 2
Bank-specific TARP announcement dates

Disbursement Date	Frequency	Percent	Cumulative
November 2008	40	17.78	17.78
December 2008	90	40	57.78
January 2009	60	26.67	84.45
February 2009	16	7.11	91.56
March 2009	6	2.67	94.23
April 2009	2	0.89	95.12
May 2009	4	1.78	96.9
June 2009	4	1.78	98.68
July 2009	1	0.44	99.12
September 2009	1	0.44	99.56
October 2009	1	0.44	100
Total	225	100	

This table presents the month of the TARP announcement for each of our 225 banks in the sample.

Table 3
Connectedness of Individuals and Position Title

Position	Unconnected (192 Banks)	Connected (33 Banks)	Total
CEO - connected		6	6
Director - connected		21	21
CEO – unconnected	92	20	112
Director – unconnected	740	183	923
Total	832	230	1062

This table shows the distribution of the individuals in our sample across two dimensions. First, whether they work as CEO or independent directors at the bank. Second, whether they are politically connected based on the definition of Duchin and Sosyura (2012) or not.

TABLE 4
Bank Return in the post-TARP period, Ex-ante Insider Trading and Political Connections

Panel A

Dependent variable: Return_d	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Connected×Buy				1.683***	1.343***	1.255***	1.257***	1.285***	1.158**
				(0.345)	(0.472)	(0.441)	(0.448)	(0.465)	(0.509)
Connected	0.044	0.126	0.127	-0.048	-0.048	0.001	0.024	0.026	0.015
	(0.096)	(0.091)	(0.092)	(0.114)	(0.147)	(0.139)	(0.140)	(0.139)	(0.148)
Buy				0.111	0.108	0.048	0.033	0.038	0.050
				(0.118)	(0.162)	(0.146)	(0.141)	(0.139)	(0.133)
Size		-0.059***	-0.058***			-0.061***	-0.058**	-0.058**	-0.054
		(0.018)	(0.018)			(0.022)	(0.024)	(0.025)	(0.033)
Book-to-market		0.081	0.104				0.060	0.110	0.121
		(0.068)	(0.077)				(0.090)	(0.090)	(0.090)
Past year return			0.066					0.141	0.163
			(0.096)					(0.113)	(0.121)
Observations	225	225	225	225	225	225	225	225	225
R-squared	0.001	0.048	0.049	0.031	0.184	0.209	0.213	0.217	0.237
State FE	NO	NO	NO	NO	YES	YES	YES	YES	YES
Year-Month FE	NO	NO	NO	NO	NO	NO	NO	NO	YES

This table shows results from cross-sectional bank--level regressions. *Return_d* is a dummy variable taking value of 1 if buy-and-hold return over a 5--day period after the bank specific TARP announcement is positive. In columns 1 to 3 the main variable of interest is the dummy Connected that takes value 1 if the bank is connected. We define bank as connected if any of the insiders previously worked in a government position as defined by Duchin and Sosyura (2012). In columns 4 to 9 the main variable of interest is *Connected × Buy*. Buy is the total value of insiders' buy transactions between Lehman failure date (Sept 15th, 2008) and bank-specific TARP announcement date (adjusted by market capitalization as of September 2008). Bank size is measured as natural log of total assets. All remaining variables are defined as in Table 1. The OLS estimator is used. Columns 5 - 9 include state fixed effects and column 9 additionally includes fixed effects for each different year-month in which banks received TARP. The constant term is included but not reported to avoid cluttering. Standard errors are in parentheses and clustered at the state level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Panel B

Dependent variable: Buy	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Connected×Return$_d$				1.790***	2.883***	2.407***	2.262***	2.259***	2.664***
				(0.588)	(0.677)	(0.798)	(0.785)	(0.792)	(0.675)
Connected	-0.312	0.142	0.171	-1.595***	-2.077***	-1.539***	-1.216**	-1.211**	-1.401**
	(0.435)	(0.412)	(0.442)	(0.477)	(0.569)	(0.575)	(0.603)	(0.615)	(0.546)
Return$_d$				0.351	0.209	0.218	0.191	0.224	0.356
				(0.318)	(0.404)	(0.487)	(0.475)	(0.481)	(0.333)
Size		-0.597***	-0.581***			-0.511***	-0.449***	-0.440***	-0.273**
		(0.088)	(0.089)			(0.044)	(0.067)	(0.072)	(0.114)
Book-to-market		0.296*	0.088				0.427	0.270	0.178
		(0.178)	(0.243)				(0.376)	(0.483)	(0.319)
Past Year Return			-1.064					-0.618	-0.210
			(0.671)					(0.797)	(0.400)
Observations	225	225	225	225	225	225	225	225	205
State FE	NO	NO	NO	NO	YES	YES	YES	YES	YES
Year-Month FE	NO	NO	NO	NO	NO	NO	NO	NO	YES

In this table, the dependent variable is *Buy*, defined in Panel A. Poisson estimator is used. For any further information, see Panel A and Section 2.

Table 5

Variation across Individuals within the Same Bank (Cross-section and Bank Fixed Effects)

Dependent variable: Buy	(1)	(2)	(3)	(4)
Connected×Return$_d$	5.017***	4.782***	3.675**	2.171**
	(1.329)	(1.498)	(1.556)	(1.027)
Connected	-4.332***	-4.398***	-3.236***	-1.680
	(1.028)	(1.078)	(1.185)	(1.082)
Return$_d$	0.029	0.046		
	(0.439)	(0.444)		
Observations	154	154	154	154
Bank FE	NO	NO	YES	YES
Controls	NO	YES	NO	YES

This table shows results from cross-sectional regressions using insider-level information. The dependent variable *Buy* is the value of buy transactions between Lehman failure date (Sept 15th, 2008) and bank-specific TARP announcement date (adjusted by market capitalization as of September 2008) decomposed into connected and unconnected individuals for each bank. The main variable of interest is *Connected* × *Return$_d$*. *Return$_d$* is a dummy variable that takes value 1 if the buy-and-hold bank-level return over a 5-day period after the bank-specific TARP announcement is positive. The dummy *Connected* takes value of 1 for the connected group of individuals. Columns 1-2 present results without bank fixed effects (with and without control variables) and with the full set of banks. We have 154 observations decomposed in the following way: we have 102 unconnected banks only having a group of unconnected individuals (102 obs) and 26 connected banks having both a group of connected and a group of unconnected individuals (52 obs). Columns 3-4 rerun the same estimations with bank fixed effects, thereby only focusing on the subset of 26 connected banks. The control variables used in evenly numbered columns are: age, gender, number of boards to date quoted, and current boards quoted. The Poisson estimator is used. The constant term is included but not reported to avoid cluttering. Robust standard errors are in parentheses. ***, ** and * indicate statistical significance at the 1, 5 and 10 percent level, respectively.

Table 6
Table 6
Variation across individuals within the same bank (2 time periods and bank fixed effects)

Dependent variable: Buy	Including normal times		Including crisis pre-Lehman	
	(1)	(2)	(3)	(4)
Connected	-0.109	-0.886	-0.140	-1.680**
	(0.395)	(0.772)	(0.408)	(0.796)
PostLehman	-1.103***	-1.098***	-0.837***	-0.769**
	(0.213)	(0.289)	(0.252)	(0.350)
Connected $\times$ PostLehman	0.532	-2.481**	0.503	-2.149**
	(0.437)	(1.148)	(0.391)	(1.038)
Connected $\times$ Return$_d$		0.868		1.725
		(0.963)		(1.055)
Return$_d$ $\times$ PostLehman		-0.012		-0.177
		(0.411)		(0.477)
Connected $\times$ Return$_d$ $\times$ PostLehman		3.206***		2.876***
		(1.219)		(1.116)
Observations	308	308	308	308
Bank FE	YES	YES	YES	YES
Controls	NO	YES	NO	YES

This table shows results from the same groups of individuals as in Table 5, but now with two time periods. Columns 1 and 2 go from January 2004 to the bank-specific TARP announcement date and columns 3 and 4 go from January 2007 to the bank-specific TARP announcement date. *PostLehman* takes value of 1 for the period between Lehman failure date (Sept 15th, 2008) and bank-specific TARP announcement date; it takes value 0 before Lehman failure. The main variable of interest is *Connected $\times$ Return$_d$ $\times$ PostLehman.* All remaining variables are defined as in Table 1. The control variables used are: *age, gender*, *number of boards to date quoted*, and *current boards quoted*. The Poisson estimator is used. The constant term is included but not reported to avoid cluttering. Robust standard errors are in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 7
Mean Comparison Test Between Connected and Unconnected Individuals

Variable	Connected Indivs. Mean	Unconnected Indivs. Mean	t-stat	Obs.
Age	63.18	60.82	1.25	1047
Male	0.95	0.89	1.71	1062
Boards to date quoted	1.81	1.72	0.34	1049
Current boards quoted	1.44	1.27	0.89	1049

This table compares a set of control variables decomposed into connected and unconnected individuals. We take all individuals working in our full sample of banks and compare them across four control variables used in the regressions: *age*, *gender*, *number of boards to date quoted*, and *current boards quoted*.

Table 8
Differences in Insider Trading Profitability

VARIABLES	Normal times						Crisis Pre-Lehman					
	(1) Return 50-day	(2) Return 50-day	(3) Return 50-day	(4) Return 90-day	(5) Return 90-day	(6) Return 90-day	(7) Return 50-day	(8) Return 50-day	(9) Return 50-day	(10) Return 90-day	(11) Return 90-day	(12) Return 90-day
Constant	0.000	0.001	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
mktrf	0.514***	0.337***	0.376***	0.556***	0.364***	0.433***	0.253**	0.214**	0.159	0.301***	0.259***	0.241***
	(0.083)	(0.087)	(0.098)	(0.093)	(0.102)	(0.109)	(0.103)	(0.101)	(0.098)	(0.063)	(0.062)	(0.063)
smb		0.471***	0.514***		0.528***	0.603***		0.713***	0.617**		0.459**	0.429**
		(0.162)	(0.161)		(0.171)	(0.174)		(0.245)	(0.264)		(0.187)	(0.200)
hml		-0.019	0.089		0.049	0.239		-0.148	-0.386		0.094	0.019
		(0.251)	(0.281)		(0.224)	(0.260)		(0.287)	(0.339)		(0.189)	(0.237)
umd			-0.143			-0.252*			-0.189			-0.060
			(0.162)			(0.153)			(0.133)			(0.097)
Observations	502	502	502	502	502	502	295	295	295	295	295	295
R-squared	0.075	0.096	0.097	0.094	0.120	0.126	0.029	0.068	0.076	0.076	0.108	0.110

This table reports the regression results of Capital Asset Pricing Model (CAPM), Fama and French (1993) three-factor model and Carhart (1997) four-factor model using daily calendar time returns of connected-unconnected insider trading portfolios. MKT is the return on a value-weighted market index, RF is the daily return on a three-month Treasury bill, SMB is the difference in returns of value-weighted portfolio of small stock and big stocks and HML is the difference in returns of value-weighted portfolio of high and low book-to-market stocks. The portfolios are constructed by allocating insider trades into either connected portfolio or not connected portfolio. Columns (1) to (6) report results for normal times defined as January 2004 to June 2007. Columns (1) to (3) focuses on returns in 50-day period. The trades stay in their respective portfolio for fifty trading days after the trading date of the insider. In the event of no trading by an insider over the preceding fifty trading days, it is invested in the stock market earning the daily market return. If more than one insider is trading a particular stock on a given date, then that stock will appear multiple times in the portfolio on that date, once for each insider purchase. Columns (4) to (6) replicate the analysis in columns (1) to (3) by replacing 50 days with 90 days. Columns (7) to (12) replicate the analysis for the crisis period but before TARP defined as from January 2007 to August 2008 (during this period real estate prices and bank stock prices were declining). The OLS estimator is used. Robust standard errors are in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 9
Explaining the post-TARP return based on bank-level characteristics

VARIABLES	(1) Return$_d$	(2) Return$_d$	(3) Return	(4) Return
Ln(Received/Requested)	0.405***	0.437***	0.042**	0.037**
	(0.051)	(0.053)	(0.019)	(0.015)
Size	-0.038	-0.031	-0.003	-0.001
	(0.027)	(0.029)	(0.005)	(0.006)
Book-to-market	0.072	0.091	0.007	0.015
	(0.077)	(0.094)	(0.014)	(0.016)
Past Year Return	-0.019	0.041	-0.002	0.013
	(0.104)	(0.128)	(0.019)	(0.022)
Observations	211	211	211	211
R-squared	0.090	0.268	0.066	0.282
State FE	NO	YES	NO	YES
Month FE	YES	YES	YES	YES

This table shows results from cross-sectional bank-level regressions. The main variable of interest is *Received/Requested* that is the ratio of the amount of TARP funds that bank received to the amount of TARP funds that bank had originally requested. Bank size is measured as natural log of total assets. All remaining variables are defined as in Table 1. In columns 3 to 4, the dependent variable is the continuous measure of our bank-level abnormal returns. The OLS estimator is used. The constant term is included but not reported to avoid cluttering. Standard errors are in parentheses and clustered at the state level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 10

Effect of Received over Requested Ratio on Buying Behavior: Standard Bank-level Connections Measure

Dependent variable: Buy	(1)	(2)	(3)
Connected × ln(Received/Requested)	4.327**	7.785***	6.986**
	(2.001)	(2.958)	(3.012)
Connected	-0.101	-0.069	0.376
	(0.390)	(0.397)	(0.462)
ln(Received/Requested)	0.890***	0.269	0.107
	(0.181)	(0.251)	(0.316)
Size			-0.448***
			(0.086)
Book-to-market			0.312
			(0.470)
Past year return			-0.134
			(1.026)
Observations	211	211	211
State FE	NO	YES	YES

This table shows results from cross-sectional bank-level regressions. The dependent variable Buy is the value of buy transactions between Lehman failure date (Sept 15th, 2008) and bank-specific TARP announcement date (adjusted by market capitalization as of September 2008)). The main variable of interest is Connected × ln(Received/Requested). The dummy Connected takes value of 1 if the bank is connected based on the definition by Duchin and Sosyura (2012). ln(Received/Requested) is the ratio of the amount of TARP funds that bank received to the amount of TARP funds that bank had originally requested in logs. Bank size is measured as natural log of total assets. All remaining variables are defined as in Table 1. The Poisson estimator is used. The constant term is included but not reported to avoid cluttering. Standard errors are in parentheses and clustered at the state level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 11

Effect of Received over Requested Ratio on Buying Behavior: Adding Non-Financial Bank-level Connections Measure

Dependent variable: Buy	(1)	(2)	(3)
Connected × ln(Received/Requested)	4.165*	7.837***	7.127**
	(2.357)	(2.950)	(3.006)
Connected$_{NonFin}$ × ln(Received/Requested)	0.988	-0.650	-0.843
	(0.855)	(1.555)	(1.472)
Connected	-0.088	-0.073	0.365
	(0.380)	(0.396)	(0.460)
Connected$_{NonFin}$	-0.021		
	(0.463)		
ln(Received/Requested)	0.074	0.838	0.824
	(0.795)	(1.554)	(1.391)
Size			-0.452***
			(0.088)
Book-to-market			0.310
			(0.468)
Past year return			-0.109
			(1.031)
Observations	211	211	211
State FE	NO	YES	YES

This table runs similar estimations to the ones in Table 10, but additionally includes an interaction term Connected$_{NonFin}$× ln(Received/Requested). ln(Received/Requested) is the ratio of the amount of TARP funds that bank received to the amount of TARP funds that bank had originally requested in logs. All remaining variables are defined as in Table 1. The Poisson estimator is used. The constant term is included but not reported to avoid cluttering. Standard errors are in parentheses and clustered at the state level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

APPENDIX

Table A1

Alternative Measure of Stock Performance

Panel A

Dependent variable: Return	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Connected × Buy				0.299***	0.250***	0.236***	0.236**	0.240***
				(0.065)	(0.093)	(0.090)	(0.091)	(0.092)
Connected	-0.001	0.009	0.009	-0.018	-0.018	-0.010	-0.008	-0.008
	(0.016)	(0.015)	(0.015)	(0.017)	(0.018)	(0.017)	(0.017)	(0.017)
Buy				-0.014	-0.006	-0.016	-0.017	-0.016
				(0.028)	(0.040)	(0.039)	(0.039)	(0.039)
Size		-0.008**	-0.008**			-0.010**	-0.009**	-0.009**
		(0.003)	(0.003)			(0.004)	(0.004)	(0.004)
Book-to-market		0.008	0.011				0.005	0.011
		(0.009)	(0.011)				(0.010)	(0.012)
Past year return			0.009					0.017
			(0.022)					(0.025)
Observations	225	225	225	225	225	225	225	225
R-squared	0.000	0.027	0.027	0.025	0.204	0.225	0.226	0.228
State FE	NO	NO	NO	NO	YES	YES	YES	YES

This table replicates Table 4 Panel A by replacing stock performance measure with Return. The dependent variable Return is the buy--and--hold return over a 5--day period after the bank specific TARP announcement. All remaining variables are defined as in Table 1. The OLS estimator is used. The constant term is included but not reported to avoid cluttering. Robust standard errors are in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Panel B

Dependent variable: Buy	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Connected × Return				12.791***	23.771***	21.689**	22.401**	22.188**
				(4.661)	(6.627)	(8.753)	(8.920)	(9.203)
Connected	-0.312	0.142	0.171	-0.412	-0.210	-0.136	0.067	0.052
	(0.431)	(0.401)	(0.412)	(0.381)	(0.328)	(0.425)	(0.465)	(0.481)
Return				-1.552	-1.336	-0.525	-0.758	-0.617
				(3.217)	(3.708)	(4.141)	(4.064)	(4.029)
Size		-0.597***	-0.581***			-0.485***	-0.423***	-0.418***
		(0.114)	(0.107)			(0.149)	(0.143)	(0.143)
Book-to-market		0.296*	0.088				0.480**	0.389
		(0.172)	(0.259)				(0.237)	(0.355)
Past year return			-1.064					-0.343
			(0.913)					(0.875)
Observations	225	225	225	225	225	225	225	225
State FE	NO	NO	NO	NO	YES	YES	YES	YES

This table replicates Table 4 Panel B by replacing stock performance measure with Return. In this table, the dependent variable is Buy, defined as in Panel A. The Poisson estimator is used. For any further information, see Panel A and Section 2.

Table A2
Alternative Measure of Insider Trading

Panel A

Dependent variable: Return	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Connected × Net Buy				0.266***	0.229***	0.220***	0.222***	0.226***
				(0.076)	(0.078)	(0.077)	(0.077)	(0.078)
Connected	-0.001	0.009	0.009	-0.010	-0.012	-0.004	-0.002	-0.001
	(0.016)	(0.015)	(0.015)	(0.016)	(0.017)	(0.016)	(0.016)	(0.016)
Net Buy				-0.010	-0.020	-0.026	-0.028	-0.028
				(0.008)	(0.018)	(0.018)	(0.018)	(0.018)
Size		-0.008**	-0.008**			-0.010**	-0.010**	-0.010**
		(0.003)	(0.003)			(0.004)	(0.004)	(0.004)
Book-to-market		0.008	0.011				0.007	0.013
		(0.009)	(0.011)				(0.010)	(0.012)
Past year return			0.009					0.016
			(0.022)					(0.025)
Observations	225	225	225	225	225	225	225	225
R-squared	0.000	0.027	0.027	0.026	0.208	0.233	0.235	0.237
State FE	NO	NO	NO	NO	YES	YES	YES	YES

This table replicates Table 4 Panel A by replacing insider trading measure with Net Buy. In columns 4 to 8 the main variable of interest is Connected × Net Buy. Net Buy is the total net value of insiders' buy transactions between Lehman failure date (Sept 15th, 2008) and the bank-specific TARP announcement date (adjusted by market capitalization as of September 2008). All remaining variables are defined as in Table 1. The OLS estimator is used. The constant term is included but not reported to avoid cluttering. Robust standard errors are in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Panel B

Dependent variable: Net Buy	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Connected × Return				0.953**	1.597***	1.209**	1.137**	1.111**
				(0.451)	(0.598)	(0.584)	(0.568)	(0.557)
Connected	0.026	0.087*	0.087*	0.048	0.023	0.040	0.075	0.072
	(0.041)	(0.051)	(0.051)	(0.046)	(0.037)	(0.040)	(0.046)	(0.045)
Return				-0.306	-0.499	-0.539	-0.554	-0.540
				(0.328)	(0.443)	(0.446)	(0.444)	(0.440)
Size		-0.029***	-0.030***			-0.033**	-0.028**	-0.028**
		(0.007)	(0.007)			(0.013)	(0.012)	(0.012)
Book-to-market		0.108**	0.050				0.098**	0.070
		(0.048)	(0.054)				(0.041)	(0.051)
Past year return			-0.171					-0.081
			(0.119)					(0.099)
Observations	225	225	225	225	225	225	225	225
R-squared	0.000	0.038	0.047	0.006	0.479	0.488	0.503	0.504
State FE	NO	NO	NO	NO	YES	YES	YES	YES

This table replicates Table 4 Panel B by replacing insider trading measure with Net Buy. In this table, the dependent variable is NetBuy, defined as in Panel A. The OLS estimator is used. For any further information, see Panel A and Section 2.

Table A3
Effect of received TARP funds on bank-level return

VARIABLES	(1) Return$_d$	(2) Return$_d$	(3) Return	(4) Return
ln(Received)	0.007	0.030	0.000	0.006
	(0.049)	(0.054)	(0.009)	(0.010)
Size	-0.055	-0.083	-0.006	-0.012
	(0.045)	(0.049)	(0.010)	(0.011)
Book-to-market	0.096	0.105	0.009	0.011
	(0.077)	(0.091)	(0.014)	(0.016)
Past year return	0.083	0.145	0.009	0.019
	(0.098)	(0.122)	(0.020)	(0.025)
Observations	225	225	225	225
R-squared	0.066	0.225	0.053	0.236
State FE	NO	YES	NO	YES
Month FE	YES	YES	YES	YES

This table shows results from cross-sectional bank-level regressions. The main variable of interest is Received that is the amount of TARP funds that bank received. All remaining variables are defined as in Table 1. In columns 3 to 4, the dependent variable is the continuous measure of our bank-level abnormal returns. The OLS estimator is used. The constant term is included but not reported to avoid cluttering. Standard errors are in parentheses and clustered at the state level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table A4
Differences in variables across connected and unconnected banks

Dependent variable: Connected	(1)	(2)	(3)
Size	0.035	0.037	0.034
	(0.021)	(0.023)	(0.026)
Past year return	-0.082	-0.072	-0.058
	(0.125)	(0.127)	(0.135)
Book-to-market	-0.156**	-0.160**	-0.145**
	(0.062)	(0.065)	(0.068)
Return on Equity	0.019	0.021	0.016
	(0.019)	(0.019)	(0.023)
Short-term debt		-0.057	-0.194
		(0.487)	(0.594)
Tier 1 capital ratio %			0.017
			(0.018)
Observations	225	218	204
R-squared	0.240	0.243	0.245

Return on Equity is defined as net income divided by the book value of common equity. Short-term debt is defined as debt in current liabilities divided by total liabilities. The Tier 1 capital ratio comes directly from Compustat. All remaining variables are defined as in Table 1. The OLS estimator is used. The constant term is included but not reported to avoid cluttering. All columns include state fixed effects. Robust standard errors are in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively.