Board of Directors' Networks, Gender, and Firm Performance in a Male-Dominated Industry: Evidence from U.S. Banking

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Board of Directors' Networks, Gender, and Firm Performance in a Male-Dominated Industry: Evidence from U.S. Banking *

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Abstract

Leadership roles in banking remain dominated by men; only about one in six bank board members is female. Connections among board members can improve firm performance, but women on boards are much less connected than men. In this paper, we study how gender relates to the role of connections: how do connected female versus male board members affect banks' performance? Using IV techniques to account for the endogeneity of connections, we find that (1) better connected female (but not male) board members improve bank profitability and reduce earnings management; (2) connections of women on important board committees also improve performance – especially when the share of women on the board is relatively high (above the median).

Keywords: bank boards; professional networks; gender diversity; instrumental variables

JEL Codes: G21; G34; J16

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1 Introduction

The banking industry is heavily male dominated; the median bank board has no female board members over our entire sample period—and the average share of women rose only to 17% by 2019. In addition, female executives and board members have less extensive social and professional ties to other board members – which can hinder female careers as being less connected means less likely additional appointments and lower compensation (Bouwman, 2011; Owen, Temesvary, and Wei, 2021). However, the literature shows mixed results on whether social and professional ties within the boardroom helps overall firm performance. The impact could be negative if connections foster cronyism or reduce the board's monitoring ability or incentive (Fracassi and Tate, 2012; Khanna, Kim, and Lu, 2015). Or, the impact could be positive if these networks promote information sharing and efficiency (Zhao, forthcoming; Ke et al, 2018). In this paper, we take a novel approach by studying how the performance effects of board members' professional networks depend on whether the directors are male or female. We find that female board members that are better connected to the board improve bank performance, but we find no such effect of connected male board members. We also show that the connections of women on important board committees are associated with improved performance.

Board membership may be endogenous to firm performance – therefore, we rely on instrumental variables estimation to draw our conclusions. For our instrument, we point to events that are truly exogenous to the connections/networks of a bank's board members: the deaths of connected directors (Fracassi and Tate, 2012).[1] We apply this estimation method to a unique

[1]Fracassi and Tate (2012) explore the relationship between connections of CEOs and directors and firm value.

database – developed in Owen, Temesvary, and Wei (2021) – on the professional and social connections of individual directors on the boards of a large number of U.S. banks.[2]

The principle of homophily would imply that being female – a defining director characteristic in the male-dominated bank board – can be an obstacle to effective participation (Jackson et al, 2022; McPherson et al., 2001; Marsden, 1987). In this light, our findings suggest that more connections may help female board members counteract homophily as they become more integrated into the work of the board – allowing them to participate more effectively in firm governance.[3]

Our results consistently support the conclusion that connections help integrate female board members effectively into the work of the board. We show that the impact of connected female directors is greatest when the share of women on the board is non-trivial. When there is only one woman on the board, the extent of her participation does not materially help the bank's performance; but, as the share of women on boards increases, the extent of their contributions to group decision-making becomes more important. In addition, we show that connections of women on important board committees further improve bank performance. Finally, the magnitude of our point estimates indicates that the type of connection that has the highest impact is female board members who are connected to male board members. This is consistent with connections helping female board members become integrated into a male-dominated environment.

There is a large literature on the impact of social and professional networks among board members and senior executives. Much of it finds that within-firm connections involving board

[2] Focusing on the banking sector allows us to study the impact of gendered connections in an industry that is heavily associated with male leadership. In addition, studying a single sector reduces the bias arising from unobserved heterogeneity across industries. We estimate a Heckman selection bias correction model to account for the fact that the main connections measures are undefined on boards with no women.

[3] Westphal and Milton (2000) pursue a similar hypothesis using surveys of board members of Fortune 500 countries that self-report influence in decision-making.

members and/or senior management reduce performance (Hwang and Kim, 2009; Fracassi and Tate, 2012; Nguyen, 2012; Kramarz and Thesmar, 2013; Khanna, Kim and Lu, 2015). We make a contribution to this literature because we focus specifically on the gender-based dimension of connections within the board. Doing so allows us to tease out conditions under which the positive effects of connections dominate. Our approach also highlights an important mechanism through which the perspectives of underrepresented board members may be more fully integrated into (or marginalized in) group decision-making.

The paper proceeds as follows. In section 2, we review our contributions in the context of the related literature. In Sections 3 and 4, we describe the data and methods. In Section 5, we detail our results, and conclude and summarize in Section 6.

2 Related Literature

Our results are linked to two different strands of the literature on characteristics of board members and firm performance. One strand of the literature examines the role of board gender diversity in multiple dimensions of firm performance (Erhardt et al., 2003; McGuinness et al., 2017; Kara et al., 2022.). Ahern and Dittmar (2012) use the imposition of a gender quota on boards in Norway to study the effect of gender diversity on firm performance and find a negative relationship. In contrast, Schmid and Urban (forthcoming), using a large international data set, find that stock prices decrease when female directors die, arguing that the voluntary addition of women to the board may have a different effect than forced gender integration. Adams and Ferreira (2009) find some mixed results, showing that gender diverse boards do a better job monitoring senior management, but the overall effect of gender diversity on firm performance is negative. Sila et al.

(2016) suggest that gender diversity does not affect firm risk but that firm risk plays a role in the selection of directors.

Some work in this vein is able to reconcile these conflicting findings by focusing on explanations that rely on the extent to which female board members are integrated into the work of the board (Schwartz-Ziv, 2017; Joecks et al. 2013; Torchia et al., 2011.) In the context of the banking industry, Owen and Temesvary (2018) show that the impact of gender diversity is non-linear—the board needs to achieve a threshold share of female participation, beyond which increased gender diversity improves performance. Fan et al. (2019) find similar non-linear effects for a favorable impact of gender diversity on earnings management. Finally, Green and Homroy (2018) find a positive effect of gender diversity on a large sample of European firms, provided that female board members are actively involved. Importantly, they use membership on board committees as a proxy for active involvement in corporate governance. These findings suggest that diversity can increase performance, but only if those diverse perspectives are incorporated into group decisions.

A second strand of literature examines how social and professional networks on boards are related to firm performance, with conclusions depending notably on what level the connections form at. First, papers that study ties between the CEO and board members generally find negative performance effects. For example, Fracassi and Tate (2012) find that ties between the board and the CEO weaken the board's ability to perform its monitoring role. Khanna, Kim, and Lu (2015) find similarly that connections between the CEO and board members increase the likelihood of corporate fraud. Kramarz and Thesmar (2013) show that active social networks in the boardroom are associated with higher pay for CEOs, a reluctance to dismiss an under-performing CEO, and pursuit of less value-enhancing acquisitions.

In contrast, papers that study connections *within* a board or executive team point to improved performance, consistent with these connections leading to greater information sharing. For example, Zhao (forthcoming) finds that connections between compensation committee members reduce CEO excess compensation and connections between audit committee members reduce earnings management. Similarly, Ke et al. (2018) find that executive teams with more social connections make more accurate management forecasts.[4]

Finally, papers studying connections between the board or CEO and those who are external to the firm show improved performance, highlighting the benefits of information sharing and the integration of additional perspectives into decision-making. For example, Engleberg, Gao, and Parsons (2012) show that social ties between the board and bankers are associated with better loan terms followed by improved firm performance, suggesting that these connections led to better information flow between the firm and the bank. Faleye, Kovacs, and Venkatesaran (2014) find that CEOs with more connections outside the firm are more innovative and Bouwman (2011) shows that firms with overlapping directors converge in governance practices.

Building on the insights of these different strands of the literature, we point to an important context in which internal networks improve firm performance. We find that, in the male-dominated banking industry, the internal networks of female board members positively affect bank performance. Our results are consistent with these connections fostering integration of the female board members into the work of the board. Our large and extensive data set, combined with our methods that allow us to produce evidence of causality, make this a particularly robust finding.

[4] Javakhadze and Shelton (2022) show that differential rewards for social capital for male and female executives can help explain the gender wage gap among executives. However, they do not find any evidence that male connections have a differential impact on firm operating performance.

3 Data

In this section, we briefly describe the data used in the analysis. Our dataset builds on the director-level social connections data used and described in Owen, Temesvary, and Wei (2021). To construct the data set, we collect biographical information from the BoardEx database of Management Diagnostics Ltd. on current and historical employment, undergraduate and graduate education, and professional and leisure affiliations. We use directors' employment histories to create a quarterly record of board membership, and we aggregate banks to the top-holder level using bank names from Boardex and a crosswalk from the National Information Center database. An important advantage of our procedure is that because we use bank names to match, we are able to include private banks with no ISIN, tickers, or CIK codes. This yields a sample of 554 bank holding companies.

3.1 Connections Measures

We define two directors as connected if they worked at or were associated with the same company, university, or organization prior to their board membership. We consider only within-board connections. We focus on three types of connections: those based on employment, education, and through other activities. We define employment connections as two directors having worked at the same company for some overlapping period of time. We count education connections as those between two directors who graduated within two years at the same college or university. And we count "other activity" connections as two directors having belonged to the same club, organization, or charity.[5]

[5] To avoid undercounting potential employment connections, we place no restrictions on the type of role from which directors obtain connections. However, we verify that our results hold irrespective of whether we include connections obtained from non-board positions in addition to those obtained from board positions and when we restrict employment connections to those obtained from only previous directorships.

Over the 1999 to 2019 period, our sample covers 11,097 directors, with 983,972 unique connections. The most frequent connections are through employment, which account for 87 percent of all connections, while the least frequent are education connections, accounting for 4 percent. Other activity connections account for 9 percent of all connections. Most employment connections occur in the banking or financial sectors, which account for 58 percent of all employment positions, while the most frequent non-financial sectors through which directors were previously connected are insurance, utilities, and software and computer services.

We measure overall connectedness of the board at the bank level using indices for four types of connections: Female-Female (FF) connections, Female-Male (FM) connections, Male-Male (MM) connections, and Male-Female (MF) connections. We also define indices that measure the total number of connections: we consider Female (F) connections that pool FF and FM connections and Male (M) connections that pool MM and MF connections. Our female connection measures are undefined for boards with no women.

The indices are defined as the total number of connections of a particular gender divided by the number of directors of that gender. For example, the FF connection index is defined as the total number of female connections women have divided by the number of women on the board. In addition, the FM connection index is defined as the total number of male connections women have divided by the number of women on the board. Out of all connections, most connections (63 percent) occur between two male directors, while 32 percent occur between male and female directors and 5 percent occur between two women.

Intuitively, our main connection measures capture the average number of male or female connections men and women have. For example, consider a board with 3 women and 3 men, where each woman is connected to one man. For this board, the FM index is 1 (3 divided by 3), indicating

that the average woman has 1 male connection. In addition, if on this board 2 of the 3 women are connected to each other, the FF index in a board is 2/3, indicating that the average woman has 2/3 female connections.[6] In some supplementary estimations, we create alternative indices which weight connections by their length, giving more importance to connections that span more years.

Table 1 shows summary statistics. The female connection index has a mean of 1.97, indicating that the average woman is connected to about 2 other directors. The FM connection index has a mean of 1.86, while the FF connection index has a mean of 0.11, indicating that the average woman is connected to 1.9 men and 0.1 women respectively. Consistent with the underrepresentation of women on boards, the average woman has far more connections to men than to women. However, even in banks that have the largest share of women on the board, the average woman still has more male connections than female connections.[7]

3.2 Board Characteristics

Table 1 also summarizes various bank board characteristics that we include as control variables in our estimations: Age, indicator for graduate education (Grad School), Bank Board Experience, and Current Bank Employment. We measure the average characteristics of directors separately for men and women. This is particularly important because we examine a gendered dimension of connections and the prevalence of male or female connections may be due to gender differences in the characteristics.

[6] Given that potential connections may vary depending on the proportion of women on the board, some connections may be more prevalent because there are more opportunities for that type of connection to occur. For example, there are 25 potential female-male connections when there are 5 men and 5 women, while only 9 potential female-male connections when there are 9 men and 1 woman. Thus, we verify our results hold when we substitute the denominator of the FM connections index with the number of women times the number of men. We also include bank fixed effects, and we control for board size and proportion of women on the board.

[7] In the sample of boards with shares of women in the top quartile in each quarter, we find that the FM and FF connection indices have a mean of 1.3 and 0.16, and for boards in the top decile in each quarter, we find the indices have a mean of 1 and 0.2.

On average, men and women are near-identical in age: the mean age for men is 57 years and the average woman is 58 years old. Female directors are slightly more educated than men, with 48.5 percent of women having a graduate education and 41 percent of men. Men, on average, are more experienced on bank boards, with an average experience of 9.5 years, while women have an average experience of 8 years. On average, men and women are also nearly identical in the number of bank boards they currently sit on, at around 1.6.

3.3 Bank Characteristics

We include the following bank traits: Tier1 Capital Ratio, Loan to Deposits Ratio, Ln(Board Size), and Percent Female. In the sample of all banks, the average board is well capitalized, has 7 directors, and about 9 percent of the board is composed of women. In the subsample of boards with at least 1 woman, the average board size is 10 and about 20 percent of the board is composed of women. Exploring our data, we find that the connection measures are correlated with overall board characteristics in expected ways (not shown). In boards where the men or women have a higher average age, average board experience, and current bank employment, both men and women have more overall connections, as well as more male and female connections. In addition, both men and women have more male and female connections when they are on larger boards. Interestingly, when a larger share of the board is composed of women, women have fewer total connections, less male connections, but more female connections.

3.4 Bank Performance Measures

We examine four measures of bank performance. Three measures are related to operating performance: return on assets (ROA), return on equity (ROE), and net interest margin (NIM) –

higher values of which indicate better performance. The banks in our sample operate with healthy ROA, ROE, and NIMs.

Our fourth performance measure is related to the board's monitoring role and is a proxy of bank earnings management as in Fan et al. (2019) and Cornett et al. (2009). We obtain this "earnings management" measure as the absolute value of the residual of a regression predicting loan loss reserves based on past loan losses and current delinquencies, deflated by book value of total loans.[8] The resulting variable measures the extent to which loan loss provisions are unexplained by the bank's experience with loan losses and delinquencies. A higher value for earnings management is associated with worse performance.

4 Methods: Instrumental Variable (IV) Estimations

We are interested in understanding how internal board networks affect firm performance. Of course, we need to address the potential endogeneity between board composition and firm performance. For example, sudden drops in performance may lead to a "shake-up" that disproportionately targets either connected or unconnected directors. To address this issue, we employ an instrumental variables estimation procedure. For a valid instrument, we need to focus on an event that corresponds to a sudden discontinuation of connections/relationships that is not caused by bank performance. For that reason, our main specifications count the death of a connected director as a shock to a board's average level of connectedness. Specifically, we use the cumulative number of deaths of connected directors as an instrument for the bank's connections

[8] We regress a bank's loan loss provisions in quarter t on the natural logarithm of total assets in t, the change in total loans from t-1 to t, loan charge-offs in t, loan loss allowances in t-1, the change in 90 past-due loans from t-3 to t-2, t-2 to t-1, t-1 to t, and t to t+1. Following Fan et al. (2019), we deflate all variables except for bank size by the book value of total loans, and we calculate our measure of earnings management by multiplying the residual of the regression by the loan to asset ratio and taking the absolute value.

index. With a setup that defines a director's passing as a shock, we seek to mitigate the possibility for bank performance to affect factors that influence board composition and networks.

This approach is similar to the identification strategy in Fracassi and Tate (2012) who use deaths and "mandatory" retirements of directors who are connected to the CEO to instrument for the percent of the board that is connected to the CEO. We focus exclusively on the deaths of currently serving connected board members because the deaths of such board members are unlikely to be caused by bank performance.[9] The key assumptions for this identification strategy are that 1) the deaths of currently serving connected directors are unanticipated and 2) are uncorrelated with other unobserved determinants of bank performance. Because we focus only on the deaths of currently serving directors, the first condition is plausibly satisfied. To determine if director deaths affect bank performance in an additional way other than via the impact of connected director deaths on the overall connectedness of the board, we also show that our results are robust to including the deaths of all directors (connected and unconnected) in the second stage.[10] In other words, we find evidence that the deaths of connected directors influence bank performance through their impact on the overall connectedness of the board, but not through other means.

To implement this strategy, we obtain the death dates of deceased directors from Boardex and we supplement our data on directors' deaths with a database on changes in directors and officers from Audit Analytics. We use the cumulative number of deaths of directors with either a male or a female connection as the instrument for connectedness. Our connection indices measure the average number of connections of men or women; therefore, for our instrument to be strong,

[9] In our data, although we are able to identify some banks with mandatory retirement ages for board members, we also observe several directors who serve beyond that age so we are not confident that the mandatory retirement age represents an exogenous shock to board composition.

[10] See Appendix 4. Coefficients on the cumulative deaths of all directors enter with inconsistent signs and are insignificant in eleven of the twelve estimations.

we need to focus on director deaths that lead to the discontinuation of a sufficiently high number of connections. Thus, given the FM connections index has a mean of 1.86, for the FM connections instrument we include only those deceased female directors who have had 2 or more male connections.[11] For the FF connections instrument, we include all deceased female directors with at least 1 female connection.

The first stages of our estimations use the cumulative number of deceased directors to predict FM and FF connections. Intuitively, the coefficients on the instruments represent the average decrease in female-male connections or female-female connections from the passing of a female director with at least 2 male connections or at least 1 female connection. In the second stage, our identification is based on the corresponding drop in the connection measures resulting from a director's passing. We rely on differences in bank performance around the time of the death of directors to estimate the effect of connections.

The second stage of our IV estimation takes the form

$$Y_{i,t} = \alpha_0 + \alpha_1 X_{i,t-1} + \alpha_2 Z_{i,t-1} + \alpha_3 S_{i,t-1} + \alpha_4 T_t + \alpha_5 B_i + \varepsilon_{i,t},$$

where $Y_{i,t}$ is a measure of bank performance, and $X_{i,t-1}$ is the one-quarter lagged value of a connection measure. $Z_{i,t-1}$ is a vector of the average characteristics of men and the average characteristics of women, $S_{i,t-1}$ is a vector of balance sheet and board characteristics, and T_t and B_i are year-quarter and bank fixed effects. The equation also includes the inverse Mills ratio from the Heckman selection bias correction for estimations that look at female connections. Importantly, we include the percent of the board that is female to control for the fact that a higher share of women on the board gives greater opportunity for connections to female board members.

[11] Women with only 1 male connection are less connected than the average woman, so their passing would on average increase the FM connection index. As such, including them will weaken the instrument.

In both the first and second stage of the IV estimations, we include a set of average director characteristics for both men and women, as well as bank and board characteristics (as described above), and bank and year-quarter fixed effects. In addition, we lag all independent variables by one quarter and cluster standard errors at the bank level. Lastly, to account for any selection bias from the fact that our FM and FF measures are undefined for boards with no women, we implement the Heckman selection bias correction method. Specifically, we estimate a probit regression that uses our director and bank characteristics to predict whether a board has at least one woman on it. We use the coefficients of the regression to calculate the inverse Mills ratio and include it as a control variable in our estimations.

5 Results

5.1 Benchmark Results

In Table 2, we show (second stage) estimation results for the impact of female connections on bank earnings management, return on assets, return on equity, and net interest margin. In Panel A, we pool both male and female connections of women into a single female connections index, while in Panels B and C, we use indices that measure the male and female connections of women, respectively. Given our female connection measures capture the average connections per woman on a board, the coefficient estimates presented correspond to the estimated effect of the average woman gaining one additional connection, one additional male connection, and one additional female connection.[12]

[12] Because there are differences between the three types of female connections in frequency and total variation, the coefficients are not immediately comparable across connection measures. For example, there are substantially fewer female-female connections than female-male connections, so the addition of an extra female connection per woman has more practical significance than the addition of an extra male connection per woman. Thus, in addition to interpreting the raw coefficients on the connection measures, we also calculate the standardized impact of a one standard deviation increase of a particular connection measure.

Panel A in Table 2 points overall to better connected female directors being associated with stronger governance and profitability at banks. For the average board, a woman gaining one additional connection has several performance benefits: it reduces earnings management by 0.05 standard deviations (s.d.) (coefficient of -0.0003) and increases ROA by 0.11, ROE by 0.03, and NIM by 0.15 s.d. (coefficients of 0.05, 0.31 and 0.03), respectively. Since the female connections index has a standard deviation of 2.65, another way to put these results is to note that a one s.d. increase in female connections corresponds to a 0.14 s.d. decline in earnings management and increases of 0.29 s.d. in ROA, 0.08 s.d. in ROE, and 0.4 s.d. in NIM.

In Panels B and C of Table 2, we find that both female-male and female-female connections reduce earnings management and increase ROA, ROE, and NIM.[13] The results suggest that adding an extra male connection per female director has a two and half times larger performance effect than adding an extra female connection per female director. For instance, a one s.d. increase in female-male connections reduces earnings management by 0.18 s.d. and raises ROA by 0.37 s.d, while the comparable effects for higher female-female connections are a reduction in earnings management of 0.07 s.d and an increase in ROA of 0.15 s.d.

The first stage results for Table 2 are shown in Appendix 1. For both FM and FF connections, a director's passing is a significant and negative predictor of the connection measures at the 1 percent level. Using deaths as an instrument for FM connections, we find that the passing of a female director with at least 2 male connections, on average, decreases the average male connections per woman by 2.7. For FF connections, we find that the death of a female director

[13] The inclusion of bank fixed effects and the share of women on the board as controls in all specifications should subsume the effect arising from some banks having more potential female-male connections than others. In addition, we verify that our results hold when we normalize our connection measures by total potential connections.

with at least 1 female connection decreases the average female connections per woman by 0.9. In both cases, the passing of connected female directors has a large effect on FM and FF connections.

5.2 Results for Boards with Above and Below Median Shares of Women

One reason why connections of female board members are positively associated with bank performance may be that they help female directors become more integrated into the work of the board. If this is the case, then we might expect to see differential effects of these connections when women are a smaller or larger share of the board. In Tables 3 and 4, we show estimation results for the impact of female connections for banks for higher vs lower shares of the board composed of women. Using only observations for which there is at least one woman on the board, we calculate a board's share of female directors over all quarters and we split the sample into banks with above vs. below-median shares. Results for banks above the median appear in Table 3 and results for banks below the median appear in Table 4. We split the sample by banks, rather than bank-quarters, so that banks do not "switch" subsamples over time.

The results show that female connections have a significant impact on performance only for banks with an above-median share of female directors. For above-median shares, a one s.d. increase in female connections corresponds to a 0.19 s.d. decrease in earnings management and increases of 0.28 s.d. in ROA, 0.12 s.d. in ROE, and 0.61 in NIM (Table 3, Panel A). These effects are larger than those identified for the full sample in Table 2. Furthermore, the effects are larger for male connections of women than for female connections of women, as we also saw in Table 2. Table 4 shows no significant performance impact from female connections for banks with below-median shares of women on their boards.

For banks with at least one woman on the board, the median share of female directors over our entire sample period is 16 percent. Given an average board size of 10, the results indicate that connections have a positive impact on performance when there is two or more female directors on the board. These results bring new color to the findings of Owen and Temesvary (2018) who showed that performance benefits from gender diversity accrue only once a bank achieves a threshold share of women on its board.[14] The current findings, in this context, imply that the performance benefits of a gender-diverse board materialize (at least in part) through those female board members' connections.

5.3 Results for Committee Connections

Next, we study the effect of committee connections, calculated for women on either the audit, nomination, or compensation committees.[15] As we do before, we split the sample by examining banks with a share of women on the board above the median (Table 5) and those below the median (Table 6; with the median being calculated as described above, using only banks that have at least one woman on the board). Consistent with the earlier results we find that for banks with an above-median share of women on the board, the connections of those women on committees help to improve performance in all three dimensions. For above-median shares, a one s.d. increase in female connections corresponds to a 0.2 s.d. decrease in earnings management and increases of 0.31 s.d. in ROA, 0.14 s.d. in ROE, and 0.58 in NIM (Table 5, Panel A). As before, the effects are larger for male connections of women than for female connections of women. Table 6 shows no

[14] We also examine the impact of male connections (Appendix 2) and do not find statistically significant results. This could be because male connections generally have little to no impact on bank performance or because the passing of male directors has a weaker impact on male connections. This is because bank boards typically have more male directors; therefore, the death of one man is less likely to drive down the male average, making male deaths a weaker instrument.

[15] We show the results for connections calculated individually for each committee in Appendix 3.

significant performance impact from female connections on committees for banks with below-median shares of women on their boards.

5.4 Additional Estimations

5.4.1 Impact of Male Connections

Throughout, we have focused on the connections of women. In Appendix 2, we examine the impact of male connections instead, focusing on overall male connections (Panel A), on male-female (MF) connections (Panel B), and on male-male (MM) ties (Panel C). We do not find a relationship between bank performance and male connections – the coefficients are insignificant throughout.

5.4.2 Individual Committee Connections

In Table 5 and 6, we looked at the role of connections of women across the audit, nomination, and compensation committees combined. In Appendix 3, we study the role of connections on each of these three committees separately. We find that the significance of the Table 5 results above are driven by female connections on the nomination and compensation committees – whereas connections on the audit committee appear unrelated to bank performance.

5.4.3 Alternative (Combined) Instrument – Accounting for All Director Deaths

In Appendix 4, we present the results of a robustness check in which we include the total number of male and female deceased bank directors, both connected and unconnected, to account for the possibility that the death of a director may directly influence bank performance. If banks, on average, perform worse following the shock that a director's death brings, then examining the effect of changes in female-male and female-female connections that result from the passing of a

director may attenuate the potentially positive impact (or amplify the negative effect) of connections. We show that this alternative formulation has little effect on our results.

5.4.4 Weighted Connection Indices: Above Median Percent Female

Connections that span more years may be deeper. To allow for longer connections to have stronger effects, in Appendix 5 we present results using weighted connection indices that are constructed using connections that are weighted by the number of years that the director is connected to others on the board. These results show that our findings are robust to this alternative measure of connections.

5.4.5 Adding the Deaths of Unconnected Female and Male Directors as a Second Instrument.

Appendix 6 shows second-stage results for an IV specification where (compared to the findings shown in Table 2) we add the deaths of unconnected female and male directors as a second instrument. We find that our benchmark results remain robust to this alternative specification.

5.4.6 Anecdotal Evidence of Mechanism

Our IV estimation strategy finds evidence of a causal role of connections of female board members in determining bank performance. To supplement our understanding of the mechanism, we designed and conducted a survey of members of Bank on Women – a non-profit organization dedicated to supporting female leadership in banking. Anecdotal evidence from the results of this survey broadly corroborate the role of connections in facilitating full participation of female board members. Specifically, while 2/3 of the female bank directors felt that they participated equally

in board decisions, women with fewer connections at the time of appointment were more likely to indicate that they did not or were not sure whether they were able to participate equally. Some survey respondents specifically mentioned "the old boys' network" on the board as a barrier to their participation. Although only anecdotal, these survey results suggest that at least for some women, connections are important for facilitating their contributions.

6 Conclusion

We provide evidence that better connected female directors on bank boards are associated with improved bank performance, in the form of less earnings management and higher profitability. We do not find evidence of a similar effect of connections of male directors. Our estimation strategy utilizes the shock arising from the passing of highly connected directors to address the potential endogeneity of connections. We also control for time-invariant bank-specific factors through bank fixed effects and for several director, board, and balance sheet characteristics. Our results suggest that connections of female directors are beneficial to the overall functioning and success of the board. In addition, our findings are consistent with the interpretation that within-board connections help integrate female directors into the board's decision making.

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Table 1. Summary Statistics.

VARIABLES	N	Mean	SD	P10	P25	P50	P75	P90
Male Characteristics								
Age	69,229	57.40	8.100	46	52.50	58.67	63	66.50
Grad School	58,507	0.410	0.340	0	0	0.400	0.667	1
Bank Board Experience	69,367	9.492	5.350	2.750	5.650	9.231	12.75	16.18
Current Bank Employment	69,399	1.596	0.476	1	1.100	1.667	2	2
Female Characteristics								
Age	28,908	57.91	8.254	47	53	58	63	68
Grad School	18,891	0.485	0.452	0	0	0.500	1	1
Bank Board Experience	29,141	8.051	5.941	1.375	3.500	6.917	11.50	16.25
Current Bank Employment	29,221	1.627	0.546	1	1	2	2	2
Bank Characteristics								
Tier1 Capital Ratio	22,559	12.43	6.330	9.410	10.43	11.79	13.48	15.88
Loan to Deposits Ratio	22,558	1.091	0.263	0.820	0.954	1.088	1.224	1.358
Ln(Board Size)	70,972	1.683	0.863	0	1.099	1.946	2.303	2.639
Percent Female	70,312	0.0858	0.140	0	0	0	0.143	0.250
Connection Measures								
Female Connections	29,909	1.967	2.652	0	0	1	3	6
FM Connections	29,909	1.861	2.537	0	0	1	3	6
FF Connections	29,909	0.106	0.331	0	0	0	0	0.500
Male Connections	69,737	1.375	2.056	0	0	0.600	1.857	4
MF Connections	69,737	0.155	0.378	0	0	0	0.0667	0.625
MM Connections	69,737	1.220	1.849	0	0	0.500	1.625	3.562
Bank Performance Measures								
Earnings Management	19,959	0.00246	0.00516	0.000313	0.000733	0.00138	0.00222	0.00437
Return on Assets	22,559	0.166	0.466	0.00398	0.149	0.237	0.305	0.377
Return on Equity	22,559	1.250	10.39	0.0402	1.404	2.221	2.934	3.703
Net Interest Margin	22,558	0.933	0.194	0.743	0.829	0.917	1.016	1.143
Stock Price Growth	37,755	0.239	26.35	-32.73	-10.06	0.813	10.42	29.95

Table 2. Benchmark Results: Impact of Female Connections.

VARIABLES	Earnings Management (1)	ROA (2)	ROE (3)	Net Interest Margin (4)
Panel A: Impact of Female Connections				
Female Connections$_{t-1}$	-0.000278***	0.0507***	0.306**	0.0291**
	(0.000101)	(0.00934)	(0.153)	(0.0130)
Observations	10,175	10,912	10,912	10,912
First-Stage F-Stat	13.221	12.649	12.649	12.649
Panel B: Impact of FM Connections				
Female-Male Connections$_{t-1}$	-0.00037***	0.0675***	0.407**	0.0387**
	(0.000136)	(0.0126)	(0.206)	(0.0175)
Observations	10,175	10,912	10,912	10,912
First-Stage F-Stat	13.732	12.943	12.943	12.649
Panel C: Impact of FF Connections				
Female-Female Connections$_{t-1}$	-0.00112***	0.205***	1.234**	0.117**
	(0.000412)	(0.0391)	(0.607)	(0.0504)
Observations	10,175	10,912	10,912	10,912
First-Stage F-Stat	10.873	11.061	11.061	11.061

Notes: All columns show instrumental variables specifications and include the full set of controls for bank and board characteristics discussed in the text. The instrument for FM connections is the cumulative number of women who died with at least 2 male connections. The instrument for FF connections is the cumulative number of women who died with at least 1 female connections. The instrument for female connections is the sum of the instruments for FM and FF connections. Standard errors clustered at the bank level. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 3. Impact of Female Connections – Above Median Percent Female.

	Above Median % Female, Bank Level			
VARIABLES	Earnings Management (1)	ROA (2)	ROE (3)	Net Interest Margin (4)
Panel A: Impact of Female Connections				
Female Connections$_{t-1}$	-0.000375***	0.0495***	0.456***	0.0449***
	(9.16e-05)	(0.00854)	(0.110)	(0.00557)
Observations	5,620	6,010	6,010	6,010
First-Stage F-Stat	207.482	261.138	261.138	261.138
Panel B: Impact of FM Connections				
Female-Male Connections$_{t-1}$	-0.000501***	0.0657***	0.605***	0.0596***
	(0.000123)	(0.0114)	(0.146)	(0.00751)
Observations	5,620	6,010	6,010	6,010
First-Stage F-Stat	175.563	218.633	218.633	218.633
Panel C: Impact of FF Connections				
Female-Female Connections$_{t-1}$	-0.00150***	0.201***	1.847***	0.182***
	(0.000367)	(0.0349)	(0.452)	(0.0233)
Observations	5,620	6,010	6,010	6,010
First-Stage F-Stat	207.344	251.839	251.839	251.839

Notes: All columns show instrumental variables specifications and include the full set of controls for bank and board characteristics discussed in the text.. The instrument for FM connections is the cumulative number of women who died with at least 2 male connections. The instrument for FF connections is the cumulative number of women who died with at least 1 female connections. The instrument for female connections is the sum of the instruments for FM and FF connections. The median % Female is calculated at the bank-level, across all quarters, using all observations for which the %Female > 0. The table shows results for banks with a %Female above the median. Robust standard errors in parentheses. Standard errors clustered at the bank level. *** p<0.01, ** p<0.05, * p<0.1.

Table 4. Impact of Female Connections – Below Median Percent Female.

	Below Median % Female, Bank Level			
VARIABLES	Earnings Management (1)	ROA (2)	ROE (3)	Net Interest Margin (4)
Panel A: Impact of Female Connections				
Female Connections$_{t-1}$	-0.000147	0.0512	-0.320	0.0421**
	(0.000503)	(0.0378)	(0.532)	(0.0170)
Observations	4,555	4,902	4,902	4,902
First-Stage F-Stat	23.676	22.98	22.98	22.98
Panel B: Impact of FM Connections				
Female-Male Connections$_{t-1}$	-0.000192	0.0675	-0.422	0.0555**
	(0.000659)	(0.0511)	(0.705)	(0.0243)
Observations	4,555	4,902	4,902	4,902
First-Stage F-Stat	15.777	15.125	15.125	15.125
Panel C: Impact of FF Connections				
Female-Female Connections$_{t-1}$	-0.000626	0.212	-1.322	0.174***
	(0.00214)	(0.152)	(2.191)	(0.0601)
Observations	4,555	4,902	4,902	4,902
First-Stage F-Stat	47.536	50.918	50.918	50.918

Notes: All columns show instrumental variables specifications and include the full set of controls for bank and board characteristics discussed in the text and bank and year-quarter fixed effects. The instrument for FM connections is the cumulative number of women who died with at least 2 male connections. The instrument for FF connections is the cumulative number of women who died with at least 1 female connections. The instrument for female connections is the sum of the instruments for FM and FF connections. The median % Female is calculated at the bank-level, across all quarters, using all observations for which the %Female > 0. The table shows results for banks with a %Female below the median. Robust standard errors in parentheses. Standard errors clustered at the bank level. *** p<0.01, ** p<0.05, * p<0.1.

Table 5. Impact of Committee Connections – Above Median Percent Female.

	Above Median % Female, Bank Level			
VARIABLES	Earnings Management (1)	ROA (2)	ROE (3)	Net Interest Margin (4)
Panel A: Impact of Female Connections				
Female Connections$_{t-1}$	-0.000388***	0.0545***	0.544***	0.0424***
	(9.72e-05)	(0.00903)	(0.113)	(0.00539)
Observations	5,159	5,521	5,521	5,521
First-Stage F-Stat	269.952	291.556	291.556	291.556
Panel B: Impact of FM Connections				
Female-Male Connections$_{t-1}$	-0.000525***	0.0734***	0.732***	0.0570***
	(0.000132)	(0.0122)	(0.151)	(0.00738)
Observations	5,159	5,521	5,521	5,521
First-Stage F-Stat	213.766	228.526	228.526	228.526
Panel C: Impact of FF Connections				
Female-Female Connections$_{t-1}$	-0.00149***	0.212***	2.118***	0.165***
	(0.000382)	(0.0368)	(0.457)	(0.0218)
Observations	5,159	5,521	5,521	5,521
First-Stage F-Stat	248.018	263.588	263.588	263.588

Notes: All columns show instrumental variables specifications and include the full set of controls for bank and board characteristics discussed in the text and bank and year-quarter fixed effects. The instrument for FM connections is the cumulative number of women who died on a committee with at least 2 male connections. The instrument for FF connections is the cumulative number of women who died on a committee with at least 1 female connections. The instrument for female connections is the sum of the instruments for FM and FF connections. The median % Female is calculated at the bank-level, across all quarters. The table shows results for banks with a %Female above the median. Robust standard errors in parentheses. Standard errors clustered at the bank level. *** p<0.01, ** p<0.05, * p<0.1.

Table 6. Impact of Committee Connections – Below Median Percent Female.

	Below Median % Female, Bank Level			
	Earnings Management	ROA	ROE	Net Interest Margin
VARIABLES	(5)	(6)	(7)	(8)
Panel A: Impact of Female Connections				
Female Connections$_{t-1}$	-0.000457	0.0529	-0.511	0.0428*
	(0.000712)	(0.0556)	(0.706)	(0.0225)
Observations	4,093	4,386	4,386	4,386
First-Stage F-Stat	11.115	10.845	10.845	10.845
Panel B: Impact of FM Connections				
Female-Male Connections$_{t-1}$	-0.000678	0.0790	-0.764	0.0640
	(0.00109)	(0.0879)	(1.067)	(0.0394)
Observations	4,093	4,386	4,386	4,386
First-Stage F-Stat	5.83	5.684	5.684	5.684
Panel C: Impact of FF Connections				
Female-Female Connections$_{t-1}$	-0.00141	0.160	-1.541	0.129**
	(0.00210)	(0.156)	(2.139)	(0.0547)
Observations	4,093	4,386	4,386	4,386
First-Stage F-Stat	33.185	31.954	31.954	31.954

Notes: All columns show instrumental variables specifications and include the full set of controls for bank and board characteristics discussed in the text and bank and year-quarter fixed effects. The instrument for FM connections is the cumulative number of women who died on a committee with at least 2 male connections. The instrument for FF connections is the cumulative number of women who died on a committee with at least 1 female connections. The instrument for female connections is the sum of the instruments for FM and FF connections. The median % Female is calculated at the bank-level, across all quarters. The table shows results for banks with a %Female below the median. Robust standard errors in parentheses. Standard errors clustered at the bank level. *** p<0.01, ** p<0.05, * p<0.1.

Appendix 1. First-stage results for Table 2.

2nd Stage Dependent Var.	Earnings Management	ROA	ROE	Net Interest Margin
1st Stage Dependent Var.	Fem Conn	Fem Conn	Fem Conn	Fem Conn
VARIABLES	(1)	(2)	(3)	(4)
Female Deaths	-3.289***	-3.597***	-3.597***	-3.597***
	(0.905)	(1.011)	(1.011)	(1.011)
Observations	10,175	10,912	10,912	10,912
F-Stat	13.221	12.649	12.649	12.649
FM Deaths	-2.473***	-2.705***	-2.705***	-2.705***
	(0.667)	(0.752)	(0.752)	(0.752)
Observations	10,175	10,912	10,912	10,912
F-Stat	13.732	12.649	12.649	12.649
FF Deaths	-0.816***	-0.892***	-0.892***	-0.892***
	(0.247)	(0.268)	(0.268)	(0.268)
Observations	10,175	10,912	10,912	10,912
F-Stat	10.873	11.061	11.061	11.061

Notes: All columns show the relevant coefficients from first-stage instrumental variables specifications. The instrument FM Deaths is the cumulative number of women who died with at least 2 male connections. The instrument FF Deaths is the cumulative number of women who died with at least 1 female connection. The instrument Female Deaths is the sum of the instruments FF Deaths and FM Deaths. Standard errors clustered at the bank level. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix 2. Impact of Male Connections: Male-Female (MF) and Male-Male (MM) Connections.

VARIABLES	Earnings Management (1)	ROA (2)	ROE (3)	Net Interest Margin (4)
Panel A: Impact of Male Connections				
Male Connections$_{t-1}$	0.000795	-0.257	-3.176	-0.0734
	(0.00193)	(0.473)	(5.893)	(0.169)
Observations	10,230	10,971	10,971	10,971
First-Stage F-Stat	.229	.265	.265	.265
Panel B: Impact of MF Connections				
Male-Female Connections$_{t-1}$	0.0124	-0.377	-6.671	-0.183
	(0.0570)	(1.052)	(18.64)	(0.864)
Observations	10,230	10,971	10,971	10,971
First-Stage F-Stat	.019	.057	.057	.057
Panel C: Impact of MM Connections				
Male-Male Connections$_{t-1}$	0.000149	-0.139	-1.200	-0.0650
	(0.00145)	(0.176)	(1.682)	(0.100)
Observations	10,230	10,971	10,971	10,971
First-Stage F-Stat	.632	.632	.632	.632

Notes: All columns show instrumental variables specifications and include the full set of controls for bank and board characteristics discussed in the text and bank and year-quarter fixed effects. The instrument for FM connections is the cumulative number of women who died on a committee with at least 2 male connections. The instrument for FF connections is the cumulative number of women who died on a committee with at least 1 female connections. The instrument for female connections is the sum of the instruments for FM and FF connections. The median % Female is calculated at the bank-level, across all quarters. The table shows results for banks with a %Female below the median. Robust standard errors in parentheses. Standard errors clustered at the bank level. *** p<0.01, ** p<0.05, * p<0.1.

Appendix 3. Impact of Committee Connections: Individual Committee Connections.

	Audit Committee				Nomination Committee				Compensation Committee			
	Earn. Man.	ROA	ROE	NIM	Earn. Man.	ROA	ROE	NIM	Earn. Man.	ROA	ROE	NIM
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: Female Connections												
Female	-0.000432	0.0531	8.104	0.207	-0.000223**	0.0361***	0.326***	0.0398***	-0.000499**	0.0689***	0.503**	0.0350***
Connections$_{t-1}$	(0.00260)	(0.155)	(8.218)	(0.192)	(9.03e-05)	(0.00696)	(0.0896)	(0.00472)	(0.000216)	(0.0173)	(0.199)	(0.0101)
Committee	0.00506*	0.0495	-9.236	0.0502	0.000897	0.239	-1.950	-0.0283	0.00244	0.0188	-3.880	-0.0157
% Female$_{t-1}$	(0.00262)	(0.262)	(13.98)	(0.393)	(0.00268)	(0.261)	(4.014)	(0.128)	(0.00261)	(0.223)	(3.262)	(0.115)
Observations	7,135	7,622	7,622	7,622	6,091	6,526	6,526	6,526	6,578	7,048	7,048	7,048
1st Stage F-Stat	1.956	1.219	1.219	1.219	243.376	279.904	279.904	279.904	9.135	9.89	9.89	9.890
Panel B: FM Connections												
Female-Male	-0.000444	0.0531	8.098	0.207	-0.000297**	0.0479***	0.433***	0.0529***	-0.000667**	0.0915***	0.668**	0.0465***
Connections$_{t-1}$	(0.00267)	(0.153)	(7.549)	(0.179)	(0.000120)	(0.00936)	(0.120)	(0.00670)	(0.000289)	(0.0233)	(0.267)	(0.0138)
Committee	0.00597	-0.0542	-25.06	-0.355	0.00140	0.156	-2.696	-0.119	0.00327	-0.0976	-4.729	-0.0748
% Female$_{t-1}$	(0.00658)	(0.457)	(22.45)	(0.530)	(0.00277)	(0.270)	(4.087)	(0.142)	(0.00266)	(0.241)	(3.346)	(0.124)
Observations	7,135	7,622	7,622	7,622	6,091	6,526	6,526	6,526	6,578	7,048	7,048	7,048
1st Stage F-Stat	2.206	1.497	1.497	1.497	169.588	189.59	189.59	189.59	9.047	9.887	9.887	9.887
Panel C: FF Connections												
Female-Female	-0.0169	-81.08	-12,371	-316.5	-0.000902**	0.146***	1.323***	0.161***	-0.00198**	0.279***	2.034**	0.141***
Connections$_{t-1}$	(0.140)	(22,334)	(3.406e+06)	(87,192)	(0.000367)	(0.0284)	(0.367)	(0.0174)	(0.000886)	(0.0714)	(0.799)	(0.0392)
Committee	-0.0295	-158.4	-24,183	-618.4	-0.000644	0.491**	0.327	0.250**	-1.66e-05	0.373	-1.294	0.164
% Female$_{t-1}$	(0.287)	(43,652)	(6.658e+06)	(170,416)	(0.00252)	(0.250)	(3.910)	(0.116)	(0.00283)	(0.227)	(3.319)	(0.122)
Observations	7,135	7,622	7,622	7,622	6,091	6,526	6,526	6,526	6,578	7,048	7,048	7,048
1st Stage F-Stat	.03	0	0	0	394.153	467.059	467.059	467.059	8.454	9.15	9.15	9.15
Controls	X	X	X	X	X	X	X	X	X	X	X	X
Year-Quarter FE	X	X	X	X	X	X	X	X	X	X	X	X
Bank FE	X	X	X	X	X	X	X	X	X	X	X	X

Appendix 3. Individual Committee Connections.

Notes: All columns show instrumental variables specifications and include the full set of controls for bank and board characteristics mentioned in the text and bank and year-quarter fixed effects. The instrument for FM connections is the cumulative number of women who died on a particular committee who had at least 2 male connections. The instrument for FF connections is the cumulative number of women who died on a particular committee who had at least 1 female connection. The instrument for female connections is the sum of the instruments for FM and FF connections. Columns 1-3 calculate connections for only women on the Audit Committee, Columns 4-6 calculate connections for only women on the Nomination Committee, and Columns 7-9 calculate connections for only women on the Compensation Committee. Robust standard errors in parentheses. Standard errors clustered at the bank level. *** p<0.01, ** p<0.05, * p<0.1.

Appendix 4. Including all Director Deaths in Second Stage, Selected Coefficients

VARIABLES	Earnings Management (1)	ROA (2)	ROE (3)	Net Interest Margin (4)
Panel A: Impact of Female Connections				
Female Connections$_{t-1}$	-0.000222**	0.0487***	0.293***	0.0333**
	(0.000107)	(0.00991)	(0.0909)	(0.0140)
Deaths$_{t-1}$	0.000175	-0.00667	-0.439	.0140**
	(0.000124)	(0.0162)	(0.157)	(.00617)
Observations	10,175	10,912	10,912	10,912
First-Stage F-Stat	13.18	12.508	14.816	14.816
Panel B: Impact of FM Connections				
Female-Male Connections$_{t-1}$	-0.000294**	0.0648***	0.389*	0.0443***
	(0.000143)	(0.0135)	(0.213)	(0.0168)
Deaths$_{t-1}$	0.000177	-0.00663	-0.436	0.014
	(0.000131)	(0.0181)	(0.186)	(0.0102)
Observations	10,175	10,912	10,912	10,912
First-Stage F-Stat	13.606	12.683	12.683	12.683
Panel C: Impact of FF Connections				
Female-Female Connections$_{t-1}$	-0.000900**	0.196***	1.180*	0.134***
	(0.000431)	(0.0403)	(0.616)	(0.0484)
Deaths$_{t-1}$	0.000171	-0.00679	-0.0446	0.0139
	(0.000107)	(0.0121)	(0.153)	(0.00985)
Observations	10,175	10,912	10,912	10,912
First-Stage F-Stat	10.748	10.972	10.972	10.972

Notes: All columns show instrumental variables specifications and include the full set of controls for bank and board characteristics mentioned in the text and bank and year-quarter fixed effects. The instrument for FM connections is the cumulative number of women who died with at least 2 male connections. The instrument for FF connections is the cumulative number of women who died with at least 1 female connections. The instrument for female connections is the sum of the instruments for FM and FF connections. Standard errors clustered at the bank level. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix 5. Weighted Connection Indices: Above Median Percent Female

VARIABLES	Earnings Management (1)	ROA (2)	ROE (3)	Net Interest Margin (4)
Panel A: Impact of Female Connections				
Female Connections$_{t-1}$	-0.000249***	0.0370***	0.341***	0.0336***
	(6.27e-05)	(0.00720)	(0.0871)	(0.00542)
Observations	5,620	6,010	6,010	6,010
First-Stage F-Stat	91.758	83.933	83.933	83.933
Panel B: Impact of FM Connections				
Female-Male Connections$_{t-1}$	-0.000327***	0.0493***	0.454***	0.0447***
	(8.45e-05)	(0.01000)	(0.118)	(0.00795)
Observations	5,620	6,010	6,010	6,010
First-Stage F-Stat	67.636	59.353	59.353	59.353
Panel C: Impact of FF Connections				
Female-Female Connections$_{t-1}$	-0.00104***	0.149***	1.370***	0.135***
	(0.000268)	(0.0304)	(0.365)	(0.0207)
Observations	5,620	6,010	6,010	6,010
First-Stage F-Stat	83.535	88.107	88.107	88.107

Notes: All columns show instrumental variables specifications and include the full set of controls for bank and board characteristics discussed in the text and bank and year-quarter fixed effects. Connections are weighted by the number of years that the director is connected to others on the board. The instrument for FM connections is the cumulative number of women who died with at least 2 male connections. The instrument for FF connections is the cumulative number of women who died with at least 1 female connections. The instrument for female connections is the sum of the instruments for FM and FF connections. Standard errors clustered at the bank level. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix 6. Adding the Deaths of Unconnected Female and Male Directors as a Second Instrument.

VARIABLES	Earnings Management (1)	ROA (2)	ROE (3)	Net Interest Margin (4)
Panel A: Impact of Female Connections				
Female Connections$_{t-1}$	-0.000275***	0.0505***	0.304**	0.0289**
	(0.000101)	(0.00930)	(0.153)	(0.0130)
Observations	10,175	10,912	10,912	10,912
First-Stage F-Stat	7.709	7.51	7.51	7.51
Panel B: Impact of FM Connections				
Female-Male Connections$_{t-1}$	-0.000365***	0.0672***	0.404**	0.0384**
	(0.000135)	(0.0125)	(0.205)	(0.0175)
Observations	10,175	10,912	10,912	10,912
First-Stage F-Stat	7.608	7.314	7.314	7.314
Panel C: Impact of FF Connections				
Female-Female Connections$_{t-1}$	-0.001***	0.201***	1.222**	0.110**
	(0.000414)	(0.0393)	(0.606)	(0.0521)
Observations	10,175	10,912	10,912	10,912
First-Stage F-Stat	5.779	5.889	5.889	5.889

Notes: All columns show instrumental variables specifications and include the full set of controls of bank and board characteristics and bank and year-quarter fixed effects. The instrument for FM connections is the cumulative number of women who died with at least 2 male connections. The instrument for FF connections is the cumulative number of women who died with at least 1 female connections. The instrument for female connections is the sum of the instruments for FM and FF connections. Deaths of unconnected men and women are added as a second instrument. Standard errors clustered at the bank level. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.