Gender, performance, and promotion in the labor market for commercial bankers*

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Abstract

Using detailed data from the U.S. syndicated loan market, we find that women are persistently under-represented among senior commercial bankers. This gap is not closing over time due to unequal promotion rates between men and women working at the same institution in the same year and cannot be explained by a different individual or managerial performance. The gap is driven more by people than by institutions, with senior bankers both exhibiting assortative matching when switching employers and subsequently shifting the promotion gap in the direction of their previous workplace. We find evidence consistent with parts of the gap being driven by women shouldering more of the burden of family care. Hard credentials or female leadership at the top of banks do not attenuate the gender gap. In contrast, after being targeted by gender discrimination lawsuits, banks increasingly promote women.

JEL Classifications: D22, G21, G32

1 Introduction

Human capital plays an increasingly crucial role in corporate value creation (Zingales, 2000), and hence leveraging the potential of all members of society is not just a matter of fairness, but one of economic efficiency. However, large disparities in labor market representation and outcomes between groups persist. One particularly strong and persistent such gap exists between the sexes. While women have made tremendous progress in the workplace over the last decades, this progress is markedly uneven across the hierarchy and women remain underrepresented in the most highly paid roles and industries (Bertrand, 2018; Piketty, Saez, and Zucman, 2018). These differences are particularly stark in the financial industry (Bureau of Labor Statistics, 2019; Lagaras, Marchica, Simintzi, and Tsoutsoura, 2022).[1]

Due to rising societal pressure and the importance of the finance industry, policymakers have expressed the need to better understand the extent of gender gaps in finance and their drivers.[2] Our paper takes a step in this direction: We leverage a unique employer-employee matched dataset in the high-skill, high-pay commercial lending industry and document a large, persistent gender promotion gap. Our setting allows us to observe gender differences in an environment that potentially amplifies them, in a career with the the highest demands on employees and that is relying on relationships (Goldin, 2020). Moreover, we can pinpoint specific sources of this gender gap and highlight potential remedies.

We obtain detailed data on individual commercial bankers in the U.S. from the signature pages of loan contracts.[3] We can track both bankers' employment history and their client portfolios and the loan volume they underwrite. In other words, we observe bankers' absolute and relative performance. Furthermore, these signatures include information on the rank of

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[1]Finance is often characterized as being a particularly hostile work environment for women (Jaekel and St-Onge, 2016). For example, financial institutions have been the target of several high profile gender discrimination lawsuits (The Guardian (2006)).

[2]For example, a 2020 U.S. House of Representatives study (house.gov (2020)) found that "biases against women and underrepresented minorities perpetuate the lack of gender, racial, and ethnic diversity within the financial services industry", but laments that "there is little relevant data [on diversity in banks] because banks and other financial services firms do not fully disclose their diversity and inclusion data or policies".

[3]Since these contracts represent material events, they are part of the mandatory filings for publicly traded U.S. corporations. See Bushman, Gao, Martin, and Pacelli (2021) and Herpfer (2021) for more details.

the banker at the time of signing, which means we can trace the career trajectory of each banker as they advance through the ranks. Finally, we collect the location of each banker, which allows us to identify their colleagues and superiors. With this information, we can determine the role of bankers' environment, such as individual superiors and co-workers, in shaping the career paths of commercial bankers.

The U.S. loan market employs highly skilled individuals at the top of the income distribution, for which we are able to observe their rank, performance, and promotion simultaneously.[4] This setting is ideal to study the career dynamics of highly paid women, document any potential gender gaps, and investigate their causes and possible remedies.

We begin by documenting the representation of women among the senior ranks of commercial bankers in our sample. Comparing bankers working for the same bank at the same point in time, women are about 25% less likely to hold a senior position relative to men. These differences may reflect historical differences in women's career choices.[5] If so, the gender gap in seniority should shrink over time as female bankers get promoted through the ranks. However, women are also less likely than their male colleagues to be promoted to senior positions, even after controlling for measures of performance or moving the comparison to the individual bank location. That is, women are not just underrepresented among senior roles *in levels*, but are less likely to be promoted *in changes*. Moreover, gender is relevant only for the promotions of bankers to senior ranks, consistent with the presence of glass ceilings (Blau and Kahn, 2017).

The performance of individual bankers is a crucial driver of promotion (Gao, Kleiner, and Pacelli, 2020). Thus, a potential explanation for the gap could be differences in performance between bankers. In fact, Azmat and Ferrer (2017) find that, in the context of lawyers,

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[4]In our sample, virtually all bankers hold college degrees, more than half have obtained MBA degrees, and 20% come from the top schools in the nation. According to various salary comparison websites, the average nationwide salary for these bankers in 2022 is about $170,000, which is more than twice the average salary in the general finance sector and more than three times the average annual wage nationally according to the BLS. See https://www.bls.gov/ooh/business-and-financial/home.htm

[5]Women have long been under-represented in the finance industry. Lagaras et al. (2022) show that only 20 to 30% of women with postgraduate finance degrees start working in the financial sector.

women under-perform their male peers and, as a result, are under-represented among senior partners. This is not the case in our setting: Female bankers perform at least as well, if not better, than their male peers. Compared to men with similar tenure, that work for the same bank at the same time, women close more deals, have larger client portfolios, and generate higher deal volume. We also find no evidence that female bankers achieve higher loan volumes through more risk-taking. Loans originated by female bankers have the same frequency of rating downgrades or defaults as those originated by men.

Clearly, these performance measures are backward looking. If the responsibilities of bankers change as they rise through the ranks, the lower promotion rate could be an equilibrium outcome that reflects a comparative advantage of women in lower ranks (Grabner and Moers, 2013). To test this idea, we follow Benson, Li, and Shue (2019) and exploit variation in the likelihood of promotions to compare the performance of *marginally* promoted men and women. We find that ex-post, marginally promoted women outperform marginally promoted men in terms of loans issued. Finally, rather than just issuing loans, senior bankers may take on more managerial responsibilities. Thus, lower promotion rates of women could be due to them under-performing in terms of managerial ability. Using the same marginal promotion setup, we show that women outperform also in ex-post managerial performance.

Next, we explore the drivers of the gender promotion gap. Our unique hierarchical data allow us to identify the superiors and colleagues of women, and investigate to what degree the gap is personal, as opposed to institutional. In other words, is the gender promotion gap mostly a function of which bank employs you, or which boss *within that bank* you work for?[6] The answer to these questions is important since it motivates different policy responses. If individuals drive the gap, it can be addressed by supporting banks to weed out the "bad apples." If, on the other hand, the problem is at the institutional level, regulators need to pressure banks to change their practices.

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[6]Supervisors play an important role in assessing the performance and potential of employees, and there is evidence from other fields that they can be biased against women (Benson, Li, and Shue, 2021; Holub and Drechsel-Grau, 2021).

We construct meassures of the gender promotion gap on the bank-office level and separately estimate the relative contributions of individuals versus institutions toward explaining the this gap. We do so using the high dimensional fixed effect method for matched employer-employee samples developed by Abowd, Kramarz, and Margolis (1999). We find that individual bankers explain more than twice as much of the variation in the local gender promotion gap as do institutions, that is, the employing banks.

Is the gender gap at local bank branches driven by bankers self-selecting into specific locations, i.e., by "assortative matching", or do bankers shape the policy of promoting women at the branch they work? We find support for both channels: First, like financial advisers and firms "matching on misconduct" (Egan, Matvos, and Seru, 2019), bankers with a track record of low promotion rates for women tend to move to offices with similar gender promotion gaps. Second, after a banker with a history of high gender promotion gaps joins a new office, the gap in that location widens.

Our last set of results investigates the precise nature of and potential remedies for the gender promotion gap in banking. The economics literature has proposed three main lines of argument: Differences between genders based on *preferences*, differences based on unequal burdens in *raising families*, and finally, differences based on various forms of *biases*, or discrimination (see Bertrand, 2018, for an overview).

First, differences in preferences (Azmat and Ferrer, 2017; Reuben, Sapienza, and Zingales, 2022) are unlikely to be the main driver of our results. Bankers' individual levels of aspiration should be orthogonal to the personal characteristics of local superiors, and hence these bosses should not play a role in explaining gender gaps, while in our sample, they do.

Second, women are particularly disadvantaged through disproportionate burdens of child rearing (Goldin and Katz, 2008), particularly in the business world (Bertrand, Goldin, and Katz, 2010). We use two sets of tests to see if family responsibilities explain gender gaps: Banker mobility and the legal environment.[7] Women are more likely than men to choose

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[7]Testing for carer's responsibility directly is difficult in our setting since we do not observe bankers' family status or age.

employers based on their family situation, such as length of commute, rather than to optimize their career progress (Blackaby, Booth, and Frank, 2005; Booth, Francesconi, and Frank, 2003). This pattern seems to hold in our setting. Switching employers substantially accelerates careers, and, following a switch, a banker is almost doubling the unconditional promotion likelihood. However, this effect is almost exclusively driven by men. Women that switch employers experience almost no increase in their promotion likelihood.

Policy interventions can alleviate family burdens and can have positive effects on women's careers (Simintzi, Xu, and Xu, 2022; Kleven, Landais, Posch, Steinhauer, and Zweimüller, 2020; Raute, 2019). Whether this also holds at the top of the income distribution is not obvious. For these women, the monetary cost of raising a family might not be the binding constraint, making paid family leave a less efficient remedy. Consistent with these interventions having less impact at the top of the earnings ladder, we find no evidence that laws mandating paid maternity leave alleviate the gender gap in promotions.

Lastly, we turn to the importance of biases or discrimination in explaining gender gaps. If female bankers face *statistical discrimination*, signals of high human capital would increase their promotion chances. Using education data from a popular career network, we find no evidence that hard credentials have the desired effect.

Besides statistical discrimination, female bankers may also face unconscious, *implicit biases* (Bertrand, Chugh, and Mullainathan, 2005). This could be alleviated by female role models both on the local and organizational level.[8] In our setting, gender-diverse leadership at the local branch level indeed helps reduce promotion gaps.

Finally, if gender gaps are driven by *taste-based discrimination* by individual senior bankers (Becker, 1957), banks are likely to combat these practices after they lose a gender discrimination lawsuit. Indeed, after a bank loses or settles such a lawsuit, the promotion gap between men and women vanishes, although the effect is transitory. Importantly, this

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[8]For example, female senior executives and a gender-diverse board can help create an environment in which women can strive (Adams and Ferreira, 2009; Hospido, Laeven, and Lamo, 2022; Lins, Roth, Servaes, and Tamayo, 2021; Tate and Yang, 2015). Access to local management can also support women's career advancement (Cullen and Perez-Truglia, 2019).

effect does not exist for other labor discrimination lawsuits unrelated to gender, which points to a causal relationship.

Our paper contributes to a large and growing literature on gender in the finance industry. In important contemporaneous work, Huang, Mayer, and Miller (2022) investigate the performance and labor market outcomes for female retail mortgage brokers and, similar to our results on commercial bankers, find that women face higher performance requirements for promotion. Our setting allows us to add to their findings along several dimensions. First, we focus on the high-end segment of the finance labor market, i.e., that for syndicated lending to large corporate borrowers, where tough competition and professionalism could limit the scope for taste-based discrimination. Second, our data allow us to pinpoint the role of individual supervisors in promotion decisions and differentiate the role of individuals from that of banks as institutions. Finally, our setting allows us to analyze potential remedies for the gender promotion gap in banking, and find that legal threats, in particular, appear to help close the gap.

Our results are related to previous work on gender discrimination in the broader financial industry (Egan, Matvos, and Seru, 2021; Ewens and Townsend, 2020). In our setting, banking, most of the extant academic literature focuses on differential *access to* or *performance of* credit by gender (e.g. Ongena and Popov, 2016; Delis, Hasan, Iosifidi, and Ongena, 2020; Montoya, Parrado, Solís, and Undurraga, 2020; Beck, Behr, and Guettler, 2013). Our paper is one of the first to investigate gender gaps in the labor market for employees in banking.[9]

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[9]Finally, our paper also relates to the broader literature on gender across various business settings, including the broader financial industry (Egan et al., 2021; Ewens and Townsend, 2020), housing returns (Goldsmith-Pinkham and Shue, 2020), art (Adams, Kräussl, Navone, and Verwijmeren, 2021; Bocart, Gertsberg, and Pownall, 2018), board rooms (Field, Souther, and Yore, 2020), sales (Benson et al., 2021; Bircan, Friebel, and Stahl, 2021), and academia (Adams and Lowry, 2022; Card, DellaVigna, Funk, and Iriberri, 2020; Getmansky Sherman and Tookes, 2021; Kruger, Maturana, and Nickerson, 2020).

2 Data

This section provides a description of our sample. We start by obtaining the employment history of bankers and their firm portfolios from the SEC filings of all non-financial U.S. borrowers. Our sample starts in 1996, the first year of mandatory electronic filing, and ends in 2020. We complement this information with detailed loan data from LPC DealScan. We obtain biographic information, such as education, from a major online career network. As a final addition, we obtain information on bankers' locations from the same career network or, if unavailable, from manually reading loan contracts.

2.1 Bankers' employment history and performance measures

We obtain data on the employment history of bankers from publicly available loan contracts. SEC Regulation S-K, Item 601(b), classifies loan contracts as "material events" that need to be disclosed by borrowing firms in their 8-K, 10-K, or 10-Q filing. We download these filings from EDGAR for all Compustat firms between 1996 and 2020. We then apply an algorithm that identifies loan contracts in these filings and extracts the names and employers of the bankers from the signature pages of the loan contracts.[10]

Figure 1 presents an example of one such page, with circles indicating the pieces of information extracted by our algorithm. This information includes the name of the banker, the employing bank, as well as their title. For each loan, we obtain the name of the banker, the name of the bank for which the banker is signing the contract, and the title or seniority of the banker.[11]

- Figure 1 -

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[10]More detailed descriptions of the data, as well as examples and quality checks of the data can be found in Herpfer (2021) and Frattaroli and Herpfer (2021). Similar data is studied in Bushman et al. (2021).

[11]In our main analyses, we utilize all loan contracts, regardless of whether we find a match with DealScan, as our algorithm identifies contracts that are not in DealScan (Herpfer, 2021). Many amendments and extensions of existing loans are not a focus of DealScan, but provide us with valuable information to pinpoint the time at which bankers switch between employers or get promoted. Our results remain unchanged if we restrict the sample to the deals for which we have an overlap with DealScan.

As a final filter, we only retain observations in which bankers are in a leading role, that is, the algorithm identifies their bank as being among the lead banks of the syndicate. While this reduces the number of observations per banker, it allows for a better way to capture banker performance. Syndicate leaders, or lead banks, are responsible for negotiating the bulk of loan terms and monitoring borrowers subsequently. The lead bankers hold the relationship with their client, which allows them to cross-sell additional services. In contrast, syndicate participants are largely price takers. As such, it makes sense to focus on lead bank interactions as the core value added by bankers.[12]

In Appendix Figure A1, we display the distribution of the most frequent industries for each banker, separately for women and men. We find a relatively even distribution of loans across sectors, with most loans being issued to manufacturing firms, with large loan volumes also in construction, transport & utilities, trade, finance, and services. Interestingly, while we could have expected gender differences across sectors, e.g., fewer women making loans in the mining sector and more women making loans in the service sector, we find essentially no gender differences in main industries.

The bankers in our sample are commercial bankers, and they are mainly engaged in building and maintaining relationships with the largest U.S. corporations. These borrowers issue large loans which are syndicated to facilitate risk sharing.[13] Since their main function is to issue loans, the main performance measures for these bankers are the number and volume of loans they issue and the subsequent performance of these loans. Bushman et al. (2021) verify that loan underwriting is the main metric through which commercial bankers are evaluated and ultimately promoted.[14]

- Table 1 -

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[12]Of course, all bankers will sometimes be lead bankers and sometimes merely participants in the syndicate. In unreported results, we define the same performance metrics we calculate using lead banker interactions using the totality of each banker's deals and find that our inference remains unchanged.

[13]Since their clients are large companies and they often interact with other financial investors such as loan funds or CLOs, these bankers are sometimes referred to as "corporate bankers", and they are often physically and organizationally located close to banks' investment banking divisions.

[14]This relationship is also confirmed in Appendix Figure A2 that shows the strong relationship between the deal volume that a banker generates and her probability of being promoted to a senior position.

Panel A of Table 1 provides summary statistics within banks. On average, bankers have during their tenure at a given bank 2.3 large clients and 0.8 small ones. With these firms, they close an average of 2.9 and 1 deals, respectively. The median total deal volume that a banker accounts for is USD 950m, corresponding to about USD 530m per deal.

Panel B of Table 1 shows summary statistics across banks. When we consider the entire employment history of bankers, the client and deal portfolio, as well as the deal volume figures become slightly larger. When looking at banker characteristics, we observe about 20% of female bankers in our sample. Promotions are a rare occurrence and happen in about 6% of years.[15] Most bankers are in junior ranks as (Junior) Vice President (VP). 19% are Senior VPs, and 20% have a rank of director or above. Roughly half of the bankers in our sample for which we can obtain education records hold an MBA, and 19% attended a top school.[16]

We compare the average characteristics for male and female bankers in Panel C of Table 1. Women seem to have a larger client portfolio than their male counterparts: They have about 0.4 more clients, which are mostly large firms, and are closing about 0.5 deals more than men. This translates into an additional $366 million deal volume that women are accountable for. On top of that, women are also more likely to attend top schools than men. Perhaps most strikingly, given these differences, they are actually holding junior positions in the bank at a higher rate than men.

- Figure 2 -

Figure 2 shows the distribution, by gender, of active bankers over time in our sample. In the early 2000s, we have the maximum number of active bankers, some 1,500 men, and 500 women. The under-representation of women remains roughly constant in the first half

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[15]Note that all bankers in our sample are relatively senior since they are allowed to sign binding contracts on the bank's behalf. Many bankers remain on these levels until retirement without further promotions.

[16]We define top schools as those in the Ivy League as well as UC Berkeley, Stanford, Chicago Booth, Northwestern, and MIT.

of our sample and decreases afterward.[17]

2.2   Additional data

We supplement our data on bankers with detailed loan terms from LPC's DealScan database. Bank-firm pairs are matched with DealScan if we are able to find a loan with a start date in a three-month window around the date when the loan contract is signed. We do this because the date when the loan contract is signed sometimes differs from the start date that DealScan records, e.g., due to firms waiting to file the contract until a scheduled quarterly earnings report.

We further obtain details on bankers' educational backgrounds and locations from a major online career network. Specifically, we know if a banker attended college, the name of said college, and whether or not the banker has an MBA. Moreover, we record the location at which the banker is employed from the same source and supplement this location information by manually collecting the state where the bankers are located from loan contracts.

Due to the extensive data collection effort, we only record the most recent reported location of each banker.[18] To verify that this is a reasonable approach, we randomly sample 100 bankers and manually check if they move between locations. Bankers indeed rarely move. In 22 cases, we find both multiple employers, as well as at least two pieces of location information. Bankers tend to remain in the same location over time. Of those 22 bankers, 20 always remain in the same state and only 2 ever move between states. The low moving rate is sensible since a commercial banker's biggest asset is their set of relationships with local clients. This confirms our data collection strategy.

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[17]Since we remove bankers from the sample after observing their last deal, part of the decline towards the end of the sample stems from us dropping bankers from the sample.

[18]Many bankers only report their most recent location on the career network, not their historical ones.

3 Results

This section presents our findings on the role of gender in the labor market for commercial bankers. We begin by documenting substantial differences across genders in seniority and promotion likelihood. We then investigate if the gender promotion gap can be explained by differences in banker performance. Finally, we show the different roles of individuals and institutions in explaining gender gaps and investigate potential reasons why gender gaps arise.

3.1 A gender gap in commercial banking

Our first tests investigate whether women in commercial banking hold ranks with similar seniority as their male counterparts. The most junior bankers allowed to sign contracts on behalf of the bank have the rank of (Assistant) Vice President. Higher ranks include Senior Vice President, Director, and Managing Directors. Similar to Gao et al. (2020), we aggregate the differing titles into broader categories of Junior Vice President, Vice President, Senior Vice President, and a final category of all higher ranks, i.e., Director and above. In an initial exploratory step, we plot the fraction of women across ranks in Figure 3.

- Figure 3 -

The share of women in our sample is about 20%, but varies substantially across ranks. Women are over-represented with a share of about 24% of the workforce among juniors (Assistant VP and VP), but underrepresented among seniors with about 16% of the workforce.

To formally examine the relationship between gender and banker hierarchy, we then estimate specification 1.

$$Title_{i,t} = \beta_1 Female\ banker_i + \beta_2 X_{i,t} + \beta_3 \gamma_j \times \delta_t \times \sigma_s + \epsilon_{i,t} \tag{1}$$

The independent variable, $Title_{i,t}$, is an indicator for the various potential ranks for banker i in year t. Our main explanatory variable is the indicator *Female banker* which takes the value

1 if banker i's first name is associated with females and zero otherwise. We add individual-specific controls in vector $X_{i,t}$. These include the number of large and small deals as well as the deal volume that the banker is accountable for, and, most importantly, the banker's tenure with the bank since bankers with longer tenure will mechanically conduct more deals. To make sure that we account for potential non-linearities, we also include squared tenure as an additional control variable.

In our most complete specification, we include granular bank-times-year-times-state fixed effects ($\gamma_j \times \delta_t \times \sigma_s$). These control for: Time-invariant bank characteristics; general time trends such as business cycles; time-specific bank characteristics (for example, a bank might simultaneously decide to hire more female bankers as it is expanding its lending activity); and location-specific factors (for example, a given bank office might be more or less strict regarding promoting its employees). Intuitively, these specifications compare two bankers working at the same bank, in the same office, at the same point in time. Standard errors ($\epsilon_{i,t}$) are clustered two-dimensionally at the bank and banker level to account for arbitrary correlations in error terms within banks or bankers across time.

Our first tests, displayed in Table 2, show results from regressions of indicators for each banker's rank on *Banker female*. For example, the outcome variable in column 3, *VP*, is an indicator for bankers that are Vice President during the year t. The regression shows that women are 8.3 percentage points (pp) more likely to be Vice Presidents than men working at the same bank during the same year, holding constant banker tenure and performance. In column 4, we add bank-times-year-times-state fixed effects. In this strict specification, which compares employers that work in the same state, at the same bank, and at the same time, we find that women are 10.6pp more likely to be vice presidents. While women are more likely to hold junior ranks of VP and below, they are less likely to hold senior ranks of senior vice president, director, or higher. In all specifications, women are about 5 to 6pp less likely to hold these senior titles.

– Table 2 –

In sum, women are relatively under-represented among senior levels of commercial bankers. These results are consistent with anecdotal evidence and concerns by policy-makers, such as the findings in the 2020 U.S. House of Representative report on diversity in banking.

The results on titles represent a static view, a snapshot of how women rank compared to men on average during our sample period. However, this static view is the result of dynamic career trajectories. Women have historically been underrepresented in finance (see, for example, Lagaras et al., 2022) which could explain their under-representation among senior ranks. Since the bankers at the top of the hierarchy are usually decades into their careers, past imbalances in the composition of the workforce could explain current differences in seniority.

If that were the case, the initial imbalance among senior ranks should resolve naturally as junior women are promoted over time. If, on the other hand, this imbalance is driven by other factors, such as lower career aspirations or various forms of discrimination, women will not be promoted at the same rate as their male colleagues and the gender imbalance persists.

To test these competing hypotheses, we investigate if women are promoted at similar rates to men. We classify a banker as having received a promotion in a specific year if the banker's rank increases to a specific title (VP, Senior VP, or Director). For ease of exposition, we multiply the outcome variable by 100 such that coefficients correspond to percentage points. We then compare each banker to their peer group, that is, all bankers in the same rank. For example, in column 1 of Table 3, we consider all bankers that have the title of "Assistant Vice President" in a given year and ask if they are promoted to Vice President. We then estimate regressions on the banker-year level in which the outcome variable is *Promotion* and the main explanatory variable is *Female banker*. We further include the same banker-level controls for performance and tenure as in specification 1.

- Table 3 -

The results in Table 3 Indeed, we find no statistically significant difference in the like-

lihood of promotion for female bankers from the most junior level (Junior Vice President) to vice president. However, for higher seniority levels, we find a substantially negative and significant association between being female and the likelihood of promotion. The point estimates for the impact of being female on promotion to the rank of Senior Vice President are about -1.4pp. These are economically significant and represent a 60% relative reduction in the likelihood of being promoted compared to their male colleagues working at the same bank, in the same state, during the same year. These results are even stronger if we consider promotions to either senior role (Senior VP or Director) in the last two regressions.[19] These results show that the difference in levels of seniority is not going to vanish by itself through a natural progression of junior women.

- Figure 4 -

There might be a time trend towards higher promotion rates for women over time as the attention to gender diversity increases. Figure 4 shows a year-by-year development of the promotion rate of men and women during our sample. The graph shows no indication of an increase in the promotion likelihood for women. If anything, it appears that the gender promotion gap slightly increases over time.

3.2 Gender, performance, and promotion

A key question for the interpretation of both the gender promotion gap and the under-representation of women in senior ranks is whether these represent equilibrium outcomes from voluntary decisions of bankers or optimal decision-making by banks. For example, Azmat and Ferrer (2017) document that in law firms, a high-skill, competitive setting comparable to banking, women are underrepresented among law firm partners because they are under-performing men due to an ex-ante choice to focus on their family.

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[19]Our controls include multiple measures of performance, which complicates their interpretation. We find that *#Deals - Large* is generally having a positive and significant effect on promotion likelihood. However, holding number of deals constant, the *Tenure (yrs)* loads negatively. Combined, these coefficients imply bankers who take longer to achieve the same amount of output as others are less likely to be promoted.

To see if a similar effect exists in our data, we investigate whether female bankers perform differently than male bankers, and whether these differences can explain the gender promotion gap. Table 4 reports the results of our first regression. The outcome variable in columns 1 and 2 of Table 4 is $\#\text{Deals}_{i,t}$, the total number of loans underwritten by banker i up to year t. Similarly, in columns 3 and 4 the outcome variable is $\#\text{Clients}_{i,t}$, the total number of clients in a banker's portfolio up to year t.

- Table 4 -

Column 1 shows the results from the most basic specification, controlling only for bank-times-year fixed effects, banker i's tenure at the bank, and the squared tenure term. Effectively we are comparing the average performance of men and women who have been working for a similar amount of time at the same bank, at the same time. If women are skipped for promotions and under-represented among senior ranks because of lower performance, the coefficient on the female indicator should be negative. However, we find in column 1 that women close, if anything, around 10% more deals relative to men. This coefficient remains positive, but becomes statistically insignificant once we introduce bank-times-year-times-state fixed effects in column 2.

In columns 3 and 4, we repeat these tests but change the outcome variable to the number of clients rather than the number of loans, as an alternative measure of banker output. The number of underwritten loans can be a function of the number of lending relationships held by bankers, the extensive margin, or the intensity of these relationships, the intensive margin. The tests on the number of clients effectively isolate the quantity of relationships from their quality (intensity). Our results remain essentially unchanged in these specifications - the coefficient on female bankers is positive, meaning that women have a relationship portfolio that is around 10pp larger compared to men, although it shrinks by about half once we introduce the tightest set of bank-state-year fixed effects.

In the Internet Appendix, in Table A2, we repeat these tests with two further measures of output, aggregate loan volume, as well as loan volume per deal. We estimate the same

set of specifications with increasingly tight fixed effects as in Table 4. These tests consistently show positive and statistically significant coefficients on the female indicator across the specifications. Women generate about 16% higher loan volumes for their banks in total, and facilitate deals that are about $47m larger than their male colleagues working at the same bank during the same year.

Given the tournament-like nature of promotions, it could be that promotions do not occur based on absolute volumes (number of loans or clients) but rather on relative volumes within a bank. To control for this we define as an alternative measure of performance, the banker's rank within a bank during a given year. In Appendix Table A3 we confirm women's out-performance also using this performance metric.

Taken together, these results show that women perform as well as their male counterparts in terms of business quantity. If anything, they outperform in terms of their ability to generate business for their employer.

Gender differences in loan quality

If women generate these loan volumes through aggressive lending, the higher deal flow might not be beneficial to banks on a risk-adjusted basis. In Table 5 we utilize two measures of loan performance to assess whether women make worse lending decisions.

- Table 5 -

In columns 1 and 2, we look into downgrades of borrowers' credit ratings, while columns 3 and 4 measure loan performance as eventual defaults in the five years following loan origination, that is, during the average maturity of loans in our sample. These measures are easily observed and previous evidence shows that they heavily feature in bankers' performance evaluations (Gao et al., 2020). For each measure, we estimate one model with bank-times-year fixed effects, and one with bank office-times-year fixed effects. Across all four specifications we find no evidence of inferior loan performance of female bankers compared to their male

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colleagues working at the same bank at the same point of time. This reinforces the previous results that female bankers perform at least as well as their male colleagues.

Forward-looking measures of performance

The previous results showed that women are less likely to be promoted even if they exhibit superior *backward-looking* performance. However, after promotions, the tasks carried out by bankers might change. Thus, it is important to establish if the *forward-looking* performance of female bankers after promotions is superior to that of male bankers.

In our final set of tests in this section, we perform an "outcome test" as proposed by Becker (1957, 1993) to test the relationship between promotions, gender, and future performance. To build intuition, suppose men are promoted at a higher frequency than women for reasons unrelated to their performance on the job, that is, due to what economists refer to as "animus" (Becker, 1957). Then, if one would compare two randomly promoted bankers, the female banker should outperform her male colleague. In reality, observed promotion decisions are highly endogenous and based on a multitude of factors. In all likelihood, the animus motive should apply, if at all, only to promoted workers at the margin. Therefore, we can test for the role of animus using an exogenous shock to the promotion likelihood of bankers and compare the performance of male and female bankers at the margin.

To do so, we leverage the same technique implemented in Benson et al. (2019). We infer the marginal effect of promotions using the local average treatment effects (LATE) recovered from instrumental variable regressions. As in Benson et al. (2019) and Huang et al. (2022), we exploit variation in promotion likelihood induced by the business cycle to identify the parameters in this test using 2SLS estimation. Specifically, we estimate a first stage regression in which we instrument for the individual promotion likelihood of a banker into a senior role with the leave-one-out average promotion likelihood across all other locations of the same bank at the same point in time. Similar to Benson et al. (2019), we only further include tenure and tenure squared in these regressions. In the second stage, we

estimate the effect of the instrumented promotion likelihood on performance.

We use this setup to explore two measures of "performance" of marginally promoted bankers. Unlike in other roles, such as sales or mortgage brokerage (Benson et al., 2019; Huang et al., 2022), in our sample, there is not necessarily a distinct break in the responsibilities of bankers as they get promoted. Due to the nature of our data, any banker we observe is already relatively "senior", with many years of working experience. As such, as bankers get promoted further up the chain many of their tasks remain the same. Hence, on one hand, it makes sense to continue measuring their *individual* performance as the number of loans they underwrite. On the other hand, it is conceivable that bankers that move up the chain take on more broad responsibilities, managing the team of their subordinates rather than making deals themselves. To capture this effect, we follow Benson et al. (2019) and Huang et al. (2022) and create a measure of *managerial* performance. To do so, we limit our sample to only the most senior bankers for each bank, state, and year, that is, bosses. We then calculate managerial performance as the total number of deals underwritten by all subordinates of those bosses. In addition, again following Benson et al. (2019), we adjust these deal volumes using bank-by-year and office fixed effects. That is, we consider the managerial performance of a manager as the abnormal performance of their subordinates relative to the rest of the bank and relative to the office itself. This adjustment takes care of a range of confounding effects, including business cycle fluctuations, overall bank performance, or location-specific effects.

We then estimate the 2SLS systems to identify the effect of promotion on both individual- and managerial performance. In each case, we run the tests once for men, and once for women. We previously found that women are less likely to be promoted compared to men. The Becker outcome test predicts that, if the lower promotion rate of women results from statistical discrimination, we should observe that, on the margin, a man that is promoted

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will perform as well as a woman that would have been promoted in his stead.[20] If the lower promotion rate results from animus, or taste-based discrimination, women should outperform.

- Table 6 -

We begin with *individual* performance. The results in columns 1 and 2 Table 6 show that marginally promoted women outperform marginally promoted men in terms of the number of deals they underwrite individually. Interestingly, both the coefficient for men and women are negative, meaning that bankers underwrite fewer deals post-promotion. There are multiple explanations for this phenomenon. First, it could be that marginal promotions are the result of cyclical upswings. Some bankers get promoted during random booms and, as this tailwind subsides, their performance falls. Alternatively, the negative coefficients could be evidence of an increased managerial role of bankers.

In columns 3 and 4, we examine the *managerial* performance of marginally promoted bankers. To do so, we designate for each bank, location, and year the most senior banker based on titles as the local manager.[21] We then use the same IV setup as in columns 1 and 2 to estimate the effect of marginally promoted men and women on the performance of their employees.

The coefficient of promotion on managerial performance for women is large, positive, and statistically significant. On the other hand, the coefficient for men is actually negative and significant. As in Benson et al. (2019) these measures are normalized residuals of managerial performance and their magnitudes do not lend themselves to an easy interpretation, yet directionally these results clearly show that marginally promoted women outperform

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[20]That is, the marginal man closes fewer deals than a comparable woman prior to the promotion but has the same post-promotion productivity. This outcome would follow from statistical discrimination if women had a comparative advantage compared to men at lower ranks but not senior ranks.

[21]Most banks only have a single office per state out of which commercial bankers operate. For those banks with offices in more than one city, we aggregate them on the state level. In case there are multiple bankers with the same title, we choose the one that has a longer tenure at the bank. We drop bank-state pairs where we cannot assign a unique banker in the most senior rank.

marginally promoted men. In other words, the Becker outcome test is inconsistent with rational equilibrium statistical discrimination, and consistent with animus.

Across all four specifications we observe a high first stage Kleibergen Paap Wald F statistic of about 30 for men, alleviating concerns about weak instruments. The tests on the female sample necessarily have weaker power since the sample is only a fraction of that for men. The first stage F for individual performance still reaches a value of 11 in column 1, yet the when we restrict the sample to bosses in column 3 the first stage F falls to just 4, which warrants caution in interpreting this result.

3.3 Is the gender promotion gap personal or institutional?

Next, we investigate whether the nature of the gender promotion gap is institutional or personal. If we try to explain or predict the gender gap at a specific office at a certain point of time, is it more informative to know which bank is employing a worker, or is it more informative to know who is the supervisor at that location?

We begin our analysis by separately estimating the explanatory power of individual bankers as opposed to institutional factors, i.e., the banks. We formally measure gender gaps in titles as the difference between the number of male and female senior employees at a bank office, scaled by the total number of senior bankers working at the office. The gender gap ranges from -1 (only female senior bankers) to +1 (only male senior bankers). The gender gap in promotions is computed analogously, using the number of promotions to senior positions instead of the number of bankers in senior roles. We then leverage the Abowd et al. (1999) (AKM) methodology, which allows us to extract fixed effect estimates of individuals, even for those that never change employers. We then report the explanatory power, that is, their contribution to explaining the variance in the gender promotion gap, in Figure 5.[22]

- Figure 5 -

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[22]A detailed table of the estimates upon which Figure 5 is based are presented in Appendix Table A4.

Our estimates suggest that bankers explain 50% of the variation in seniority between men and women, and 15% of the variation in the promotion gap. Individual bankers explain about three to five times as much variation as do institutions. These results imply that people are more important in explaining gender differences than employers.

These AKM fixed effect results show that bankers exhibit a consistent style throughout their career. They do, however, not answer the question of whether this is because bankers shape the culture of offices they work in *after they join*, or whether they match into offices that exhibit a similar gender pay gap as their previous employer *before they join*. In other words, is it assortative matching that drives these persistent effects or is there an interplay between bankers and their environment?

We begin by asking if bankers exhibit assortative matching similar to the "matching on misconduct" documented among financial advisors. Egan et al. (2019) find that financial advisors with a history of misconduct tend to gravitate towards employers with above average misconduct behavior. In Table 7 we present results from a similar analysis in our setting.

- Table 7 -

We follow Egan et al. (2019) and create a sample of job switchers, collecting information on both their own gender gap history and that of their future location.[23] We then estimate regressions of the historic gender gap in a banker's new office on the banker's gender gap in their old office. As in Egan et al. (2019), we control for "old" bank-times-year fixed effects. Effectively we compare two bankers leaving the same employer, facing the same outside labor market, and ask if bankers with a track record of working in offices with larger gender gaps gravitate to offices with a similar gap.

Columns 1 and 2 of Table 7 show that there is strong assortative matching between bankers and locations. Bankers with a history of working in offices in which women had a

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[23]Note that these tests greatly limit our sample size, particularly in the regressions focusing on bosses only. As a result, we only have strong power for the static gender gaps, since dynamic promotion gaps further restric tour sample to only those years in which we observe at least one promotion in our already restricted sample. However, in unreported results we find qualitatively similar results for dynamic promotion gaps as we do for these static title gaps.

particularly low representation among senior ranks will sort into similar offices or banks in the future. The coefficient in column 1 is more than twice as large as that in column 2, implying that assortative matching happens predominantly within banks across offices, as opposed to across banks. In columns 3 and 4, we repeat these tests but keep only the most senior banker in each office, i.e., the bosses. We find substantially stronger assortative matching in this setting, implying that bosses match more strongly on gender gaps than the average banker in our sample. This finding makes sense intuitively, since bosses are at the head of each office and have a larger role to play in setting gender gaps, which means their historic gender gap reflects more of a personal characteristic rather than just an environmental one. Similar to before, the effects are stronger when measuring the future gender gap at the bank-office, rather than global bank level.

In an interesting complimentary analysis in Appendix Table A5, we show that this matching does not just exist within the banker's own work environment, but extends to his or her interactions with people *outside* their home bank. We utilize the fact that almost all major loans are syndicated, that is, reflect collaborations across various banks. We then construct, for each banker, a measure of how many women they have previously interacted with during co-syndication. We find a strong, positive association between a banker's collaborations outside their bank during syndication with smaller gender promotion gaps within their own bank.[24]

The previous set of tests shows that there is matching of bankers and offices based on *ex-ante* gender promotion gaps. However, there could also be an *ex-post* convergence of locations towards the banker's natural tendency to promote women. Bankers might not just gravitate towards offices that share their preferences regarding promoting female bankers, but, once they join these offices, they further draw the culture of their workplace towards their personal preferences and attitudes. In our final tests in this section, we investigate this

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[24]One concern could be that both of these effects are driven by genders sorting into banking with different industries, although Figure A1 shows relatively few gender differences across industries. Reassuringly, this result holds almost unchanged when we control for each banker's industry. Thus, our inference is not driven by men and women sorting into different industries.

ex-post convergence.

- Table 8 -

Importantly, we saturate these models with both bank-times-state (i.e., office) and year fixed effects. Effectively, we compare the gender gap within the same office over the years, compared to other offices at the same point in time. The results in Table 8 imply a very strong response of local gender promotion gaps to a new banker joining. As before, gender gaps at bank offices react more than those at the bank level, and bosses joining draw stronger responses than more junior bankers. Both of these results are consistent with bosses having a larger impact than juniors, and their impact is local rather than global.

3.4   Sources of the gender promotion gap

In our final set of results, we investigate potential drivers of, and solutions for the gender gap. We consider both explanations consistent with this under-representation being an equilibrium outcome of voluntary choices (e.g., Azmat and Ferrer, 2017) as well as various forms of discrimination (Becker, 1957).

Family responsibilities

Women are still responsible for a disproportional degree of responsibilities in the home and child care, which can be related to weaker career outcomes both due to lower ex-ante aspiration Azmat and Ferrer (2017) or during times of shocks (Kruger et al., 2020; Du, 2020). Our first set of tests in this section investigates channels through which family obligations can explain the gender gaps we observe in our setting.

An intuitive way to accelerate career growth is to switch to a new employer. However, the prior literature has identified that, compared to men, women are under-prioritizing career opportunities and instead emphasize location and proximity to their family when choosing employers (Blackaby et al., 2005). We test this conjecture in column 1 of Table 9.

- Table 9 -

The outcome variable in these tests is our indicator for whether banker i is promoted to a senior position in year t. The main coefficients of interest are *Banker switched*, an indicator for whether banker i switched their employer in year t, and its interaction with *Female*, an indicator for whether banker i is female. The bank-times-state-times-year fixed effects absorb all time invariant office characteristics, meaning we only draw inference from changes in these laws over time.

Consistent with the idea that switching employers often accelerates careers, we estimate a sizable 4.6pp increase in promotion likelihood in the year following a switch for the average banker. However, the interaction with *Female* shows that switching employers accelerates the careers of men more than those of women. The interaction is -4.0pp, which almost fully reverses the positive unconditional coefficient. Taken together, these estimates imply that switching employers indeed accelerates career growth, however women miss out on this effect.

A spirited political debate surrounds the value of government-provided support for women during pregnancy and child care. To test if such provisions matter in our setting, we collect data on state-level provisions that strengthen women's rights during pregnancy and whether states require mandatory maternity leave. The hypothesis is that these provisions can lower the burden on women (Bennett, Erel, Stern, and Wang, 2020). However, the results in columns 2 and 3 of Table 9 show economically large, negative coefficients for the interaction terms.

There are multiple potential explanations for the insignificance of these findings. First, the legal stipulations we examine here focus on pregnancy and early maternity. However, the bankers in our sample are relatively senior and often older. It is possible that female bankers in our sample have already established families and cannot benefit from these laws. Second, given that the bankers in our sample are at the top of the income distribution, the direct costs of child bearing are unlikely to be a binding constraint in the decision to have a family. Therefore, the introduction of paid maternity leave might have only a limited effect.

Statistical, implicit, and taste-based discrimination

A different, but not mutually exclusive channel that can explain the gender gap is discriminatory behavior. In particular, the strong association of individual managers with larger gender gaps in Section 3.3 could reflect discriminatory behavior by superiors.

There are three main forms of discrimination and they predict a range of different solutions to tackle them (Becker, 1957). In this next set of tests, we investigate relationships between the gender promotion gap and factors that should alleviate it under different forms of biases. The aim is to understand the root causes of the gender gap in promotions by observing circumstances that amplify or attenuate it.

We begin our analysis looking at potential *statistical discrimination*. While our results imply that women on average outperform their male colleagues in our setting, we cannot rule out that there are other, to the econometrician unobservable, dimensions of performance in which women under-perform men. If senior bankers expect women to be less competent than their male colleagues, the gender promotion gap could reflect the equilibrium outcome from their promotion decision.(Benson et al., 2021; Holub and Drechsel-Grau, 2021). One way for women to overcome this bias is to signal high ability through hard credentials.

We address this question empirically in the first two columns of Table 10. We collect data on bankers' education credentials through from an online career network. As a first proxy, we record if a banker's undergraduate institution was a top school. As an alternative, women could signal their ability through obtaining an MBA degree. We then estimate our model including a interactions between these indicators and our female indicator. If hard credentials help overcome statistical discrimination, the interaction terms between *Female* and our two proxies for hard credentials should be positive. However, we find that estimators for both interaction terms are negative and insignificant.

- Table 10 -

We then turn our attention to *implicit discrimination*, that is, an unconscious bias against

women (Bertrand et al., 2005). If the gender promotion gap was driven by these implicit biases, it might be alleviated through a strong presence of women among banks' senior leadership (Tate and Yang, 2015). Indeed, the literature shows that the presence of women in leading roles of the organization can help shrink the gender promotion gap in other contexts(Chattopadhyay and Duflo, 2004). In columns 3 and 4 of Table 10 we estimate regressions of the indicator for being promoted to a senior position on the interaction between *Female* and an indicator variable for the presence of female board members (column 3) or a female CEO or CFO (column 4). The interaction coefficients in both specifications are negative and statistically insignificant, providing no evidence that a gender diverse leadership shrinks the gender promotion gap in our setting.[25]

In our final test of implicit discrimination, we define leadership on the local, rather than the bank-wide level. Specifically, for each office and year, we identify the set of senior bankers and ask if at least one senior is female. In column 5 we find that the presence of women on the local senior level has a very strong, positive impact on the chance of junior women to be promoted. In the last column, we verify that our inference remains virtually unchanged when looking at the fraction of senior employees as continuous variables, rather than indicators for the presence of any women.

The final remaining explanation for the persistent gender promotion gap is *taste-based discrimination*, or animus. A large part of our previous results – particularly the superior performance of women both on the individual and managerial level, and the strong personal component of individual bankers' revealed preferences for gender gaps – are consistent with such an effect. In this last set of tests, we exploit major gender discrimination lawsuits against banks as shocks to institutional pressure against discrimination. The hypothesis is that banks will crack down on discriminatory behavior following a major lawsuit.[26]

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[25]Note that we have limited power in these specifications, and the estimate in column 4 is positive and economically large. This test has low power since only 4% of our sample features a female executive and no bank had a female CFO or CEO before 2006.

[26]Starting in the mid-2000s, banks settled a number of high-profile lawsuits filed by female bankers who were alleging discriminatory practices, including surrounding promotion decisions. One stated objective of high monetary awards in such lawsuits is to act as a deterrent against future wrongdoing.

- Table 11 -

To test this conjecture, we obtain data on high-profile workplace discrimination lawsuits against banks from Good Jobs First, a non-profit organization. The first column of Table 11 identifies banks in a two-year window centered around a lost or settled workplace gender discrimination lawsuits and asks if settlements of these lawsuits were associated with a decrease in the gender-promotion gap between female and male bankers. We find that, in the years when a bank settles a gender discrimination lawsuit, women are significantly more likely to get promoted to senior positions in targeted banks.[27]

Column 2 asks if this effect is transitory or permanent. Specifically, we define dummies for one, two, and three or more years after the lawsuit was settled and interact them with *Female banker*. We find economically sizeable, positive coefficients for the first two years following the suit or settlement, although the estimates are statistically insignificant at conventional levels. Three years after the suit, coefficients become economically close to zero, which implies that the effect of lawsuits is strong, but transitory.

Are these results specific to gender, or do they capture general effects from workplace discrimination lawsuits more broadly? In column 3, we replace our indicator for losing a workplace discrimination lawsuit specific to gender with an indicator for losing a different type of workplace discrimination lawsuit, for example, race or religion. Interestingly, we find that losing a lawsuit for discrimination on other dimensions than gender is not associated with higher rates of promotion for women. In fact, the coefficient estimate is highly negative at -3.0pp, and statistically significant. While this is only an indicative result, it could imply that banks trade off promotions for women with those of other underrepresented groups.

In sum, these results speak not only in favor of the presence of taste-based discrimination but also against a "voluntary" explanation of our findings. If women chose to abstain

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[27]We include the year before the lawsuit is settled to account for the likely presence of preemptive behavior of banks. Litigating or settling high profile lawsuits often take years to resolve and it likely becomes clear to the bank that is going to lose in advance of the actual settlement. For example, *Chen-Oster v. Goldman Sachs & Co.* was a major lawsuit against a bank alleging discriminatory promotion practices which took 8 years from initial complaint to ruling.

from being promoted, for example, due to family obligations, gender discrimination lawsuits against their employers should not impact promotion likelihoods.

4   Conclusion

Economists have made a lot of progress in recent years to answer calls by policymakers and society to explain gender gaps in the workforce. We contribute to this important question by focusing on the under-studied area of highly skilled labor in the financial sector, a particularly relevant sector that has attracted scrutiny due to wide gender discrepancies.

Our unique setting allows us to observe the employment history, performance, hierarchical progress, and work environment of bankers. We find women to be substantially under-represented among senior ranks, a state that is perpetuated through a gender gap in promotions. Women out-perform men at the same bank, at the same point in time, both in terms of individual and managerial performance. However, they are promoted less frequently after hitting a glass ceiling toward senior ranks.

One particularly novel insight from our paper is the important role of individual supervisors. Individuals on the local level shape the gender promotion gap and we observe both assortative matching of these bankers to offices based on ex-ante gender gaps, as well as ex-post convergence of offices towards the historic gender gap of bankers that join as new bosses. The amplified role of individual supervisors in our setting could be a feature of the complex nature of the tasks performed by bankers, and be informative for other high-skill, complex job settings. While legislation mandating paid family leave or raising legal protections against discrimination during pregnancy effectively reduces gender gaps for the average worker, we find no evidence that such measures are effective at the top end of the skill and income distribution. The most effective predictors for reducing the gap seem to be the presence of women in local leadership and pressure from gender discrimination lawsuits.

Our results are most consistent with a degree of animus against women exhibited by

individual bankers. One important question that remains is how bankers that exhibit animus can remain in the workforce. Why do banks not part ways with these employees? Is the out-performance of these bankers making up for the losses caused by under-promoting women? And why do discrimination lawsuits have only a temporary effect? Our results on assortative matching point towards one partial explanation, but future work is needed to understand the original source of these biases, and the mechanisms through which they perpetuate, and to uncover potential solutions.

References

Abowd, J. M., Kramarz, F., Margolis, D. N., 1999. High wage workers and high wage firms. Econometrica 67, 251–333.

Adams, R., Lowry, M., 2022. What's good for women is good for science: Evidence from the american finance association. The Review of Corporate Finance Studies .

Adams, R. B., Ferreira, D., 2009. Women in the boardroom and their impact on governance and performance. Journal of Financial Economics 94, 291–309.

Adams, R. B., Kräussl, R., Navone, M., Verwijmeren, P., 2021. Gendered prices. The Review of Financial Studies 34, 3789–3839.

Azmat, G., Ferrer, R., 2017. Gender gaps in performance: Evidence from young lawyers. Journal of Political Economy 125, 1306–1355.

Beck, T., Behr, P., Guettler, A., 2013. Gender and banking: Are women better loan officers? Review of Finance 17, 1279–1321.

Becker, G. S., 1957. The economics of discrimination. University of Chicago Press.

Becker, G. S., 1993. Nobel lecture: The economic way of looking at behavior. Journal of Political Economy 101, 385–409.

Bennett, B., Erel, I., Stern, L. H., Wang, Z., 2020. Paid leave pays off: The effects of paid family leave on firm performance. Tech. rep., National Bureau of Economic Research.

Benson, A., Li, D., Shue, K., 2019. Promotions and the peter principle. The Quarterly Journal of Economics 134, 2085–2134.

Benson, A., Li, D., Shue, K., 2021. "Potential" and the gender promotion gap. Working Paper .

Bertrand, M., 2018. Coase lecture–the glass ceiling. Economica 85, 205–231.

Bertrand, M., Chugh, D., Mullainathan, S., 2005. Implicit discrimination. American Economic Review 95, 94–98.

Bertrand, M., Goldin, C., Katz, L. F., 2010. Dynamics of the gender gap for young professionals in the financial and corporate sectors. American Economic Journal: Applied Economics 2, 228–55.

Bircan, C., Friebel, G., Stahl, T., 2021. Knowledge teams, careers and gender. Tech. rep., Working Paper.

Blackaby, D., Booth, A. L., Frank, J., 2005. Outside offers and the gender pay gap: Empirical evidence from the UK academic labour market. The Economic Journal 115, F81–F107.

Blau, F. D., Kahn, L. M., 2017. The gender wage gap: Extent, trends, and explanations. Journal of Economic Literature 55, 789–865.

Bocart, F., Gertsberg, M., Pownall, R. A., 2018. Glass ceilings in the art market. Working Paper .

Booth, A. L., Francesconi, M., Frank, J., 2003. A sticky floors model of promotion, pay, and gender. European Economic Review 47, 295–322.

Bureau of Labor Statistics, 2019. Women had higher median earnings than men in relatively few occupations in 2018. The Economics Daily .

Bushman, R. M., Gao, J., Martin, X., Pacelli, J., 2021. The influence of loan officers on loan contract design and performance. Journal of Accounting and Economics 71, 101384.

Card, D., DellaVigna, S., Funk, P., Iriberri, N., 2020. Are referees and editors in economics gender neutral? The Quarterly Journal of Economics 135, 269–327.

Chattopadhyay, R., Duflo, E., 2004. Women as policy makers: Evidence from a randomized policy experiment in india. Econometrica 72, 1409–1443.

Cullen, Z., Perez-Truglia, R., 2019. The old boys' club: Schmoozing and the gender gap. American Economic Review, Conditionally accepted .

Delis, M., Hasan, I., Iosifidi, M., Ongena, S., 2020. Gender, credit, and firm outcomes. Journal of Financial and Quantitative Analysis. .

Du, M., 2020. Locked-in at home: Female analysts' attention at work during the COVID-19 pandemic. Working Paper .

Egan, M., Matvos, G., Seru, A., 2019. The market for financial adviser misconduct. Journal of Political Economy 127, 233–295.

Egan, M. L., Matvos, G., Seru, A., 2021. When Harry fired Sally: The double standard in punishing misconduct. Tech. rep.

Ewens, M., Townsend, R. R., 2020. Are early stage investors biased against women? Journal of Financial Economics 135, 653–677.

Field, L. C., Souther, M. E., Yore, A. S., 2020. At the table but can not break through the glass ceiling: Board leadership positions elude diverse directors. Journal of Financial Economics 137, 787–814.

Frattaroli, M., Herpfer, C., 2021. Information intermediaries: How commercial bankers facilitate strategic alliances. Journal of Financial and Quantitative Analysis, Forthcoming .

Gao, J., Kleiner, K., Pacelli, J., 2020. Credit and punishment: Are corporate bankers disciplined for risk-taking? The Review of Financial Studies 33, 5706–5749.

Getmansky Sherman, M., Tookes, H., 2021. Female representation in the academic finance profession. Journal of Finance, Forthcoming .

Goldin, C., 2020. Journey across a century of women. NBER Feldstein Lecture 3, 1–7.

Goldin, C., Katz, L. F., 2008. Transitions: Career and family life cycles of the educational elite. American Economic Review 98, 363–69.

Goldsmith-Pinkham, P., Shue, K., 2020. The gender gap in housing returns. The Journal of Finance, *forthcoming* .

Grabner, I., Moers, F., 2013. Managers' choices of performance measures in promotion decisions: An analysis of alternative job assignments. Journal of Accounting Research 51, 1187–1220.

Herpfer, C., 2021. The role of bankers in the U.S. syndicated loan market. Journal of Accounting and Economics 71, 101383.

Holub, F., Drechsel-Grau, M., 2021. Gender gaps and the role of bosses. Working Paper .

Hospido, L., Laeven, L., Lamo, A., 2022. The gender promotion gap: Evidence from central banking. Review of Economics and Statistics 104, 981–996.

Huang, R., Mayer, E. J., Miller, D. P., 2022. Gender bias in promotions: Evidence from financial institutions. Working paper .

Jaekel, A., St-Onge, E., 2016. Why women aren't making it to the top of financial services firms. Harvard Business Review 16.

Kleven, H., Landais, C., Posch, J., Steinhauer, A., Zweimüller, J., 2020. Do family policies reduce gender inequality? evidence from 60 years of policy experimentation. Working paper .

Kruger, S., Maturana, G., Nickerson, J., 2020. How has covid-19 impacted research productivity in economics and finance? Available at SSRN 3745226 .

Lagaras, S., Marchica, M.-T., Simintzi, E., Tsoutsoura, M., 2022. Women in the financial sector. Available at SSRN 4098229 .

Lins, K. V., Roth, L., Servaes, H., Tamayo, A., 2021. Sexism, culture, and firm value: Evidence from the harvey weinstein scandal and the# metoo movement. University of Alberta School of Business Research Paper .

Montoya, A. M., Parrado, E., Solís, A., Undurraga, R., 2020. Bad taste: Gender discrimination in the consumer credit market. Working Paper .

Ongena, S., Popov, A., 2016. Gender bias and credit access. Journal of Money, Credit and Banking 48, 1691–1724.

Piketty, T., Saez, E., Zucman, G., 2018. Distributional national accounts: Methods and estimates for the United States. The Quarterly Journal of Economics 133, 553–609.

Raute, A., 2019. Can financial incentives reduce the baby gap? Evidence from a reform in maternity leave benefits. Journal of Public Economics 169, 203–222.

Reuben, E., Sapienza, P., Zingales, L., 2022. Preferences for competition and the gender gap among young business professionals. Tech. rep., Working Paper.

Simintzi, E., Xu, S.-J., Xu, T., 2022. The effect of childcare access on women's careers and firm performance. Working Paper .

Tate, G., Yang, L., 2015. Female leadership and gender equity: Evidence from plant closure. Journal of Financial Economics 117, 77–97.

Zingales, L., 2000. In search of new foundations. The Journal of Finance 55, 1623–1653.

Figures

Figure 1: Example of simple signature page with a single bank
The red circles indicate information extracted by the text search algorithm. This information includes the name and role of the bank, as well as the name and title of the signatory. The names of the banker, corporation, and corporate executive are anonymized for the sake of privacy. The prior literature offers additional, detailed descriptions of the data, as well as extensive quality checks (e.g. Herpfer, 2021; Bushman et al., 2021).

Figure 2: Active bankers over time

The figure shows the total number of active bankers in the sample by gender. Women are depicted by the red line and men are depicted as the blue line. Bankers are considered active for all years between the first and last deal they sign, resulting in a mechanical decrease of active bankers towards the end of the sample.
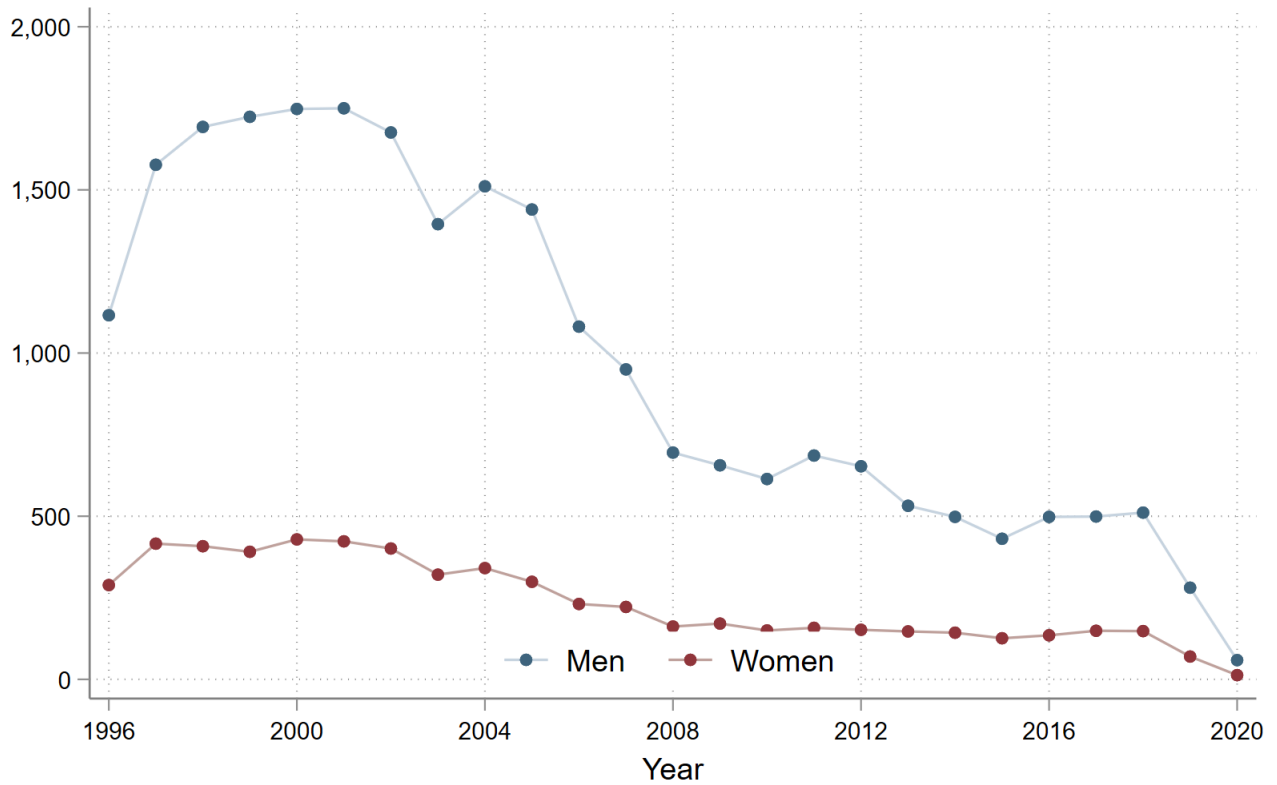
Figure 3: Share of female bankers by title
The figure shows the fraction of female bankers by title. The horizontal line depicts the fraction of female bankers in the overall sample.

Female banker share
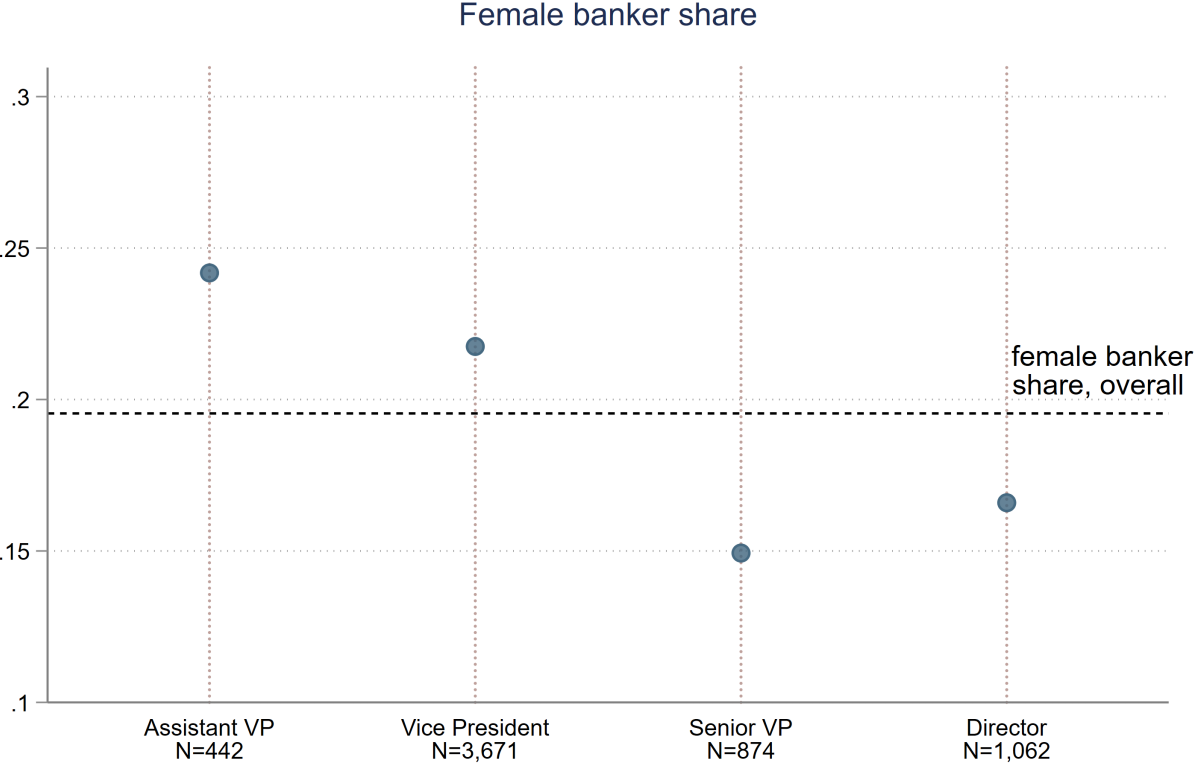
Figure 4: Gender promotion gap over time

This figure plots the frequency of promotions to senior positions (Senior VP and Director) over time and by gender. The red bars show the distribution for female bankers, whereas the blue ones show male bankers. Both series are scaled by the total number of active male and female bankers.

Promotion rates over tme
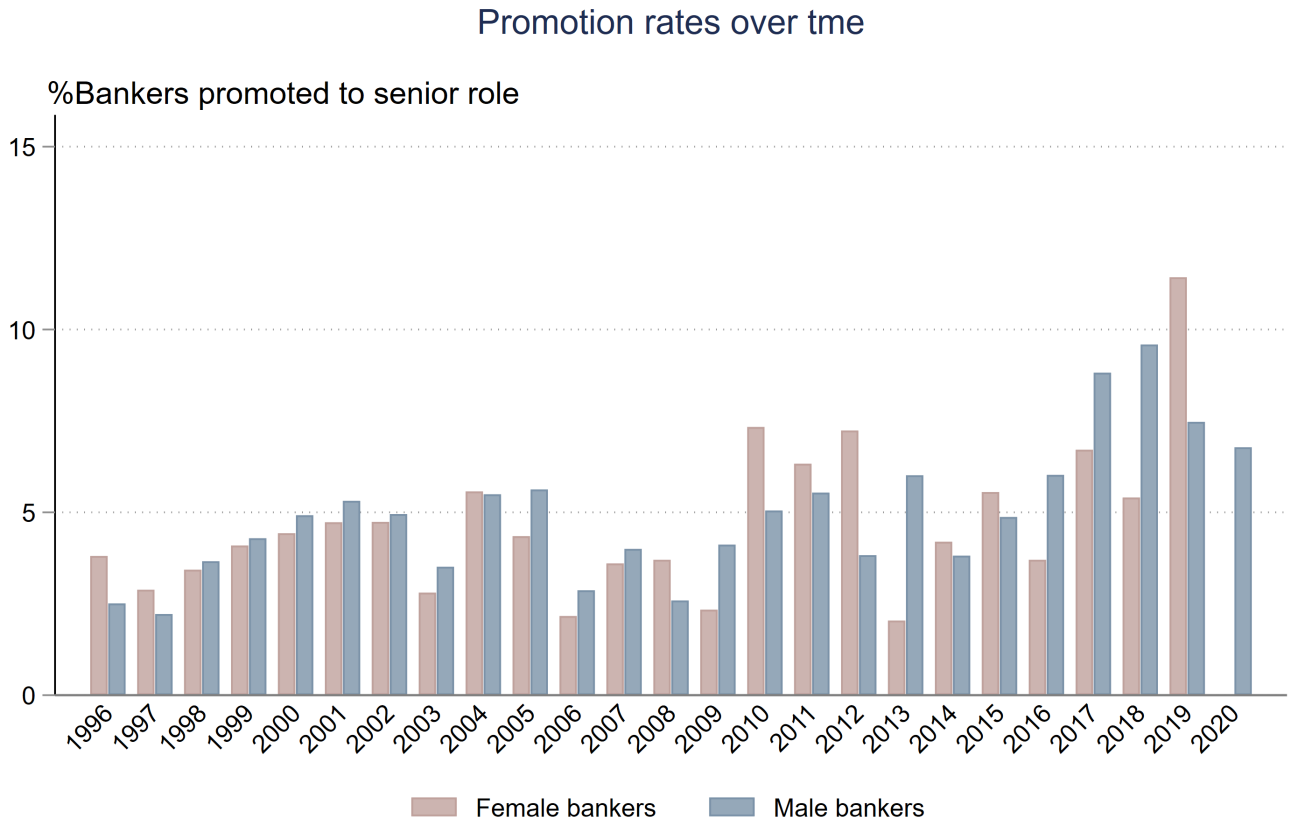
Figure 5: Variation in bank-branch gender gaps

This figure plots the fraction of the variation in bank-branch gender gaps that is explained by banker, bank, and year fixed effects, respectively as well as the unexplained portion of the variation. In the upper panel, gender gaps are computed as differences in titles, whereas, in the lower panel, they are measured as differences in promotions. Fixed effects are estimated following (Abowd et al., 1999).
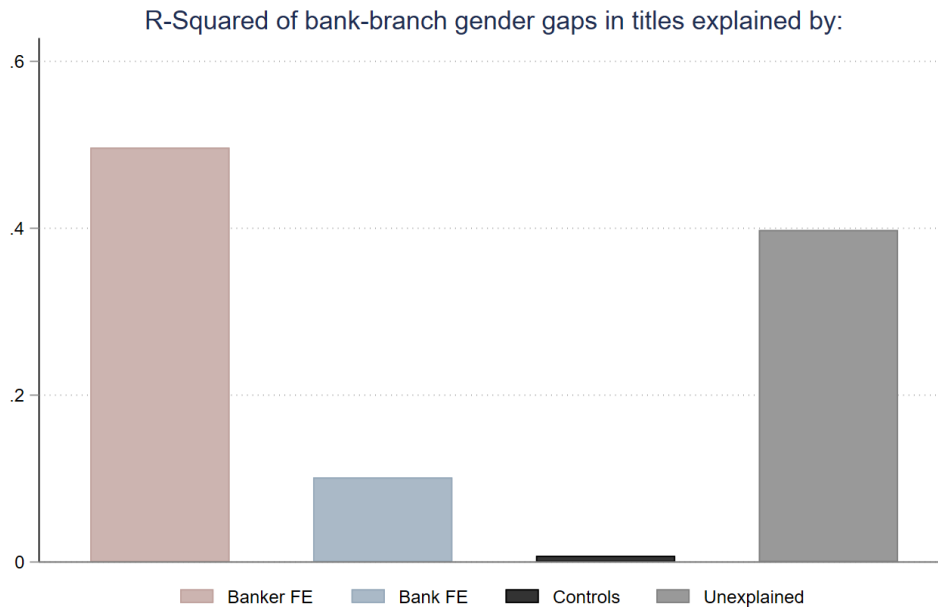
(a) Gender gaps in titles
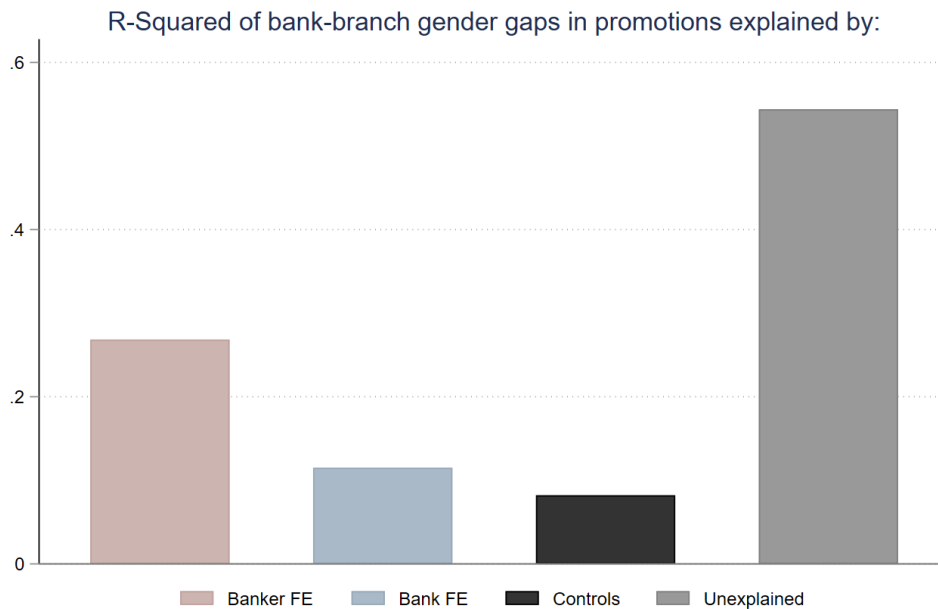
(b) Gender gaps in promotions

Tables

Table 1: Summary statistics - Bankers' personal relationships
This table shows summary statistics of the sample variables relating to bankers' client portfolio. Panel A reports variables within an employment spell, whereas Panel B shows variables across all employers of a banker. All Panels cover the years from 1996 to 2020. The bankers' employment information and their client portfolio are retrieved from EDGAR. Deal volume information is from Dealscan while education and banker location stem from a professional networking website. Variables are defined as in Appendix Table A1.

Panel A: Within banks

	N	p25	mean	p50	p75	sd
#Clients - Total	30,169	1.00	3.05	2.00	4.00	3.57
#Clients - Large	30,169	1.00	2.27	1.00	3.00	3.03
#Clients - Small	30,169	0.00	0.76	0.00	1.00	1.15
#Clients - Female Board	30,169	0.00	0.59	0.00	1.00	1.06
#Deals - Total	30,169	1.00	3.90	2.00	4.00	4.96
#Deals - Large	30,169	1.00	2.92	1.00	3.00	4.20
#Deals - Small	30,169	0.00	0.94	0.00	1.00	1.53
#Deals - Female Board	30,169	0.00	0.76	0.00	1.00	1.41
Deal volume (USDmm) - Total	22,145	300.00	2,532.26	950.00	2,585.00	4,445.51
Deal volume (USDmm) per deal	22,145	230.00	858.98	531.25	1,050.00	1,016.13
Tenure (yrs)	30,169	1.00	3.41	2.00	5.00	3.33

Panel B: Across banks

	N	p25	mean	p50	p75	sd
#Clients - Total	30,169	1.00	4.10	2.00	5.00	4.97
#Clients - Large	30,169	1.00	3.11	1.00	4.00	4.29
#Clients - Small	30,169	0.00	0.95	1.00	1.00	1.39
#Clients - Female Board	30,169	0.00	0.79	0.00	1.00	1.40
#Deals - Total	30,169	1.00	5.22	2.00	6.00	6.68
#Deals - Large	30,169	1.00	4.00	2.00	5.00	5.89
#Deals - Small	30,169	0.00	1.20	1.00	2.00	1.88
#Deals - Female Board	30,169	0.00	1.03	0.00	1.00	1.90
Deal volume (USDmm) - Total	23,759	355.00	3,043.67	1,150.00	3,248.75	5,184.31
Deal volume (USDmm) per deal	23,759	250.00	866.03	570.62	1,083.33	971.66
Tenure (yrs)	30,169	1.00	4.26	3.00	6.00	4.08
Banker switched (%)	30,169	0.00	11.29	0.00	0.00	31.64
Banker characteristics						
Female banker (%)	30,169	0.00	19.54	0.00	0.00	39.65
Promotion (%)	30,169	0.00	5.67	0.00	0.00	23.14
Promotion to senior (%)	30,169	0.00	4.49	0.00	0.00	20.72
Junior VP (%)	30,169	0.00	5.95	0.00	0.00	23.66
VP (%)	30,169	0.00	54.54	100.00	100.00	49.79
Senior VP (%)	30,169	0.00	19.09	0.00	0.00	39.30
Director (%)	30,169	0.00	20.42	0.00	0.00	40.31
MBA (%)	8,752	0.00	52.65	100.00	100.00	49.93
Ivy League (%)	8,752	0.00	19.09	0.00	0.00	39.31

Panel C: t-test of banker's characteristics by gender

	Females	Males	Δ	p-Values	N
#Clients - Total	4.43	4.02	0.41	0.00	30,169
#Clients - Large	3.40	3.04	0.36	0.00	30,169
#Clients - Small	0.99	0.94	0.04	0.03	30,169
#Clients - Female Board	0.94	0.76	0.18	0.00	30,169
#Deals - Total	5.61	5.12	0.49	0.00	30,169
#Deals - Large	4.37	3.91	0.46	0.00	30,169
#Deals - Small	1.23	1.19	0.04	0.20	30,169
#Deals - Female Board	1.22	0.98	0.24	0.00	30,169
Deal volume (USDmm) - Total	3,336.19	2,970.33	365.86	0.00	23,759
Deal volume (USDmm) per deal	893.82	859.06	34.75	0.03	23,759
Banker switched (%)	11.28	11.29	-0.01	0.99	30,169
Tenure (yrs)	4.29	4.25	0.04	0.51	30,169
Promotion (%)	5.80	5.64	0.16	0.64	30,169
Junior title	68.07	58.65	9.43	0.00	30,169
MBA (%)	52.18	52.77	-0.59	0.66	8,752
Ivy League (%)	25.39	17.48	7.92	0.00	8,752

Table 2: Seniority of bankers and gender

This table shows regressions of bankers' current title on an indicator for female bankers and performance measures. The dependent variable is an indicator for a banker being "Junior Vice President", "Vice President" (VP), "Senior VP", or "Director". Odd models include only bank-times-year fixed effects. Even models include bank-times-year-times-state fixed effects. All models control for banker performance characteristics, i.e., number of deals with large and small clients, the logarithm of total deal volume, banker tenure, and squared banker tenure. The sample covers the years from 1996 to 2020. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and banker level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Dep. var (%)	Junior VP		VP		Senior VP		Director	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female banker	2.02***	-0.21	8.28***	10.59***	-5.64***	-5.40***	-4.66***	-4.98**
	(3.51)	(-0.18)	(6.61)	(4.28)	(-6.17)	(-3.79)	(-4.53)	(-2.28)
#Deals - Large	-0.11	-0.04	-0.19	-0.11	-0.33**	-0.28*	0.63***	0.43*
	(-1.51)	(-0.36)	(-1.05)	(-0.41)	(-2.47)	(-1.76)	(3.98)	(1.94)
#Deals - Small	-0.07	-0.41	0.24	1.38*	0.85**	0.35	-1.01**	-1.32**
	(-0.38)	(-1.69)	(0.54)	(2.01)	(2.28)	(0.75)	(-2.68)	(-2.35)
Tenure (yrs)	-0.34	-0.62*	1.48***	-0.52	-2.22***	-0.58	1.08**	1.72*
	(-1.71)	(-1.78)	(2.86)	(-0.62)	(-4.83)	(-0.84)	(2.15)	(1.82)
Tenure (yrs)^2	0.00	0.00	-0.10**	0.01	0.14***	0.03	-0.04	-0.04
	(0.13)	(0.20)	(-2.53)	(0.19)	(4.20)	(0.61)	(-1.24)	(-0.71)
Observations	30,011	8,653	30,011	8,653	30,011	8,653	30,011	8,653
R-squared	0.08	0.26	0.14	0.36	0.12	0.36	0.25	0.43
Bank×Year FE	Yes	No	Yes	No	Yes	No	Yes	No
Bank×Year×State FE	No	Yes	No	Yes	No	Yes	No	Yes

Table 3: Promotion of bankers - Glass ceiling

This table shows regressions of bankers' promotion probability by title on an indicator for female bankers and performance measures. The dependent variable is an indicator for a banker being promoted to "Vice President" (VP), "Senior VP", or "Director". Odd models include only bank-times-year fixed effects. Even models include bank-times-year-times-state fixed effects. All models control for banker performance characteristics, i.e., number of deals with large and small clients, the logarithm of total deal volume, banker tenure, and squared banker tenure. The sample covers the years from 1996 to 2020. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and banker level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Dep. var	Promotion (%) to							
	VP		SVP		Director		Any Senior	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female banker	0.20	11.47	-1.18***	-1.38**	-0.70	-0.79	-2.14***	-2.60**
	(0.05)	(0.96)	(-3.87)	(-2.64)	(-1.47)	(-1.30)	(-3.77)	(-2.75)
#Deals - Large	1.30**	0.19	-0.03	-0.04	0.19***	0.09	0.18*	0.08
	(2.25)	(0.16)	(-0.85)	(-0.72)	(3.12)	(1.47)	(2.02)	(0.87)
#Deals - Small	1.67	3.94	0.13	0.27	-0.25***	-0.24	-0.20	0.01
	(1.38)	(1.45)	(0.90)	(1.58)	(-2.96)	(-1.53)	(-1.40)	(0.03)
Tenure (yrs)	-4.87**	-4.26	-2.48***	-0.88**	-1.05***	-1.27***	-3.65***	-2.58***
	(-2.49)	(-0.47)	(-8.10)	(-2.71)	(-4.38)	(-3.22)	(-7.33)	(-4.78)
Tenure (yrs)^2	0.24*	0.18	0.13***	0.03	0.05***	0.07**	0.19***	0.13***
	(2.01)	(0.22)	(6.91)	(1.42)	(2.84)	(2.64)	(6.20)	(3.59)
Observations	833	152	11,241	4,281	14,229	5,310	11,241	4,281
R-squared	0.28	0.55	0.11	0.31	0.13	0.32	0.14	0.34
Bank×Year FE	Yes	No	Yes	No	Yes	No	Yes	No
Bank×Year×State FE	No	Yes	No	Yes	No	Yes	No	Yes

Table 4: Bankers' performance

This table shows regressions of bankers' portfolio characteristics on an indicator for female bankers and controls. The dependent variable in models 1 and 2 is the total number of deals, while models 3 and 4 use the total number of clients. Panel B breaks this down into large and small clients, as well as clients that have at least one woman on the board of directors. Models 1 and 3 include bank-times-year fixed effects. Bank-times-year-times-state fixed effects are introduced in models 2 and 4. All models control for banker's tenure and squared banker's tenure. The sample covers the years from 1996 to 2020. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and banker level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Dep. var	#Deals		#Clients	
	(1)	(2)	(3)	(4)
Female banker	0.44**	-0.11	0.36***	0.10
	(2.26)	(-0.24)	(2.76)	(0.43)
Observations	30,011	8,653	30,011	8,653
R-squared	0.45	0.52	0.46	0.52
Controls	Yes	Yes	Yes	Yes
Bank×Year FE	Yes	No	Yes	No
Bank×Year×State FE	No	Yes	No	Yes

Table 5: Bankers' performance - Credit events and female bankers

This table shows regressions of bankers' portfolio characteristics on an indicator for female bankers and controls. The dependent variable in models (1) and (2) is the number of clients that experience a credit rating downgrade in the banker's portfolio in the five years after closing a deal. Model (3) and (4) are similar but count the number of clients that default in the five years after closing a deal respectively. All models control for banker's tenure and squared banker's tenure, the number of large and small clients in the banker's portfolio and bank-times-year or bank-times-year-times-state fixed effects. The sample covers the years from 1996 to 2020. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and banker level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Dep. variable:	#Downgrades 5yrs		#Defaults 5yrs	
	(1)	(2)	(3)	(4)
	3yrs	5yrs	3yrs	5yrs
Female banker	-0.034*	-0.076	0.005	0.013
	(-1.75)	(-1.28)	(0.73)	(1.10)
#Clients - Small	0.029**	0.020	0.008**	0.007
	(2.06)	(1.00)	(2.11)	(1.55)
#Clients - Large	0.079***	0.056***	0.005***	0.001
	(16.61)	(6.37)	(3.98)	(0.61)
Observations	30,011	8,653	30,011	8,653
R-squared	0.23	0.31	0.09	0.20
Controls	Yes	Yes	Yes	Yes
Bank×Year FE	Yes	No	Yes	No
Bank×Year×State FE	No	Yes	No	Yes

Table 6: Performance of marginally promoted bankers
This table shows the performance of marginally promoted bankers. These are identified by instrumenting for Promotion (or for Promotion to Boss) using the leave-one-out mean promotion rate (or the leave-one-out mean promotion rate to Boss) at a bank as well as banker tenure and tenure squared. The dependent variable in the first two models is the standardized number of deals that a banker closed, while in the last two models, it is the estimated, de-meanded, and standardized managerial ability (Benson et al., 2019). Models 1 and 3 show results for the sample of female bankers, whereas 2 and 4 show the sample of male bankers. Models 1 and 2 further control for bank and year fixed effects. The sample covers the years from 1996 to 2020. Bankers are dropped if we are unable to find information about their location. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and banker level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Dep. variable:	Individual Performance		Managerial Performance	
	(1) Females	(2) Males	(3) Females	(4) Males
Promotion	-4.18***	-11.56***		
	(-3.16)	(-7.26)		
Promotion to Boss			3.51**	-0.71
			(2.12)	(-0.81)
Kleibergen-Paap F-statistic	10.88	29.26	3.55	29.83
Observations	2,475	9,117	1,846	6,355
Bank and Year FE	Yes	Yes	No	No

Table 7: The role of individual bankers - Assortative matching

This table presents results from a regression of gender gaps at the banker's current employer on gender gaps at the banker's previous employer. The dependent variable in models 1 and 3 is the gender gap in titles at the banker's current *branch.* In models 2 and 4, it is the *bank-wide* gender gap in titles at the banker's current employer. Models 1 and 2 show the full set of bankers, while models 3 and 4 keep only the most senior banker at a branch, i.e., the "Boss". The gender gap is defined as the difference between the number of male and female senior bankers at a branch (or bank), scaled by the total number of senior bankers working at the respective branch (or bank). The gender gap can range from -1 (only female senior bankers) to +1 (only male senior bankers), with higher values capturing larger gender gaps. The most senior banker is determined using the titles and, as a tie-breaker, tenure. All models include fixed effects for the banker's old bank times year. Only the years when bankers move between banks are included in the sample. The sample covers the years from 1996 to 2020. Bankers are dropped if we are unable to find information about their location. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and banker level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Sample:	All bankers		Bosses only	
Dep. variable: Gender gap at	Branch	Bank	Branch	Bank
	(1)	(2)	(3)	(4)
Gender gap in titles at old branch	0.24***	0.11***	0.39***	0.20***
	(5.56)	(3.51)	(5.83)	(2.94)
Observations	1,619	1,619	338	338
R-squared	0.40	0.35	0.52	0.44
Old Bank×Year FE	Yes	Yes	Yes	Yes

Table 8: The role of individual bankers - Gender gap after new bankers join

This table presents results from a regression of gender gaps at the banker's current employer on gender gaps at the banker's previous employer. The dependent variable in models 1 and 3 is the gender gap in titles at the banker's current *branch*. In models 2 and 4, it is the *bank-wide* gender gap in titles at the banker's current employer. Models 1 and 2 show the full set of bankers, while models 3 and 4 keep only the most senior banker at a branch, i.e., the "Boss". The gender gap is defined as the difference between the number of male and female senior bankers at a branch (or bank), scaled by the total number of senior bankers working at the respective branch (or bank). The gender gap can range from -1 (only female senior bankers) to +1 (only male senior bankers), with higher values capturing larger gender gaps. The most senior banker is determined using the titles and, as a tie-breaker, tenure. All models include bank-times-state fixed effects. Models 1 and 3 additionally control for year fixed effects, while 2 and 4 add bank-times-year fixed effects. The sample covers the years from 1996 to 2020. Bankers are dropped if we are unable to find information about their location. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and banker level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Sample:	All bankers		Bosses only	
Dep. variable: Gender gap at	Branch	Bank	Branch	Bank
	(1)	(2)	(3)	(4)
Gender gap in titles at old branch	0.11***	0.04**	0.33***	0.16***
	(3.93)	(2.09)	(5.10)	(4.13)
Observations	1,952	1,952	541	541
R-squared	0.58	0.50	0.75	0.58
Bank×State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 9: Sources of the gender gap - Carers' responsibilities
This table shows regressions of bankers' probability of being promoted (in %) on a dummy for female bankers interacted with the following indicators: Model 1 shows interactions with a dummy for the first year after a banker starts working for a new employer. Model 2 uses an indicator for bankers working in a state with strict pregnancy protection laws according to the "The Best States for Working Women Index". Model 3 uses an indicator for the sate-years where paid maternity leave is available. The *Pregnancy laws* and *Maternity leave* variables are absorbed by the fixed effects. All models control for the tenure and the squared tenure of the banker as well as bank-times-year-times-state fixed effects. The sample covers the years from 1996 to 2020 for which banker location is available. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and banker level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Dep. variable (%):	Promotion to senior		
	(1)	(2)	(3)
Female banker × Banker switched	-5.04**		
	(-2.27)		
Female banker × Pregnancy laws		-2.07	
		(-0.52)	
Female banker × Maternity leave			-3.72
			(-0.97)
Banker switched	5.87***		
	(4.04)		
Female banker	-0.11	-1.16	-1.23
	(-0.19)	(-1.03)	(-1.23)
Observations	6,996	5,147	5,147
R-squared	0.24	0.30	0.30
Controls	Yes	Yes	Yes
Bank×Year×State FE	Yes	Yes	Yes

Table 10: Sources of the gender gap - Statistical and implicit discrimination
This table shows regressions of bankers' probability of being promoted (in %) on a dummy for female bankers interacted with the following indicators: Model 1 and 2 show interactions with a dummy for, respectively, bankers that attended a top school (Ivy League, UC Berkeley, Stanford, Chicago Booth, Northwestern, or MIT) or that have obtained an MBA. Models 3 and 4 show interactions with a dummy for, respectively, bankers working for a bank having a female on the board of directors or a female CEO/CFO. Models 5 and 6 show interactions with, respectively, a dummy for bankers that work in a bank branch that has only female leadership and the percentage of women in a branch's leadership. All models control for the tenure and the squared tenure of the banker as well as bank-times-year-times-state fixed effects. The sample covers the years from 1996 to 2020 for which banker location is available. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and banker level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Dep. variable (%):	Promotion to senior					
	Education		Global leadership		Local leadership	
	(1)	(2)	(3)	(4)	(5)	(6)
Female × Top School	-2.26					
	(-0.93)					
Female × MBA		-1.24				
		(-0.48)				
Female × Female on board			-0.22			
			(-0.13)			
Female × Female CEO/CFO				1.48		
				(0.50)		
Female × Only female seniors					11.00***	
					(4.04)	
Female × %Female seniors						32.56***
						(7.15)
Top School	0.21					
	(0.15)					
MBA		-0.21				
		(-0.17)				
Female	0.01	0.17	-1.07	-1.22	-6.96***	-8.13***
	(0.01)	(0.08)	(-0.77)	(-1.21)	(-5.95)	(-6.57)
Observations	2,888	2,888	4,242	4,242	4,085	4,085
R-squared	0.34	0.34	0.30	0.30	0.29	0.30
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank×Year×State FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 11: Potential remedies - Lawsuits
This table shows regressions of bankers' probability of being promoted to a senior role (in %) on an indicator for female bankers interacted with a dummy for banks that settled a discrimination lawsuit. In model 1, the female banker dummy is interacted with an indicator for banks that have settled a lawsuit about gender offenses in the current or following year. Model 2 adds indicators for, respectively, one, two, and three or more years after the lawsuit has been settled. The interaction term in model 3 captures discrimination lawsuits that are unrelated to gender. All models control for the tenure and the squared tenure of the banker as well as bank-times-year-times-state fixed effects. The sample covers the years from 1996 to 2020 for which banker location is available. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and banker level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Dep. variable (%):	Promotion to senior		
	(1)	(2)	(3)
Female banker $\times$ Gender Lawsuits$_{[t-1,t]}$	3.30**	5.62**	
	(2.40)	(2.52)	
Female banker $\times$ Gender Lawsuits$_{t+1}$		2.69	
		(1.03)	
Female banker $\times$ Gender Lawsuits$_{t+2}$		3.63	
		(0.87)	
Female banker $\times$ Gender Lawsuits$_{[t+3,T]}$		0.53	
		(0.13)	
Female banker $\times$ Other Lawsuits$_{[t-1,t]}$			-2.98**
			(-2.18)
Observations	2,958	2,958	2,958
R-squared	0.30	0.30	0.30
Controls	Yes	Yes	Yes
Bank$\times$Year$\times$State FE	Yes	Yes	Yes

Appendix for
"Gender, performance, and promotion in the labor market for
commercial bankers"

Appendix Figures

Figure A1: Bankers' client portfolio - Industry composition
This figure plots the distribution of the main industry (SIC-1 code) of the firms in bankers' portfolios. The main industry is defined as the SIC-1 industry, with which bankers close the highest number of deals. The red bars show the distribution for female bankers, whereas the blue ones show male bankers. Both series are scaled by the total number of deals closed by women and men.
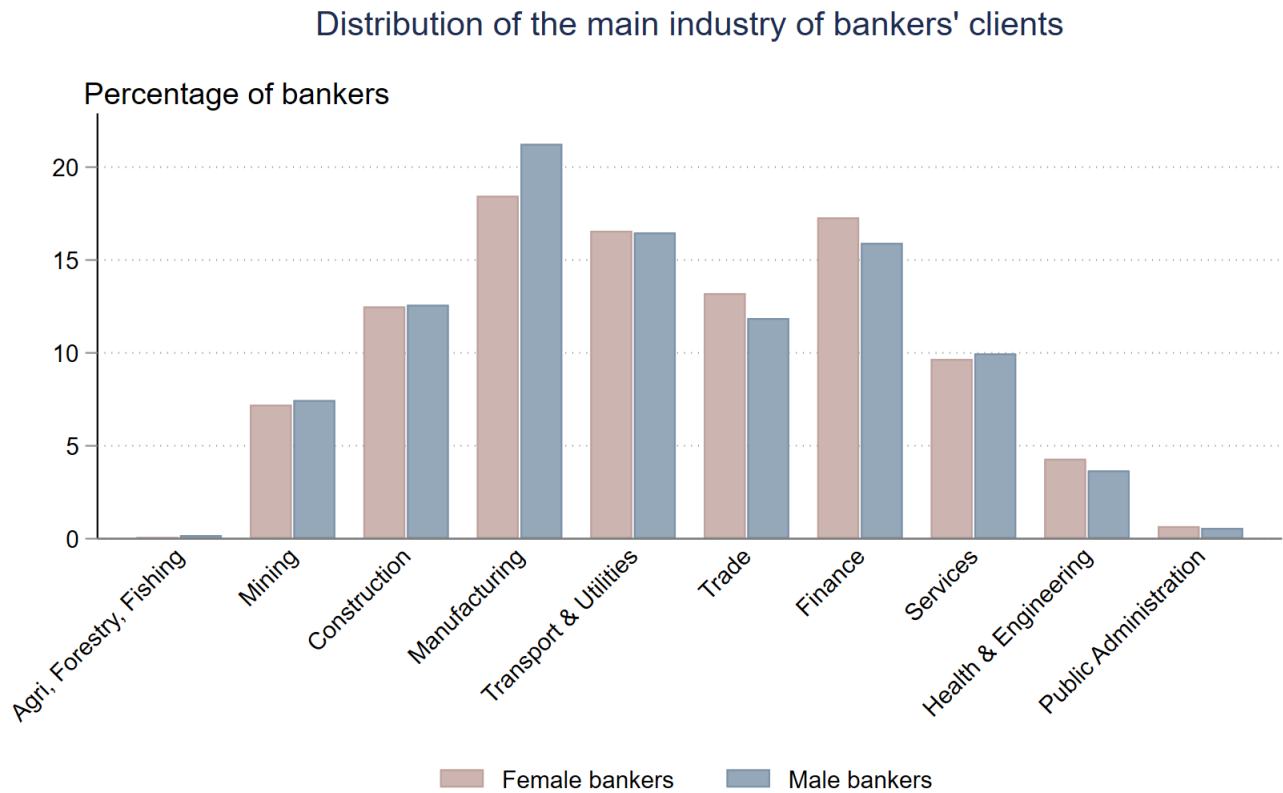

Distribution of the main industry of bankers' clients

Figure A2: Promotion to senior and banker performance

The figure shows a binned scatterplot of the probability of promotion to a senior position and the deal volume generated by bankers. The scatterplot controls for banker tenure and squared tenure as well as bank and year fixed effects. The sample includes all bankers in junior positions.

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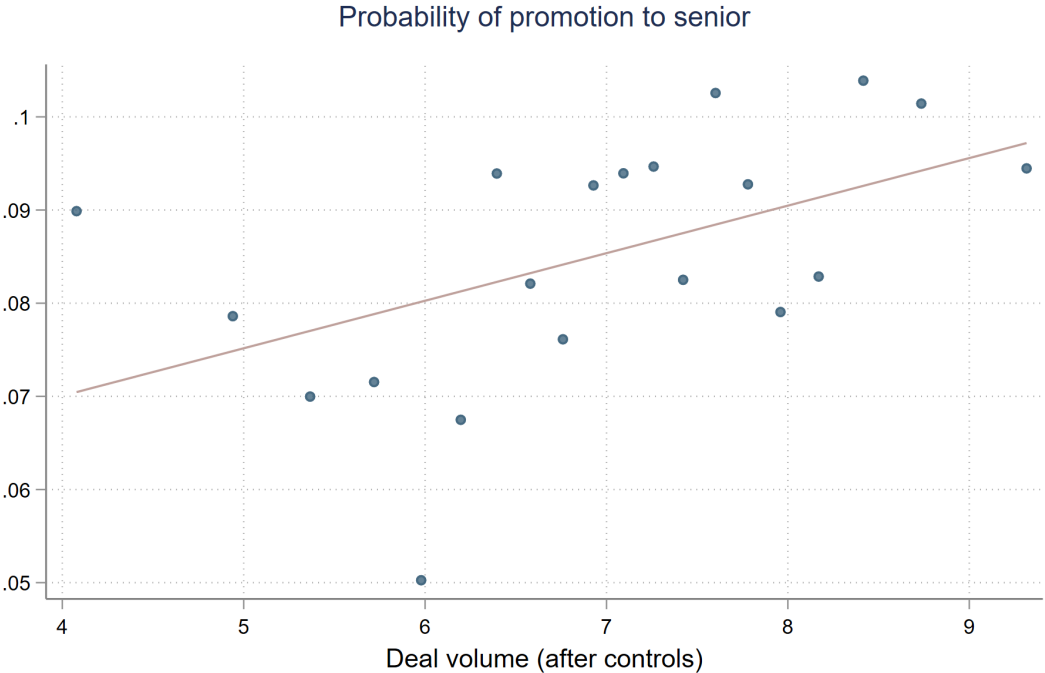
Appendix Tables

Table A1: Variable definitions

Banker's portfolio characteristics

#Clients - All	Running number of clients with whom the banker has at least one deal.
#Clients - Small	Running number of small clients (total assets below median for the year) with whom the banker has at least one deal.
#Clients - Large	Running number of large clients (total assets above median for the year) with whom the banker has at least one deal.
#Clients - Female board	Running number of clients who have at least one woman on the board of directors with whom the banker has at least one deal.
#Deals - All	Running number of deals that a banker signs at a bank.
#Deals - Small	Running number of deals that a banker signs with small clients (total assets below median for the year) at a bank.
#Deals - Large	Running number of deals that a banker signs with large clients (total assets above median for the year) at a bank.
#Deals - Female board	Running number of deals that a banker signs with clients who have at least one woman on the board of directors at a bank.
Log Deal Volume	Logarithm of total deal volume of banker in $ million.
Volume per deal	Average deal volume of banker per deal in $ million.

Banker characteristics

Female banker	Indicator for female bankers based on census names.
Promotion	Indicator for the year when a banker's title changes, e.g., from Vice President to Director.
Pregnancy laws	Measure of strength of the state's pregnancy protection laws as reported in the "Best States for Working Women Index."
Maternity leave	Indicator for a banker that lives in a state that offers mandatory paid maternity leave for women.
Promotion to senior	Indicator for the year when a banker's title changes to Senior Vice President or to Director.
Tenure	Number of years that a banker spent working at a bank.
Top school	Indicator for bankers that attended either an Ivy League school or UC Berkeley, Stanford, Chicago Booth, Northwestern, or MIT.

Bank characteristics

Lawsuit gender offense	Indicator for banks that experience a gender discrimination lawsuit.
Lawsuit other	Indicator for banks that experience a discrimination lawsuit, other than relating to gender.

[Continued from previous page]

Gender gap in titles	Defined as the number of male senior bankers minus the number of female senior bankers, scaled by the total number of senior bankers. The variables are counted either at the bank-state-year level or at the bank-year level, depending on the specifications.

Table A2: Bankers' performance - Deal volume

This table shows regressions of bankers' portfolio characteristics on an indicator for female bankers and controls. The dependent variable in models 1 and 2 is the the logarithm of the total deal volume that a banker closes. In models 3 and 4 it is the volume per deal. Models 1 and 3 include only bank-times-year fixed effects while models 2 and 4 include bank-times-year-times-state fixed effects. All models control for the tenure and the squared tenure of the banker. The sample covers the years from 1996 to 2020. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and banker level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Dep. variable:	Log Deal Volume		Volume per Deal	
	(1)	(2)	(3)	(4)
Female banker	0.16**	0.03	46.90*	-13.25
	(2.32)	(0.20)	(1.83)	(-0.24)
Observations	21,982	7,148	21,982	7,148
R-squared	0.33	0.44	0.20	0.35
Controls	Yes	Yes	Yes	Yes
Bank×Year FE	Yes	No	Yes	Yes
Bank×Year×State FE	No	Yes	No	Yes

Table A3: Bankers' performance - Rank within bank

This table shows regressions of bankers' portfolio characteristics on an indicator for female bankers and controls. The dependent variables measure the rank of a banker within a bank during a given year. In model 1 bankers are ranked according to the number of deals that they close. Model 2 uses number of clients and model 3 deal volume to compute rankings. All models control for the tenure and the squared tenure of the banker and state FEs. The sample covers the years from 1996 to 2020 for which banker location is available. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and banker level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Dep. variable:	Rank of banker within bank-year		
	(1)	(2)	(3)
	#Deals	#Clients	Deal Volume
Female banker	5.32***	5.55***	3.06**
	(3.24)	(3.42)	(2.34)
Tenure (yrs)	9.67***	9.30***	4.70***
	(3.24)	(3.20)	(3.09)
Tenure (yrs)^2	-0.64***	-0.62***	-0.30***
	(-3.75)	(-3.68)	(-3.53)
Observations	16,445	16,445	12,610
R-squared	0.09	0.09	0.08
State FE	Yes	Yes	Yes

Table A4: Institutional and personal factors driving the gender gap
This table presents results from AKM regressions (Abowd et al., 1999) of local gender gaps on banker and bank fixed effects as well as year dummies. The dependent variable in model 1 is the gender gap in titles. This is defined as the difference between the number of male and female senior bankers at a branch, scaled by the total number of senior bankers working at the respective branch. The gender gap can range from -1 (only male senior bankers) to +1 (only female senior bankers). Model 2 uses the gender gap in promotions as a dependent variable. This is defined analogously to model 1, but using differences in promotions to senior positions. The sample covers the years from 1996 to 2020. Bankers are dropped if we are unable to find information about their location. Variables are defined as in Appendix Table A1.

Dep. variable: Gender gap in	Titles	Promotions
	(1)	(2)
Observations	11,077	4,314
F-Statistic Joint F(1821,10979)	9.16	2.21
F-Statistic Banker F(1748,10979)	7.44	1.46
F-Statistic Bank F(73,10979)	10.7	6.67
R-Squared of:		
Bankers	0.497	0.268
Banks	0.101	0.115
Control Variables	0.008	0.082

Table A5: Homophily

This table shows regressions of the banker's contribution in explaining gender gaps at a bank branch where she works on the fraction of female bankers that said banker met while syndicating other loans. The dependent variable is computed by extracting banker fixed effects from AKM regressions of bank-branch gender gaps in titles (models 1 and 2) or promotions (models 3 and 4) on banker, bank, and year fixed effects. All models control for bank-times-year fixed effects. Models 2 and 4 additionally add fixed effects for the banker industry, defined as the SIC-2 code of the majority of the banker's clients. The sample covers the years from 1996 to 2020 for which banker location is available. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and banker level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Dep. variable:	Banker's contribution in explaining gender gaps			
	Titles		Promotions	
	(1)	(2)	(3)	(4)
%Women part of syndicats	-0.23***	-0.23***	-0.12***	-0.11***
	(-6.56)	(-6.79)	(-5.40)	(-5.03)
Observations	10,551	10,548	4,083	4,079
R-squared	0.27	0.29	0.46	0.47
Bank×Year FE	Yes	Yes	Yes	Yes
Banker Industry FE	No	Yes	No	Yes