GENDER, PERFORMANCE, AND PROMOTION IN THE LABOR MARKET FOR COMMERCIAL BANKERS*

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Abstract

Using data from the US syndicated loan market, we find women to be underrepresented among senior commercial bankers. This gap persists due to unequal promotion rates for men and women at the same institution in the same year, and cannot be explained by different individual or managerial performance. The gap is influenced more by individuals than by institutions, with senior bankers showing assortative matching when changing jobs, and perpetuating the gender gap from their previous workplace. Our findings suggest that the gender gap may be partially attributable to women taking on more family care responsibilities. Hard credentials or female leadership at the top of banks do not alleviate the gender gap, but targeted gender discrimination lawsuits and female leadership on the local level result in increased promotion of women.

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1 Introduction

Human capital has become increasingly vital for corporate value creation (Zingales, 2000), and maximizing the potential of all members of society is therefore not only a matter of fairness but also an essential element of economic efficiency. Despite advances, large disparities in labor market outcomes between groups persist, and one of the most significant of these is the gap between genders. Although in recent decades women have made substantial progress in the workplace, they remain underrepresented in senior positions and high-pay industries (Bertrand, 2018; Piketty, Saez, and Zucman, 2018). This is especially pronounced in the financial industry, which is often characterized as a particularly hostile work environment for women (Jaekel and St-Onge, 2016). Firms in the finance sector have also been the target of numerous high-profile gender discrimination lawsuits, illustrating the urgency of addressing this issue.

Policy makers have expressed a need to better understand the extent of gender gaps in finance and their drivers.[1] 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 gap with regard to promotion. Our setting has many characteristics that have been shown to potentially amplify gender differences: a high-skill, high-pressure career that relies 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 US from the signature pages of loan contracts.[2] By analyzing these documents, we can track bankers' employment history and client portfolios and the volume of loans they underwrite. This allows us to observe their performance, both in absolute terms and relative to their peers. Moreover,

[1] For example, a 2020 US House of Representatives study (house.gov (2020)) finds 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."

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

the signatures on these contracts include information about each banker's rank at the time of signing, enabling us to trace individuals' career trajectories as they advance through the ranks. Additionally, we collect the location of each banker, which allows us to identify his or her colleagues and superiors. With this wealth of information, we can analyze the role of bankers' environment, including individual superiors and co-workers, in shaping their career paths.

The US loan market employs highly skilled individuals at the top of the income distribution, for which we are able to observe rank, performance, and promotion simultaneously.[3] This is an ideal setting for studying the career dynamics of highly paid women, and for documenting any potential gender gaps and investigating their causes, and possible remedies.

To start our analysis, we examine the representation of women among senior ranks in commercial banking. Our findings indicate that when comparing bankers working for the same bank at the same time, women are approximately 25 percent less likely than men to hold senior positions. These differences in seniority may reflect women's historical career choices.[4] If so, the gender gap in seniority should shrink over time as female bankers get promoted through the ranks. Our analysis reveals, however, that women are also less likely than their male colleagues to be promoted, even after accounting for performance measures or comparing individuals within the same bank location. In other words, women are not just underrepresented among senior roles (*in levels*), but are less likely to be promoted (*in changes*). Further, gender has explanatory power only for the promotion of bankers to senior—but not to junior—ranks, consistent with the presence of a glass ceiling (Blau and Kahn, 2017).

The performance of individual bankers is a key factor driving their promotion (Gao,

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

[4]Women have long been underrepresented in the finance industry. Lagaras, Marchica, Simintzi, and Tsoutsoura (2022) show that only 20–30% of women with postgraduate Finance degrees enter the financial sector immediately following graduation.

Kleiner, and Pacelli, 2020). Thus, one potential explanation for the gap could be differences in performance between bankers. This is not, however, the case in our setting. Unlike with lawyers, where Azmat and Ferrer (2017) find that women underperform their male peers, female bankers in our sample perform at least as well as, if not better than, their male peers. Also, unlike in the united kingdom where differential career trajectories between men and women can be explained by differential human capital (**?**), in our setting women have, if anything, higher human capital than their mail colleagues as measured by education credentials. We find that women close more deals, have larger client portfolios, and generate higher deal volumes compared to men with similar tenure who work for the same bank at the same time. Furthermore, our analysis finds no evidence that loans issued by female bankers subsequently underperform, alleviating concerns that women achieve higher loan volumes through excessive 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 for women 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 promotion to compare the performance of *marginally* promoted men and women. We find that, on average, women who are marginally promoted subsequently outperform their male counterparts in terms of loans issued. We also examine the possibility that the gender gap in promotion rates is due to differences in managerial ability. Using the same marginal promotion approach, we find that women who are marginally promoted also outperform men in terms of ex post managerial performance. These results suggest that the gender gap in promotion rates cannot be explained by differences in performance or managerial ability.

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 to investigate to what degree

the gap is institutional, as opposed to personal. That is, we ask if the gender promotion gap is mostly a function of which bank employs a banker, or of who the direct supervisor *within that bank* is.[5] The answer to this question is important since it motivates different policy responses. If the problem is at the institutional level, regulators need to pressure banks to change their practices. If, on the other hand, individuals drive the gap, it can be addressed by supporting banks' efforts to weed out the "bad apples."

To further unpack the drivers of the gender promotion gap, we use high-dimensional fixed effect methods for matched employer–employee samples, developed by Abowd, Kramarz, and Margolis (1999). We construct measures of the gender promotion gap for each bank office and separately estimate the relative contributions of individual versus institutional factors. Surprisingly, we find that individual bankers explain more than twice as much of the variation in the local gender promotion gap than do institutions—that is, than do the employing banks.

Given the statistical power of individual bankers in explaining the gender gap, it is important to grasp what is driving their contribution. Is the gender gap at local bank offices driven by bankers self-selecting into specific locations—so, by "assortative matching"—or do bankers shape the policy with regard to promoting women at the office they work at? 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, once a banker with a history of low promotion rates for women joins a new office, the behavior of said banker seems to influence the office's promotion policies.

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: (i) differences between genders based on *preferences*, (ii) differences based on unequal burdens in *raising families*, and (iii) differences based on various forms of *biases*, or

[5]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).

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 by the disproportionate burdens of child rearing (Goldin and Katz, 2008; Bertrand, Goldin, and Katz, 2010). We use two sets of tests to see if family responsibilities explain our gender gap. First, we study banker mobility; second, we study state-level differences in legal provisions regarding gender.[6] Women are more likely than men to choose employers based on their own family situation—so, influenced for example by length of commute—rather than in order 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 bankers see their unconditional likelihood of promotion almost double. 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 far from obvious though. For women in top careers, 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.

Finally, we turn to the importance of biases or discrimination in explaining the gender promotion gap. If female bankers face *statistical discrimination*, signals of high human capital would increase their promotion chances. Using education data from a popular career

[6]Testing for family responsibilities directly is difficult in our setting since we do not observe bankers' family status or age.

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 on both the local and the organizational level.[7] In our setting, gender diverse leadership at the local office level does indeed help to close promotion gaps.

If gender gaps in banking were a result of individual senior bankers' taste-based discrimination (Becker, 1957), then banks might take action to combat such practices once they became aware of the costs associated with them. Our analysis suggests that when a bank loses or settles a lawsuit related to gender discrimination the promotion gap between men and women temporarily disappears. This effect is, however, transitory, and the gap re-emerges over time. Notably, we do not observe a similar effect for labor discrimination lawsuits that are unrelated to gender, thus providing evidence of a causal relationship between gender discrimination and the gender promotion gap in banking.

Our paper contributes to a growing literature on gender in the finance industry. In contemporaneous work, Huang, Mayer, and Miller (2022) investigate the performance and labor market outcomes of female retail-mortgage brokers and find that women face higher performance requirements for promotion. Lagaras et al. (2022) document gender gaps in the broader UK finance industry and document those narrow over time as human capital of women improves relative to that of men. We add to this line of inquiry along several dimensions. First, we focus on the high-end segment of the finance labor market, where tough competition and professionalism could limit the scope for taste-based discrimination, and document a strong and persistent gender gap also in this setting. Second, our data allow us to pinpoint the role of bosses in promotion decisions and to identify the important role of individuals in driving gender gaps. Finally, our setting allows us to analyze potential remedies for the gender promotion gap and to reveal that legal threats and the presence of

[7]For example, female senior executives and a gender diverse board can help create an environment in which women can thrive (Adams and Ferreira, 2009; Hospido, Laeven, and Lamo, 2022; Lins, Roth, Servaes, and Tamayo, 2023; Tate and Yang, 2015). Access to local management can also support women's career advancement (Cullen and Perez-Truglia, 2019).

female supervisors appear effective in closing this 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, 2022; 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.[8]

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 public US 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, including on education, from a major online career network. As a final addition, we obtain information on bankers' offices from the same career network or by manually examining loan contracts if the information is not available on the network's website.

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 filings. We download these filings from EDGAR for all Compustat firms between 1996 and 2020. We then apply an algorithm

[8]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).

that identifies loan contracts in these filings and extracts the names and employers of the bankers from the signature pages of these loan contracts.[9]

Figure 1 presents an example of one such page, with circles indicating the pieces of information extracted by our algorithm. 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.[10] We then determine each banker's gender as male or female based on the most frequent male and female first names according to the US census.

- Figure 1 -

As a final filter, we only retain observations in which bankers are in a leading role—that is, the algorithm identifies an individual's bank as being among the lead banks of the syndicate. While this reduces the number of observations per banker, it offers a better way of capturing 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.[11]

Appendix Figure A1 displays the distribution of the most frequent industries of the clients in the portfolios of each banker, separately for women and men. We find a relatively even distribution of loans across industries, with most loans being issued to manufacturing firms, with large loan volumes also in construction, transport and utilities, trade, finance, and services. Intuitively, one could expect gender differences across the industry composition of

[9] 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 (2022). Similar data are studied in Bushman et al. (2021).

[10] 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 potentially valuable information for identifying the point at which bankers switch employers or get promoted. Our results remain unchanged if we restrict the sample to the deals for which we have an overlap with DealScan.

[11] All bankers underwrite loans both as lead arrangers and participants. In unreported results, we define the same performance metrics we calculate using lead banker interactions but using the totality of each banker's deals, and find that our inference remains unchanged.

bankers' portfolios—for example, fewer women primarily issuing loans to firms in mining and more women primarily issuing loans to firms in services. We, however, find that the client portfolios of female and male bankers are very similar in terms of industry composition.

The bankers in our sample are commercial bankers, and they are mainly engaged in building and maintaining relationships with the largest US corporations. These borrowers take out large loans that are syndicated to facilitate risk sharing.[12] 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. Gao et al. (2020) verify that loan underwriting is the main metric through which commercial bankers are evaluated and ultimately promoted. This relationship is also confirmed in Appendix Figure A2, which shows the strong relationship between the deal volume that a banker generates and her or his probability of being promoted to a senior position.

- Table 1 -

Panel A of Table 1 provides summary statistics within banks. During their tenure at a given bank, bankers have an average of 2.3 large clients and 0.8 small ones for which they act as lead arrangers. With these firms, they close an average of 2.9 deals and 1 deal, respectively. The median total deal volume that a banker accounts for is USD 950 million, corresponding to about USD 530 million 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 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.[13] Most bankers are in junior ranks such as (Junior) Vice President (VP). In all, 19% are Senior VPs, and

[12]Since their clients are large companies and since they often interact with other financial investors such as loan funds or CLOs (Fleckenstein, 2022), these bankers are sometimes referred to as "corporate bankers," and are often physically and organizationally located close to banks' investment banking divisions.

[13]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 at these levels until retirement without further promotions. In addition, these are unconditional averages, not averages conditional on eventual promotion. Bankers likely leave the industry after not being promoted for multiple years.

20% have a rank of director or above. Roughly half of the bankers in our sample for which we can obtain education information hold an MBA, and 19% attended a top school.[14]

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

- Figure 2 -

Figure 2 shows the gender distribution of active bankers in our sample over time. In the early 2000s, we observe the maximum number of active bankers, about 1,500 men and 500 women. The fraction of women remains roughly constant in the first half of our sample and decreases afterward.[15]

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 on which the loan contract is signed. We do this because the signing date sometimes differs from the start date that DealScan records, for example 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

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

[15]Since we remove bankers from the sample after observing their last deal, part of the decline in the number of active bankers toward the end of the sample is mechanical. Another reason why the number of active bankers decreases following the financial crisis is an increase in lending to private borrowers, which do not report to the SEC. We have no reason to believe that any of these changes should disproportionately affect women compared to men.

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 in which the bankers are located from loan contracts.

Due to the extensive data collection effort that doing otherwise would require, we only collect the most recent reported location of each banker.[16] 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 and at least two pieces of location information. Of these 22 bankers, 20 always remain in the same state and only 2 ever move between states. This low moving rate is sensible since commercial bankers' biggest asset is their set of relationships with local clients. This gives us confidence in the validity of our data collection strategy.

3 Results

This section presents our empirical findings on gender disparities in the labor market for commercial bankers. We begin by highlighting significant variations in seniority and promotion likelihood between male and female bankers. We then investigate whether gender discrepancies can be attributed to variations in banker performance. Finally, we explore the distinctive roles played by individuals and institutions in accounting for gender gaps, and explore possible underlying factors contributing to these gaps.

3.1 A gender gap in commercial banking

Our first tests investigate whether women in commercial banking hold ranks of similar seniority to those of 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 Director. Similar to Gao et al. (2020), we aggregate

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

the differing titles into broader categories of Junior Vice President, Vice President, Senior Vice President, and a final category of all higher ranks—so, 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 overrepresented, with a share of about 24% of the workforce, among junior bankers (Assistant VP and VP), but underrepresented among senior bankers, with about 16% of the workforce.

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

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

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 $Female\ banker_i$, which takes the value 1 if banker i is a woman 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 has underwritten, as well as 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, in periods when a bank is expanding its lending activity it might also decide to hire more female bankers), 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 the 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 OLS 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 are 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 employees that work in the same state, at the same bank, and at the same time, we find that women are 10.6 pp more likely to be vice presidents than are men. The results in Table 2 show that women are more likely to hold the junior ranks of VP and Assistant VP. On the other hand, columns 5 to 8 show that they are about 5 to 6 pp less likely to hold senior ranks, such as Senior Vice President, Director, or higher.

– Table 2 –

In sum, women are relatively underrepresented among senior levels of commercial bankers. These results are consistent with anecdotal evidence and the concerns of policy makers, such as the findings in the 2020 US House of Representatives report on diversity in banking (house.gov (2020)).

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 underrepresentation 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 itself 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 will remain.

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 coefficient estimates correspond to percentage points. We then compare each banker to his or her peer group—that is, all bankers of 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—so, all bankers that can potentially be promoted—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 show that we find no statistically significant difference in the likelihood 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 -1.4 pp. These are economically significant and represent a more than 50% relative reduction in the likelihood of being promoted compared to 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.[17]

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

These results show that the difference in levels of seniority is not vanishing organically through a natural progression of junior women.[18]

- Figure 4 -

There might be a time trend toward higher promotion rates for women over time as the attention paid to gender diversity increases. For example, Lagaras et al. (2022) find that gender pay gaps for UK employees in the broader finance sector have decreased over the past twenty years. Figure 4 shows a year-by-year breakdown of the promotion rate of men and of 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 underrepresentation of women in senior ranks is whether they potentially reflect 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, due to an ex ante choice to focus on their families, they underperform men.

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

[18]The findings presented in this section are robust to a series of alternative specifications. First, tenure and/or performance metrics may matter differently across genders. Our inferences remain virtually unchanged when we control for this by interacting the tenure and performance measures with *Female banker*. Second, our sample shrinks significantly when we include state fixed effects since we are unable to find location information for about two-thirds of our sample. Reassuringly, the results from our specifications that account only for bank-times-year fixed effects are unchanged when we drop observations for which no state information is available. Third, to account for potential non-linearities, we ensure that our results are robust to controlling for squared performance measures. All of these results are left out of the internet appendix for the sake of brevity, but are available upon request.

columns 1 and 2 of Table 4 is #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 #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 of women who have been working for a similar amount of time at the same bank at the same time. If women are skipped for promotion and underrepresented 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 of 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 than that of men, although it shrinks by about half once we introduce the tightest set of bank-state-year fixed effects.

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 A2 we confirm women's outperformance using this alternative 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 larger deal flows through aggressive lending, it 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 -

First, 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 each case we measure performance over both a short (three-year) and a long (five-year) window following loan origination. We obtain issue-level credit ratings from Mergent FISD and consider the downgrade or default of any bond as a negative credit event.[19] These measures are easily observed and previous evidence shows that they feature heavily in bankers' performance evaluations (Gao et al., 2020). In each model, we control for bank office-times-year fixed effects in addition to the number of clients in a banker's portfolio. Across all four specifications, we find no evidence of inferior loan performance for female bankers compared to their male colleagues working at the same bank at the same point in time. This reinforces the previous result 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. Following promotion, however, the tasks carried out

[19] We opt for issue—as opposed to issuer—ratings since this allows us to observe negative credit events at a higher frequency. Our findings remain essentially unchanged if we utilize issuer-level credit ratings.

by bankers might change. Thus it is important to establish if the *forward-looking* performance of female bankers following promotion is superior to that of male bankers.

In our final set of tests in this section, we perform an "outcome test" as proposed by **?** to test the relationship between promotion, 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 were to 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 follow Benson et al. (2019) and infer the marginal effect of promotion 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 to a given seniority level with the leave-one-out average promotion likelihood across all other locations of the same bank in the banker's relevant labor market, i.e. their region, at the same point in time. As in Benson et al. (2019) and Huang et al. (2022), we further control only for the banker's tenure and tenure squared. In the second stage, we estimate the effect of the instrumented promotion likelihood on performance.[20]

We use this setup to explore two measures of the "performance" of marginally promoted

[20]Since we are interested in the differential effect of promotion between men and women, we instrument for both *Promotion* and *Promotion*×*Female banker* using the local leave-one-out average promotion likelihood as well as its interaction with *Female banker* in the first stage. While there are technically two endogenous variables in the second stage, the second variable is the interaction of the first with a cross-sectional measure (our gender indicator). As a result, only one source of exogenous variation is needed (Gormley, 2010; Maturana, 2017).

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 when they are promoted. Due to the nature of our data, any banker we observe is already relatively "senior," with many years of working experience. Thus, as bankers get promoted further up the chain many of their tasks remain the same. Hence, on the one hand, it is sensible 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 their team of 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 first limit our sample to only the most senior bankers for each bank, state, and year—so, to bosses. Then we calculate managerial performance as the total number of deals underwritten by all the subordinates of those bosses. Finally, 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 her or his 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, and location-specific effects.

We then estimate the 2SLS systems to identify the effect of promotion on both individual and managerial performance. 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, men and women that are promoted will perform similarly well.[21] If the lower promotion rate results from animus, or taste-based discrimination, women should outperform.

- Table 6 -

[21] Given our earlier results, this means a marginally promoted man closes fewer deals than a comparable woman *prior* to the promotion but has the same *post-promotion* productivity. In such a case, banks would optimally discriminate against women in promotion decisions, since women outperform only in lower ranks—that is to say, women have a comparative advantage over men at lower ranks, but not at senior ranks.

We begin with measures of *individual* performance. The results in column 1 of Table 6 show that marginally promoted women outperform marginally promoted men in terms of the number of deals they underwrite individually—that is to say, the interaction coefficient *Female banker* × *Promotion* is positive and statistically significant. Interestingly, the individual effect of promotion is negative and economically about the same size as the interaction, meaning that male bankers underwrite fewer deals post-promotion, while women continue to underwrite a similar number as before. There are multiple possible 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. It is therefore important to examine if men potentially outperform women in the managerial dimension of performance. This could mean that men under perform women post promotion in individual performance, but they might outperform them in managerial performance.

In column 2 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—so, as the "*Boss*"—and consider all bosses that remain in their positions for at least the time of the average loan maturity, so, four years, to allow for a full loan life cycle to measure managerial performance.[22] We then estimate the same IV setup as in column 1 to estimate the effect of marginally promoted men and women on the performance of their employees.

The coefficient estimate on the interaction between *Female banker* and *Promotion to boss* is again large and positive, yet not statistically significant. The un-interacted coefficient is economically small and statistically insignificant. The coefficient for men, meanwhile, is small

[22]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. Where there are multiple bankers with the same title, we choose the one that has the longer tenure at the bank. We drop remaining bank–state pairs where we cannot assign a unique banker of the most senior rank. Our results remain economically and statistically similar when considering a shorter or a longer minimum tenure than four years.

and statistically insignificant. These results provide no evidence that women underperform men on the managerial dimension. If anything women seem to outperform men in managerial performance, though we note that these tests have low power, as is also reflected in the low first stage F-statistic.

As in Benson et al. (2019), these measures are normalized residuals of managerial performance, and their magnitudes hence do not lend themselves to easy interpretation. Yet directionally these results show that marginally promoted women, if anything, outperform marginally promoted men. In other words, the Becker outcome test is inconsistent with rational equilibrium statistical discrimination, and consistent with animus.

Across both specifications we observe a high first-stage Cragg-Donald Wald F statistic of 20 to 30, in excess of the critical Stock and Yogo values for a maximum 10% bias, alleviating concerns about weak instruments. The first-stage results further show a strong, positive, statistically significant effect of the leave-one-out mean of bank-wide promotion rates on the promotion likelihoods of individual bankers, which confirms that the relevance condition of the instrument is fulfilled.

3.3 Is the gender promotion gap personal or institutional?

Our next focus is to determine whether the gender promotion gap is caused by institutional factors or personal ones. Put differently, to explain or predict the gender gap in a particular office at a specific time, which would be more informative, the worker's employing bank or the supervisor in charge of that office?

We begin our analysis by separately estimating the explanatory power of individual bankers as opposed to institutional factors—that is, the banks. We formally measure gender gaps in titles as the difference between the number of male and of female senior employees at a bank office, scaled by the total number of senior bankers working at that office. The resulting measure 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 to say, their contribution to explaining the variance in the gender promotion gap—in Figure 5.[23]

- Figure 5 -

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 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 careers. They do not, however, 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 toward 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.[24] We then estimate

[23]Details of the estimates upon which Figure 5 is based are presented in Appendix Table A3.

[24]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 restrict our 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 find for these static gaps in titles.

regressions of the historic gender gap in a banker's new office on the banker's gender gap in her or his 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 and 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 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 for the most senior banker in each office—so, for 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 is intuitive since there is a boss at the head of each office and each boss therefore has a larger role to play in shaping gender gaps. Thus, each boss's historic gender gap reflects more of a personal characteristic than merely an environmental one. Similar to before, the effects are stronger when measuring the future gender gap at the bank office rather than at the global bank level.

In a complementary analysis in Appendix Table A4, we show that this matching not only exists within the banker's own work environment but extends to his or her interactions with people *outside* the home bank. We utilize the fact that almost all major loans are syndicated—that is, they reflect collaborations across various banks. We then construct, for each banker, a measure of how many women the banker has previously interacted with during co-syndication. We find a strong, positive association between bankers' collaborations outside their bank during syndication and smaller gender promotion gaps within their

banks.[25]

The previous tests indicate that bankers match into offices based on their *ex ante* gender promotion gaps. However, it is also possible that there is an *ex post* convergence of locations toward the banker's inclination to promote women. In other words, bankers may not only choose offices that align with their preferences regarding promoting female bankers, but they may also influence the culture of their workplace to move toward their personal attitudes and preferences. In the final tests of this section, we explore this ex post convergence. We measure each office's gender gap *going forward* after a new banker joins, and estimate regressions of the gender gap going forward on the banker's historic gender gap.

- 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. Over time, the office's promotion gap converges toward that banker's historic gap. 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 being 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 to, the gender gap. We consider both explanations consistent with this underrepresentation being an equilibrium outcome of voluntary choices (e.g., Azmat and Ferrer, 2017) and those consistent with various forms of discrimination (Becker, 1957).

[25] 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 the main industry of the client portfolio of each banker. Thus, our inference is not driven by men and women sorting into different industries.

Family responsibilities

Women still bear a disproportionate share of responsibilities related to home and childcare, which can lead to weaker career outcomes, either due to lower ex ante aspirations (Azmat and Ferrer, 2017) or to stress 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 women under-prioritize career opportunities compared to men 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 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 4.6 pp 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 -4.0 pp, which almost fully reverses the positive unconditional coefficient. Taken together, these estimates imply that switching employers indeed accelerates career growth, but that women miss out on this effect.

A spirited political debate surrounds the value of government-provided support for women during pregnancy and childcare. 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 why these findings are statistically insignificant. First, the legal stipulations we examine here focus on pregnancy and early maternity. The bankers in our sample are, however, relatively senior and often older. It is possible that the female bankers we observe 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-rearing are unlikely to be a binding constraint with regard to 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 might explain the gender gap is discriminatory behavior. In particular, the strong association of individual managers with larger gender gaps outlined in Section 3.3 could reflect discriminatory behavior by superiors.

There are three main forms of discrimination and tackling them requires a range of different solutions (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 by looking at potential *statistical discrimination*. While our results imply that women outperform their male colleagues in our setting, we cannot rule out that there are other dimensions of performance in which women underperform men in a manner unobservable to the econometrician. If senior bankers expect women to be less competent

than their male colleagues, the gender promotion gap could reflect an equilibrium outcome of their promotion decision (Benson et al., 2021; Holub and Drechsel-Grau, 2021). One way for women to overcome this bias is for them to signal high ability levels through hard credentials.

We address this question empirically in the first two columns of Table 10. We collect data on bankers' education credentials from an online career network. As a first proxy, we record if a banker's undergraduate institution was a top school. Second—and as an alternative—women could signal their ability by obtaining an MBA degree. We then estimate our model, including 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. We find, however, that estimators for both interaction terms are negative and insignificant. To the extent that hard credentials such as a top school pedigree or an MBA can act as signals of ability in our setting, these results are inconsistent with the idea that statistical discrimination drives our results.

- Table 10 -

We then turn our attention to *implicit discrimination*—so, to an unconscious bias against women (Bertrand et al., 2005). If the gender promotion gap were 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 in an 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 statistically insignificant, providing no evidence that gender diverse senior leadership shrinks the gender promotion gap in our setting.[26]

[26]Note that we have limited power in these specifications, and that 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.

In our final test of implicit discrimination, we define leadership on the local rather than on the bank-wide level. Specifically, for each office and year we identify the set of senior bankers and determine if at least one is female. In column 5, we find that the presence of senior women on the local level has a very strong, positive impact on the chance of junior women being 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 as 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 on both the individual and the managerial level, and the strong personal component of individual bankers' revealed preferences for gender gaps—is 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.[27]

- Table 11 -

To test this conjecture, we obtain data on high-profile workplace discrimination lawsuits against banks from Good Jobs First, a nonprofit organization. The first column of Table 11 identifies banks in a two-year window centered around a lost or settled workplace gender discrimination lawsuit and asks if settlement of these lawsuits was associated with a decrease in the gender promotion gap between female and male bankers. We find that in the years when a bank settled a gender discrimination lawsuit, women were indeed significantly more likely to get promoted to senior positions in banks targeted in this way.[28]

[27]Starting in the mid-2000s, banks settled a number of high-profile lawsuits filed by female bankers who alleged 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.

[28]We include the year before the lawsuit was settled to account for the likely presence of preemptive behavior at the banks. Litigating or settling high-profile lawsuits often take years to resolve and it is likely that there is substantial pressure on banks to reduce existing discriminatory behavior even before an eventual ruling or settlement. For example, *Chen-Oster v. Goldman Sachs & Co.*—a major lawsuit against a bank, which involved allegations of discriminatory promotion practices against women—took eight years from initial complaint to ruling.

In column 2 we investigate 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 conclusion of the case, 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 involving race or religion. We find that losing a lawsuit for discrimination in dimensions other than gender is not associated with higher rates of promotion for women. In fact, the coefficient estimate is highly negative, at about -3.0 pp, 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 choose to abstain from being promoted, for example due to family obligations, gender discrimination lawsuits against their employers should not impact promotion likelihoods.

4 Conclusion

In response to calls from policy makers and society to explain gender gaps in the workforce, economists have made significant strides in recent years. Our study contributes to this important question by examining the under-studied area of highly skilled, highly paid labor in the financial sector. This sector has drawn attention due to its significant gender disparities,

and is of particular importance to the overall economy.

Our study benefits from a unique setting that allows us to observe the employment history, performance, hierarchical progress, and work environment of bankers. Our findings reveal a significant underrepresentation of women in senior positions, perpetuated by a gender gap in promotions. Despite outperforming men in terms of performance, women are promoted less frequently to senior ranks once they hit a glass ceiling.

An important insight from our study is the crucial role played by individual supervisors. We observe assortative matching of bankers to offices based on ex ante gender gaps, as well as ex post convergence of offices toward the gender-gap history of bankers who join these offices. The outsized role of individual supervisors in our setting may reflect the complexity of tasks performed by bankers, which could have implications for other high-skill job settings. While legislative measures can reduce gender gaps for average workers, we find no evidence that such measures are effective at the top end of the skill and income distribution. Instead, the most effective predictors of a reduced gender gap in promotion seem to be the presence of women in local leadership and pressure from gender discrimination lawsuits.

Our results suggest that some individual bankers exhibit a degree of animus against women, which has a significant impact on the gender promotion gap. An important question that remains is how bankers that exhibit such animus can remain in the workforce. Why do banks not part company with these individuals? Additionally, why do discrimination lawsuits only have a temporary effect? Our results on assortative matching provide a partial explanation, but further research is needed if we are to understand the origin of these biases and the mechanisms through which they persist, and to explore additional solutions.

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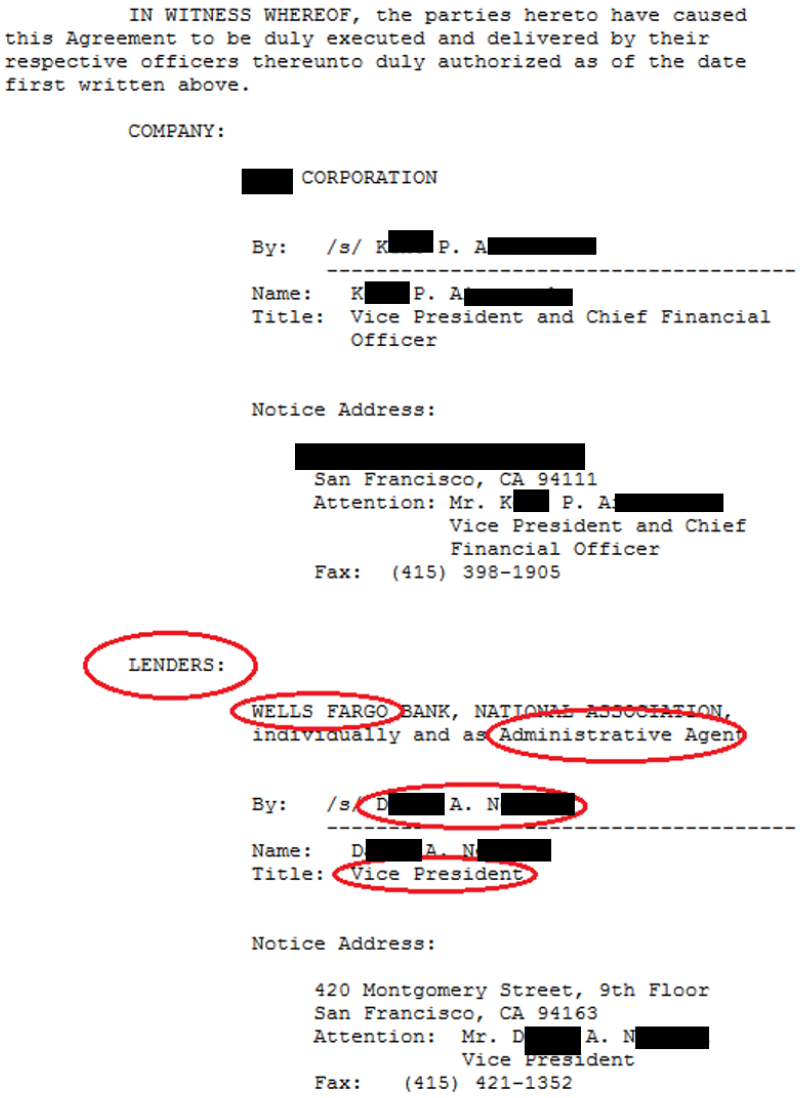
Figures

Figure 1: Example of a loan contract signature page
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).



IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed and delivered by their respective officers thereunto duly authorized as of the date first written above.

COMPANY:

[redacted] CORPORATION

By: /s/ K[redacted] P. A[redacted]
Name: K[redacted] P. A[redacted]
Title: Vice President and Chief Financial Officer

Notice Address:

[redacted]
San Francisco, CA 94111
Attention: Mr. K[redacted] P. A[redacted]
Vice President and Chief Financial Officer
Fax: (415) 398-1905

LENDERS:

WELLS FARGO BANK, NATIONAL ASSOCIATION, individually and as Administrative Agent

By: /s/ D[redacted] A. N[redacted]
Name: D[redacted] A. N[redacted]
Title: Vice President

Notice Address:

420 Montgomery Street, 9th Floor
San Francisco, CA 94163
Attention: Mr. D[redacted] A. N[redacted]
Vice President
Fax: (415) 421-1352

Figure 2: Active bankers over time
This figure shows the total number of active bankers in the sample by gender. Women are depicted by the red line and men by the blue line. Bankers are considered active for all years between the first and the last deal they sign, resulting in a mechanical decrease of active bankers toward the end of the sample.

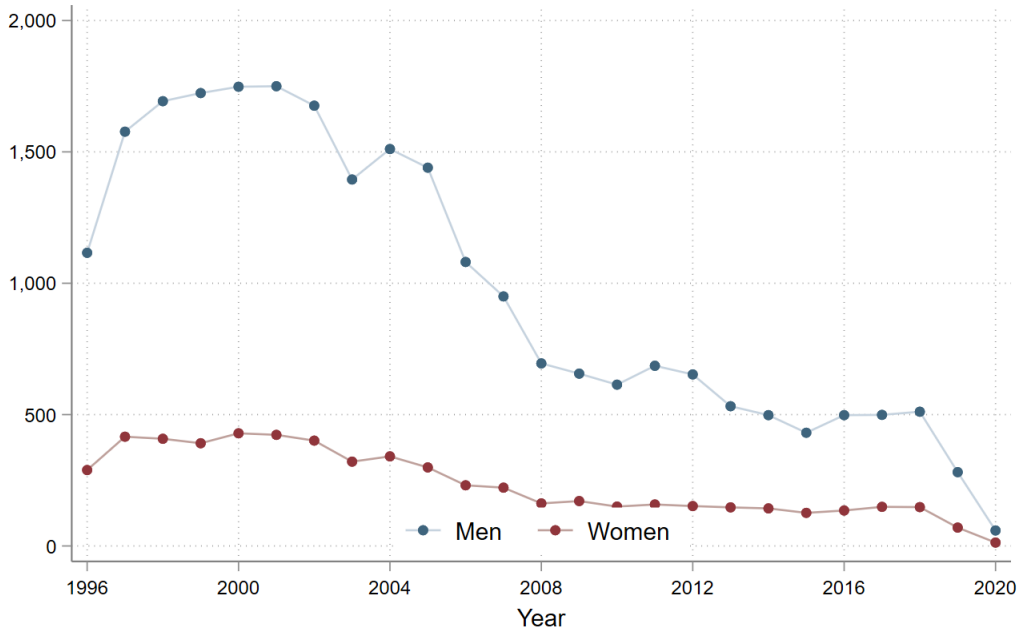


Figure 3: Share of female bankers by title
This figure shows the fraction of female bankers by title. The horizontal line depicts the fraction of female bankers in the overall sample.

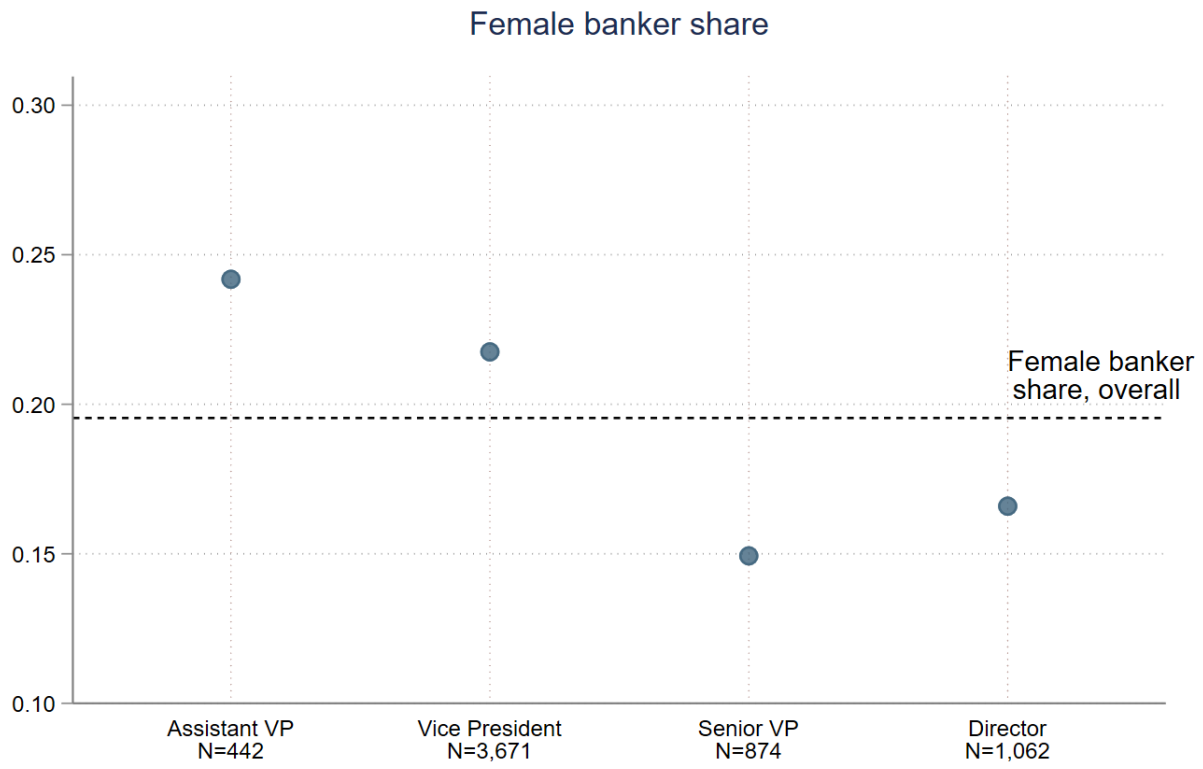


Figure 4: Gender promotion gap over time
This figure plots the frequency of promotions to senior positions (Senior VP and Director) over time and by gender. The red bars show the distribution for female bankers, the blue ones that for male bankers. Each series is scaled by the total number of active male and female bankers, respectively.

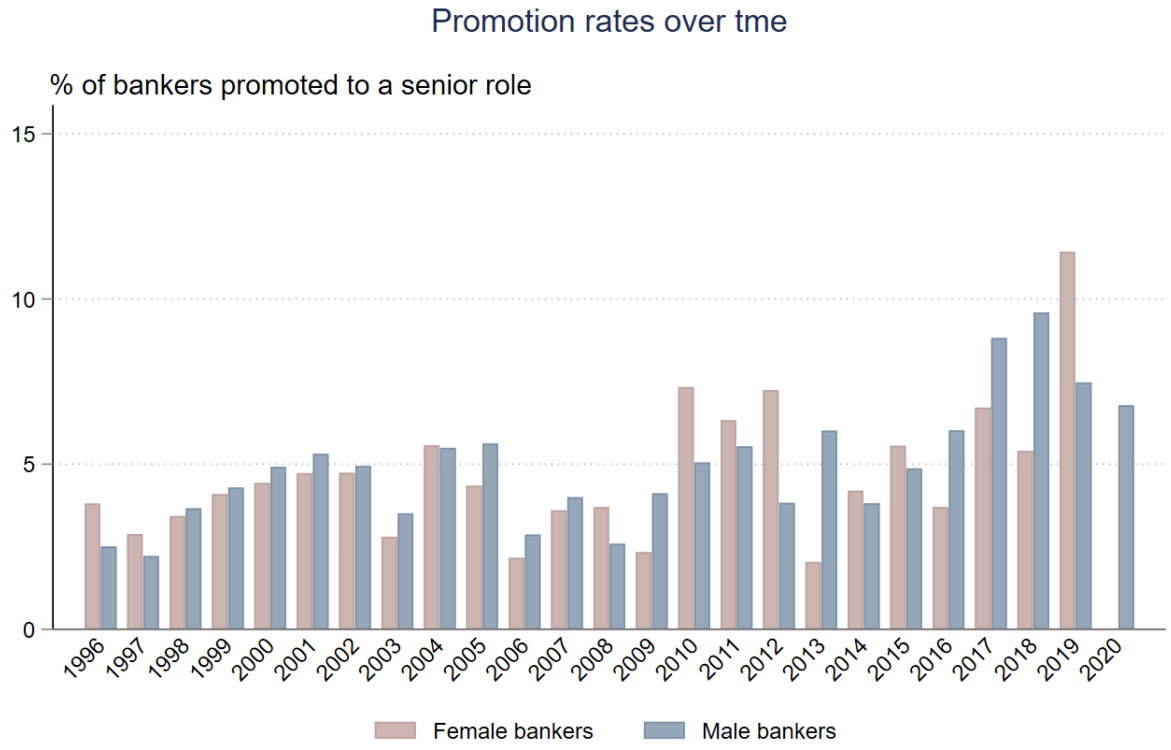
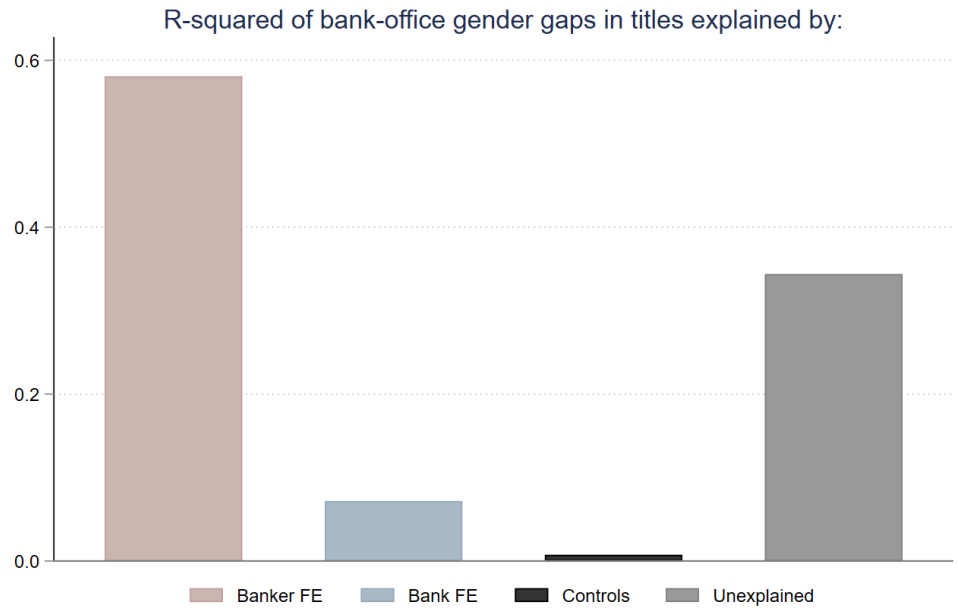
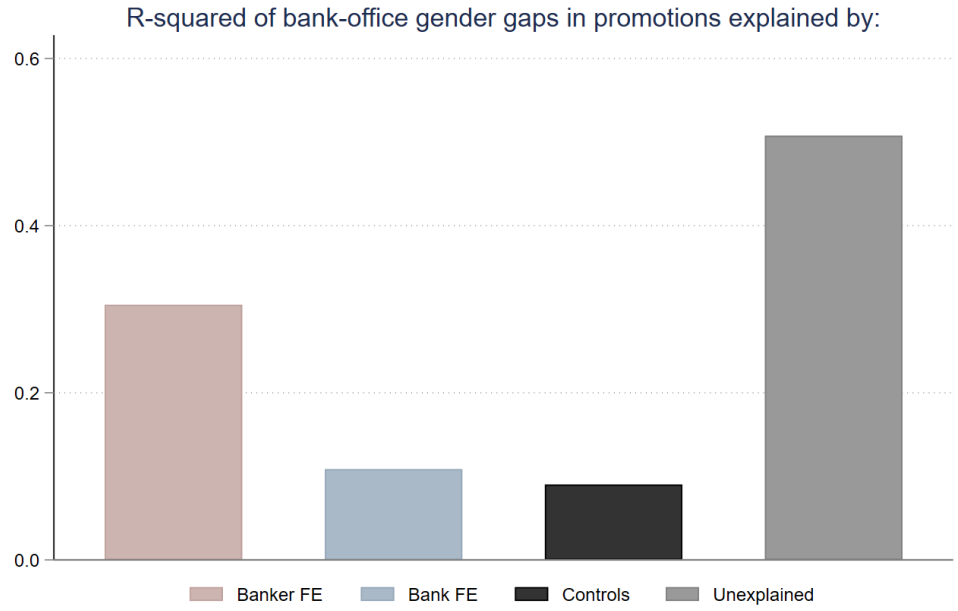


Figure 5: Variation in bank-office gender gaps
This figure plots the fraction of the variation in bank-office gender gaps that is explained by banker, bank, state, and year fixed effects, respectively, as well as the unexplained portion of the variation. In the upper panel, gender gaps are computed as 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 related to bankers' client portfolios. 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 portfolios are retrieved from EDGAR. Deal volume information is from DealScan, education and banker location 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 (USD M) – Total	22,145	300.00	2,532.26	950.00	2,585.00	4,445.51
Deal volume (USD M) – 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 (USD M) – Total	23,759	355.00	3,043.67	1,150.00	3,248.75	5,184.31
Deal volume (USD M) – 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 role (%)	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 (USD M) – Total	3,336.19	2,970.33	365.86	0.00	23,759
Deal volume (USD M) – 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 results from linear 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., for 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 the 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 results from linear 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 bank-times-year fixed effects. Even models include bank-times-year-times-state fixed effects. All models control for banker performance characteristics, i.e., for 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 the 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: Banker performance

This table shows results from linear regressions of bankers' performance measures 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. 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 bankers' tenure and squared bankers' 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 the 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 results from linear 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, respectively, the three and the five years following loan origination. Models (3) and (4) analogously count the number of clients that register a default in the three or the five years following loan origination. All models control for bankers' tenure and squared bankers' tenure, the number of large and small clients in a banker's portfolio, and bank-times-year-times-state fixed effects. Credit ratings and defaults are from Mergent FISD. 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 the 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.

	#Downgrades		#Defaults	
	(1)	(2)	(3)	(4)
	3yrs	5yrs	3yrs	5yrs
Female banker	-0.061	-0.005	0.013	-0.005
	(-0.76)	(-0.05)	(0.88)	(-0.18)
#Clients - Small	0.047	0.083	0.014**	0.028**
	(1.19)	(1.67)	(2.52)	(2.10)
#Clients - Large	0.375***	0.476***	0.004***	0.013***
	(21.30)	(29.33)	(2.69)	(3.32)
Observations	8,653	8,653	8,653	8,653
R-squared	0.69	0.73	0.21	0.24
Controls	Yes	Yes	Yes	Yes
Bank×Year×State FE	Yes	Yes	Yes	Yes

Table 6: Performance of marginally promoted bankers

This table shows 2SLS regressions of the effect of promotion on performance for marginally promoted men and women. Marginal promotions are identified by instrumenting *Promotion* (column 1) and *Promotion to boss* (column 2) with the yearly leave-one-out mean promotion rate (or the leave-one-out mean promotion rate to Boss) at a bank. Both regressions control for banker tenure and tenure squared. The dependent variable in the first stage is the standardized number of deals that a banker closed, in column 1, and managerial ability, in column 2 (Benson et al., 2019). The sample covers the years from 1996 to 2020 and includes all bankers for which managerial ability can be computed based on location information. Variables are defined as in Appendix Table A1. t-statistics, based on robust standard errors clustered at the bank and the 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)	(2)
Female banker × Promotion	3.01***	
	(2.82)	
Promotion	-4.44***	
	(-4.45)	
Female banker × Promotion to boss		1.45
		(1.22)
Promotion to boss		0.09
		(0.05)
Kleibergen-Paap Wald F-statistic	17.08	1.819
Observations	10,447	8,656
Controls	Yes	Yes
Bank and Year FE	Yes	Yes

Table 7: The role of individual bankers—Assortative matching

This table shows results from linear regressions of the historic gender gap at a banker's new employer (prior to the banker joining) on the banker's own historic gender gap. The dependent variable in models 1 and 3 is the gender gap in titles at the banker's current *office*. 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 focus on the most senior banker at an office, i.e., the "Boss". The gender gap is defined as the difference between the number of male and female senior bankers at an office (or bank), scaled by the total number of senior bankers working at the respective office (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 titles and, as a tiebreaker, 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 the 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	Office	Bank	Office	Bank
	(1)	(2)	(3)	(4)
Gender gap in titles at old office	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 shows results from linear regressions of gender gaps at the banker's new employer following the banker joining 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 *office*. 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 an office, i.e., the "Boss". The gender gap is defined as the difference between the number of male and female senior bankers at an office (or bank), scaled by the total number of senior bankers working at the respective office (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 titles and, as a tiebreaker, 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 the 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	Office	Bank	Office	Bank
	(1)	(2)	(3)	(4)
Gender gap in titles at old office	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—Family responsibilities
This table shows results from linear regressions of bankers' probability of being promoted (in %) on an indicator for female bankers interacted with the following indicators: Model 1 shows interactions with an indicator 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 state–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 the 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 role		
	(1)	(2)	(3)
Female × Banker switched	-4.93**		
	(-2.23)		
Female × Pregnancy laws		-1.92	
		(-0.48)	
Female × Maternity leave			-3.55
			(-0.92)
Banker switched	5.90***		
	(4.09)		
Female	-0.23	-1.33	-1.38
	(-0.40)	(-1.20)	(-1.39)
Observations	7,002	5,148	5,148
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 results from linear regressions of bankers' probability of being promoted (in %) on an indicator for female bankers interacted with the following indicators: Models 1 and 2 show interactions with an indicator 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 an indicator 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, an indicator for bankers that work in a bank office that has only female leadership and the percentage of women in an office'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 the 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 role					
	Education		Global leadership		Local leadership	
	(1)	(2)	(3)	(4)	(5)	(6)
Female × Top school	-2.27					
	(-0.95)					
Female × MBA		-1.12				
		(-0.43)				
Female × Female on Board			0.07			
			(0.04)			
Female × Female CEO/CFO				1.70		
				(0.56)		
Female × Only female seniors					10.70***	
					(4.03)	
Female × %Female seniors						31.27***
						(6.90)
Top school	0.24					
	(0.18)					
MBA		-0.24				
		(-0.19)				
Female	-0.03	0.05	-1.35	-1.39	-6.97***	-8.00***
	(-0.02)	(0.02)	(-0.99)	(-1.43)	(-5.98)	(-6.50)
Observations	2,894	2,894	4,237	4,237	4,080	4,080
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 results from linear regressions of bankers' probability of being promoted to a senior role (in %) on an indicator for female bankers interacted with an indicator for banks that have settled a discrimination lawsuit. In model 1, the female banker indicator is interacted with an indicator for banks that settled a lawsuit regarding gender-related 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 the 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 role		
	(1)	(2)	(3)
Female banker × Gender lawsuits$_{[t-1,t]}$	3.00*	5.45**	
	(2.08)	(2.35)	
Female banker × Gender lawsuits$_{t+1}$		2.43	
		(0.97)	
Female banker × Gender lawsuits$_{t+2}$		3.43	
		(0.85)	
Female banker × Gender lawsuits$_{[t+3,T]}$		0.08	
		(0.02)	
Female banker × Other lawsuits$_{[t-1,t]}$			-3.36*
			(-1.82)
Observations	2,837	2,837	2,837
R-squared	0.31	0.31	0.31
Controls	Yes	Yes	Yes
Bank×Year×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.

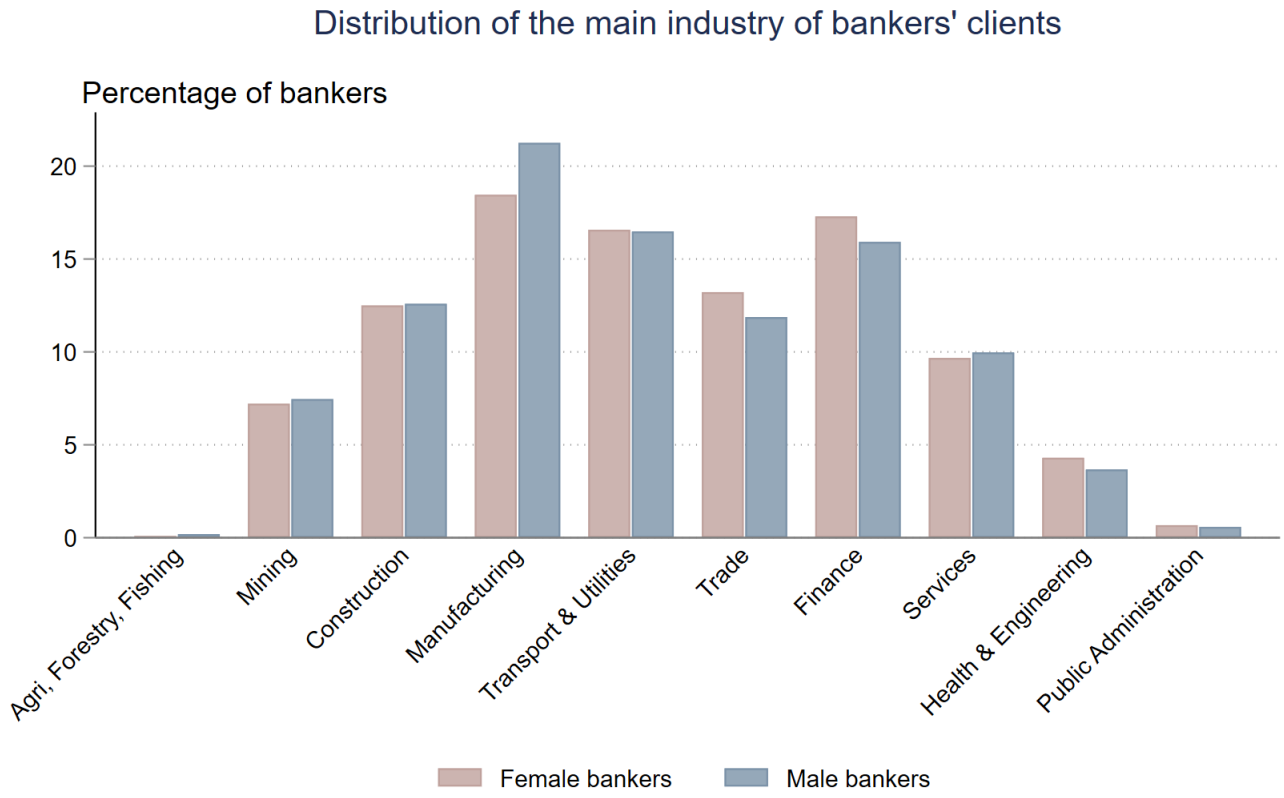
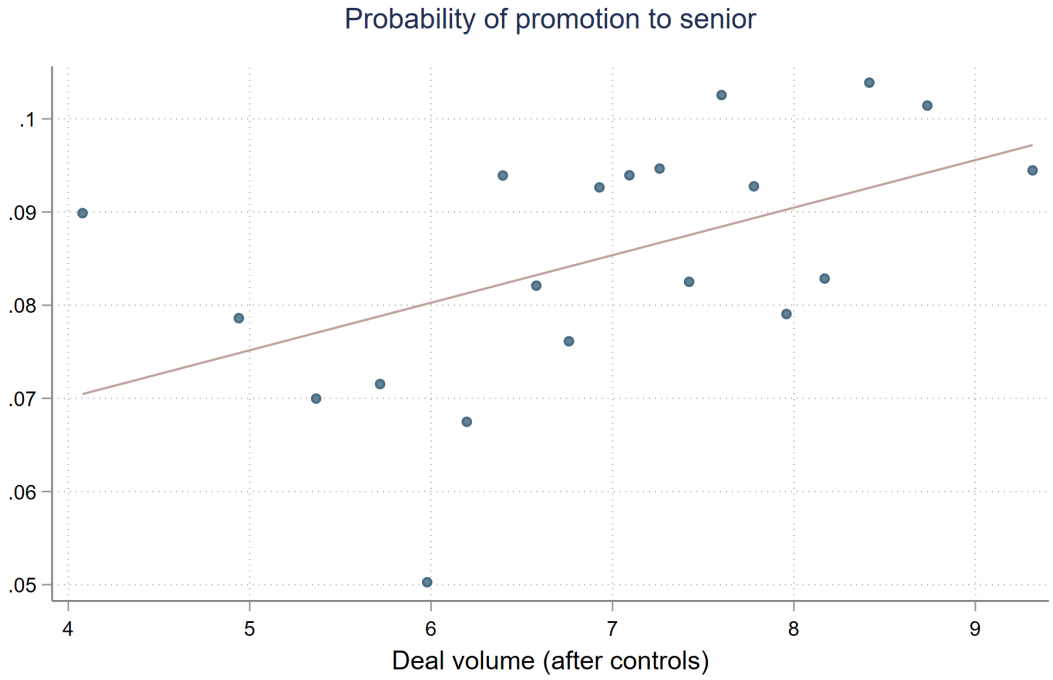


Figure A2: Promotion to senior role and banker performance
The figure shows a binned scatterplot of the probability of promotion to a senior role and the deal volume generated by bankers. The scatterplot controls for banker tenure and squared tenure as well as bank and year fixed effects. The sample includes all bankers in junior roles.



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.
Managerial performance	Managerial performance cap the "manager value added" of bosses in shaping the performance of subordinate bankers working at the same office, controlling for average performance at the given bank during the given year. Following Benson et al. (2019), managerial performance is computed using AKM (Abowd et al., 1999) regressions that draw inference from changes in bosses at a bank office.
Banker characteristics	
Female banker	Indicator for female bankers based on census names.
Boss	Indicator for the banker that has the most senior title at a given bank office during a given year. Tenure is used to account for ties. In case no unique Boss can be identified, the variable is set to missing.
Promotion	Indicator for the year when a banker's title changes, e.g., from Vice President to Director.
Promotion to senior role	Indicator for the year when a banker's title changes to Senior Vice President or to Director.
Promotion to boss	Indicator for the year when a banker is promoted to the most senior role within an office.
Pregnancy laws	Measure of strength of the state's pregnancy protection laws as reported in the "Best States for Working Women Index."

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Maternity leave	Indicator for a banker that lives in a state that offers mandatory paid maternity leave for women.
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.
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 - 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 A3: 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 and state 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	8,256	3,278
F-Statistic Joint F(1616,8160)	8.33	2.05
F-Statistic Banker F(1545,8160)	6.77	1.42
F-Statistic Bank F(71,8160)	5.93	4.56
R-Squared of:		
Bankers	0.581	0.305
Banks	0.072	0.109
Control Variables	0.007	0.090

Table A4: 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