Board Gender Quotas and Female Borrowing: Evidence from Loan-Level Data*

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Abstract

We examine how female board representation affects banks' lending to female-led firms, using Italy's mandatory gender quota and loan-level data. As banks appoint more female directors, they lend more to female-led firms on both the intensive and extensive margins. Loan application data reveal a supply-side shift: approval rates for female borrowers rise while application rates remain unchanged. The quota also reshaped banks' internal labor markets, raising promotion rates and wages for female employees, likely bringing more women into roles that influence lending decisions and thereby improving information processing in credit allocation. Consistent with this, the additional credit is concentrated among firms where information asymmetries are greatest, does not increase non-performing exposures, and is associated with real growth in female borrowers' firms. Board quality does not deteriorate following the reform.

JEL Classifications: D22, G21, G32, J01, J71
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1 Introduction

Women often face greater barriers than men in accessing capital. Despite presenting similar risk profiles, female borrowers pay higher interest rates on consumer credit, female entrepreneurs receive less funding from venture capitalists, and women-owned firms are less likely to secure commercial loans.[1] These disparities contribute to fewer female-led firms and may reflect misallocation as productive women-owned businesses may fail to obtain credit on equal terms. When viable firms are constrained in capital markets, the costs may extend beyond individual borrowers, with broader implications for innovation and job creation (Morazzoni and Sy, 2022).

One natural explanation is that the people allocating capital are overwhelmingly men. Women hold only 35% of loan officer positions (Huang, Mayer, and Miller, 2024) and just 20% of banking roles more generally (Ceccarelli, Herpfer, and Ongena, 2024), with representation declining further at senior levels (Athey, Avery, and Zemsky, 2000; Matsa and Miller, 2011; Husain, Matsa, and Miller, 2023).

Such representation gaps may, in turn, shape how banks operate and interact with their clients. We ask whether increasing the share of women on the supply side of capital improves financing outcomes for female borrowers, focusing on bank boards as a potential lever for change. We propose two channels through which greater female board representation might improve credit access for female-led firms. The first is organizational: female directors may reshape banks' internal hierarchies, increasing the share of women in middle management roles that directly influence lending decisions. The second is informational: a more gender-diverse lending workforce may reduce the frictions that arise when male officers evaluate female-led firms. Female officers may process soft information about female-led firms more effectively (Bagues, Sylos-Labini, and Zinovyeva, 2017), and may be less prone to statistical discrimination that uses borrower gender as a proxy for creditworthiness (Bellucci, Borisov, and Zazzaro, 2010; Alesina, Lotti, and Mistrulli, 2013). The two channels are complementary: the organizational channel is the conduit through which board-level diversity may

[1] Most studies document gender-related disadvantages in debt and equity markets. For example, Alesina, Lotti, and Mistrulli (2013) show that, despite similar levels of risk, female borrowers pay higher interest rates. Similarly, Delis, Hasan, Iosifidi, and Ongena (2022) document that male entrepreneurs seek loans more aggressively, resulting in higher firm performance. Finally, regarding equity financing, Ewens and Townsend (2020) and Hebert (2023) find that early-stage investors favor male over otherwise similar female entrepreneurs. Nevertheless, other papers do not detect such disadvantages (Asiedu, Freeman, and Nti-Addae, 2012; Asiedu, Kalonda-Kanyama, Ndikumana, and Nti-Addae, 2013; Ongena and Popov, 2016).

reach the loan officer level, with the informational channel operating downstream once more women occupy roles that directly influence credit decisions.

We test for the relevance of these channels by examining whether female board representation improves financing outcomes for female-led firms, leveraging the staggered introduction of a mandatory gender quota for the boards of publicly listed firms in Italy in 2012 ("Legge Golfo-Mosca"). This regulation required firms to raise the share of directors from the underrepresented gender to 20% after August 2012, increasing to 33% over the following two board renewals (typically every three years). As a result, female board representation in listed banks rose significantly, by 18 percentage points, compared to unaffected non-listed banks. We find that increasing female representation on bank boards significantly expands credit access for female-led firms.

We combine data from Italy's Credit Registry (CR) on all credit relationships of private firms from 2009 to 2019, along with detailed ownership information, to identify lending relationships between listed banks and female-led firms. We define a firm as female-led if women own more than 50% of its equity. Using a staggered difference-in-difference-in-differences (DDD) design, we compare the evolution of credit relationships between listed and non-listed banks, and both female- and male-led firms, following the introduction of the gender quota.

Our results show that greater female board representation leads to a significant expansion in credit access for female-led firms. Credit growth in listed bank-female firm relationships rises by 0.8 percentage points (equivalent to 28% of the in-sample mean) and the likelihood of a listed bank forming a new credit relationship with a female-led firm increases by 1.4 percentage points. This second finding is particularly striking given that female-led firms, despite constituting 32% of all Italian firms, account for only 16% of credit relationships. Importantly, this expansion reflects an organic increase in capital available to female-led firms: credit availability at the firm level rises by 0.9 percentage points, confirming that female-led firms are accessing genuinely new financing.

Our results remain consistent across a wide range of robustness checks. Most importantly, the lending effects are stronger at banks that were further from the mandated threshold prior to the reform, consistent with larger increases in female board representation driving the results and ruling out the interpretation that our findings reflect a generic post-2012 shift in listed banks' governance or external pressure to improve gender equity. Furthermore, because our identification exploits the staggered implementation of the reform across banks, we verify that the results are robust to

alternative estimators for staggered treatment adoption, including the stacked estimator of Gormley and Matsa (2011) and the approach of Callaway and Sant'Anna (2021). The findings are also similar when we define female-led firms more strictly (as fully female-owned) or use the share of female-owned equity as a continuous measure. Finally, we find no evidence that the results are driven by bank specialization (Paravisini, Rappoport, and Schnabl, 2023).

Next, we investigate the mechanisms underlying this shift. We begin by asking whether the credit expansion reflects a change in borrower demand or in credit supply. Using loan application data, we show that approval rates for female borrowers at listed banks rise by 2–3 percentage points following the quota, an increase of more than 10% relative to the baseline, while application rates increase by only 0.34–0.54 percentage points, equivalent to around 1% of the baseline. The approval rate effect is therefore roughly ten times larger than the application rate effect, suggesting that the credit expansion is primarily supply-driven.

In terms of supply-side channels, we begin by ruling out the most direct mechanism: that female directors personally redirect credit toward female-led firms through their influence on individual lending decisions. We find that post-quota female appointees are no more likely than their predecessors to sit on lending committees or to have prior banking-sector experience, making it unlikely that the lending effects operate through direct board involvement in credit allocation.

The first supply-side channel for which we find evidence is organizational: in the spirit of Bertrand, Black, Jensen, and Lleras-Muney (2019), Maida and Weber (2022), and Ladant and Paul-Delvaux (2025), we ask whether the quota reshaped banks' internal labor markets. Using administrative micro-data from the Italian Pension Institute (INPS) covering all workers employed in Italian banks from 2009 to 2018, we find that in listed banks affected by the quota, the probability that a female employee is promoted to middle management rises by 0.6 percentage points, a nearly 12% increase relative to baseline. We also find that female employees at all levels enjoy higher wages following the quota. Consistent with this channel, we also find suggestive evidence that post-quota female directors are more represented on HR and remuneration committees, which govern promotion and compensation practices.

The second supply-side channel is informational. If the quota reduced informational frictions rather than simply shifting banks' lending preferences, the additional credit should flow to borrowers where such frictions are most binding and should not come at the cost of higher credit risk.

Informational frictions are likely greatest for smaller firms, which face less stringent disclosure requirements and rely more heavily on soft information in credit relationships. Consistent with this view, we find that the credit expansion is concentrated among smaller firms, with no significant effects for large firms. Importantly, the additional lending is not associated with higher ex-ante default probabilities, higher capital costs, or a greater incidence of non-performing loans (NPLs). Board quality also does not deteriorate following the reform: post-quota female appointees display at least as strong educational credentials and executive track records as their predecessors. Taken together, these findings suggest that the expansion in lending reflects improved screening of female-led firms rather than a broader shift in banks' risk appetite.

Finally, we examine whether the increase in credit availability for female-led firms affects their behavior. We document significant real effects of improved access to credit: these firms invest more in tangible assets, increase their liquidity, and expand their assets and revenues. Taken together, these findings contradict the hypothesis that increased lending to female borrowers is costly for banks and are inconsistent with the view that the introduction of the gender quota led to suboptimal lending policies. Instead, the evidence suggests that the expansion of lending to female-led firms represents a positive net present value opportunity for listed banks, likely reflecting reduced information frictions between lenders and borrowers.

Related literature and contribution. We contribute to the literature on gender gaps in access to finance by showing that increasing female representation on the supply side of capital causally improves credit access for female-led firms. While prior studies document gender-related financing frictions (e.g., Muravyev, Talavera, and Schäfer, 2009; Bellucci, Borisov, and Zazzaro, 2010; Alesina, Lotti, and Mistrulli, 2013; Ongena and Popov, 2016; Beck, Behr, and Madestam, 2018; Morazzoni and Sy, 2022; Delis, Hasan, Iosifidi, and Ongena, 2022; Hebert, 2023), little is known about how such disparities can be reduced. We address this question by examining the effects of a mandatory gender quota on bank boards. Despite considerable evidence on the implications of mandatory gender quotas for firm performance, governance, exit, and director selection,[2] we lack evidence on whether

[2]See, for example, Ahern and Dittmar (2012), Matsa and Miller (2013), Bøhren and Staubo (2014), and Eckbo, Nygaard, and Thorburn (2022) for Norway, Fedorets, Gibert, and Burow (2019) for Germany, Rebérioux and Roudaut (2019) and Ferreira, Ginglinger, Laguna, and Skalli (2021) for France, Greene, Intintoli, and Kahle (2020), Hwang, Shivdasani, and Simintzi (2021), and von Meyerinck, Niessen-Ruenzi, Schmid, and Solomon (2022) for California, De Vita and Magliocco (2018), Baltrunaite, Cannella, Mocetti, and Roma (2023), Mazzotta and Ferraro (2020), and Ferrari, Ferraro, Profeta, and Pronzato (2022) for Italy, and Kuzmina and Melentyeva (2021) for a sample of seven

these quotas affect lending decisions and, consequently, whether they also have effects on (private) firms unaffected by quotas.[3] Using micro-level loan data from Italy, we show that the Italian gender quota has resulted in more lending from banks more exposed to the quota. This increase in lending is largely concentrated among female-led firms, and, importantly, is not accompanied by higher non-performing loan rates, suggesting that banks are expanding access to creditworthy borrowers rather than lowering their lending standards. More broadly, our findings complement Crosignani and Le (2026), who show that stakeholder preferences can similarly shape banks' propensity to lend to underserved groups.

Second, we expand the prior literature on mandatory quotas in two important ways. On the one hand, we provide new evidence on whether board-level quotas reshape internal labor markets. While there is considerable evidence on how gender quotas affect the composition and skill set of boards of directors (e.g., Ahern and Dittmar, 2012; Greene et al., 2020; Ferreira et al., 2021; Hwang et al., 2021; Kuzmina and Melentyeva, 2021; von Meyerinck et al., 2022), research on the broader effects of top-level quotas on the female labor market is limited, and the existing evidence is mixed. Bertrand, Black, Jensen, and Lleras-Muney (2019) find no robust trickle-down effects in Norway, and Maida and Weber (2022) document only small, insignificant increases in female executive representation in Italy through 2016.[4] More recently, Ladant and Paul-Delvaux (2025) find increased female promotions at the top of the hierarchy in France. We document a significant increase in female promotions to middle management in Italian banks, that is, a male-dominated sector in a relatively gender-unequal country, extending this evidence to a new context and a lower tier of the corporate hierarchy. On the other hand, and more distinctively, we provide evidence that mandatory quotas can have effects beyond the firms directly subject to them. Prior work has primarily examined quota effects on listed firms themselves.[5] We show that the Italian quota improved credit access for private firms (most of whom are wholly unaffected by the regulation), establishing a new channel through which

European countries.

[3]Evidence on the effects of quotas on banks can be found in Del Prete and Stefani (2021) and Del Prete, Papini, and Tonello (2024), while Guiso, Schivardi, and Zaccaria (2024) provide evidence of horizontal spillovers on boards of connected private firms.

[4]Our results may differ because our study focuses on the banking sector, which may be more conservative than the average Italian firm, leaving greater room for improvement for female employees. For example, we find an 18% increase in female directors after the quota, whereas Maida and Weber (2022) document an effect of 10%. Furthermore, in contrast to Maida and Weber (2022) who look at a post-quota implementation period of 2–3 years, our study extends to 2019, giving banks more time to adopt the policy.

[5]One notable exception is Guiso, Schivardi, and Zaccaria (2024), who document spillovers to other boards not affected by the quota.

board-level policy shapes outcomes in the broader economy.

Finally, we contribute to the literature on gender gaps in career progression and the effects of female leadership on other women. This line of research has examined gender-related differences in pay as well as hiring, promotion, and demotion practices (e.g., Neumark, Bank, and Van Nort, 1996; Blau and Kahn, 1997; Altonji and Blank, 1999; Goldin and Rouse, 2000; Ginther and Kahn, 2004; Blackaby, Booth, and Frank, 2005; Booth and Leigh, 2010; Moss-Racusin, Dovidio, Brescoll, Graham, and Handelsman, 2012; Azmat and Ferrer, 2017; Cullen and Perez-Truglia, 2023; Bircan, Friebel, and Stahl, 2024) with similar gender gaps in the financial services industry (Egan, Matvos, and Seru, 2022; Huang, Mayer, and Miller, 2024; Benson, Li, and Shue, 2022; Ceccarelli, Herpfer, and Ongena, 2024). This literature has also investigated the effects women in leadership positions have on other female employees (e.g., Broder, 1993; Bertrand, Goldin, and Katz, 2010; Beaman, Duflo, Pande, and Topalova, 2012; De Paola and Scoppa, 2015; Bagues, Sylos-Labini, and Zinovyeva, 2017; Matsa and Miller, 2011; Kunze and Miller, 2017; Flabbi, Macis, Moro, and Schivardi, 2019; Périlleux and Szafarz, 2022; Fortin, Markevych, and Rehavi, 2024). We show that greater female representation at board level translates into more promotions for women in middle management, linking the quota's organizational effects directly to the lending outcomes documented in our first contribution, and providing a concrete mechanism through which top-level diversity reshapes firm behavior

The rest of the paper is organized as follows. Section 2 presents the institutional details of the quota. Section 3 describes the data. Section 4 outlines the impact of the quota on female board representation in Italian banks. Sections 5 and 6 present the effects on lending and shed light on the mechanisms underlying our findings. Finally, Section 7 concludes.

2 The Golfo-Mosca Law (Law 120/2011)

In response to a relatively low share of female directors, Italy enacted a mandatory gender quota on August 12, 2011, referred to as the Golfo-Mosca Law (Law 120/2011). The quota was first discussed in parliament on November 10, 2009, and became binding on August 12, 2012.[6] In contrast to the widely studied Norwegian gender quota, which gave firms five years for compliance, the Italian

[6]A timeline of the law can be found in Internet Appendix A1.

setting provides a tighter timeline, allowing for a relatively precise estimation of the effects of the quota.

In publicly-listed companies in Italy, board renewals generally occur every three years, with the majority of these renewals happening between March and June. The quota requires listed limited liability companies in Italy to increase the share of directors of the underrepresented gender to 20% in the first board renewal after August 2012. This share gradually increased to 33% in the subsequent two board renewals, and remained in place until 2022, when the law was originally set to expire. However, in December 2019, the law was amended to include three more renewals of the board (including the last one with a quota of one third), with a quota of 40% for the underrepresented gender.

The regulatory board of the Italian stock exchange, CONSOB, monitors compliance with the quota. In case a firm fails to meet its target, CONSOB issues a warning. If a firm remains non-compliant after four months, CONSOB issues a fine ranging from a minimum of EUR 100,000 to a maximum of EUR 1,000,000. After another three months of non-compliance the board is dissolved. This escalating enforcement structure gives the reform credible bite, making compliance effectively mandatory for listed firms.

To identify the effect of the gender quota on bank lending to female-led firms, we exploit two characteristics of the reform, resulting in a staggered difference-in-differences (DID) design. First, the reform targeted listed banks, allowing us to partition Italian banks into two groups: treated (publicly-listed banks) and control (non-listed) banks. Second, the timing of the treatment varies because the reform's requirements became mandatory only after the listed banks' first board renewal, i.e., banks renewing their boards later experience a later treatment.[7]

Importantly, we add another dimension to our analysis by focusing on whether the borrowing firm is female-led. We define a firm as female-led if at least 50% of its equity is owned by women and focus on firms that never switch status to avoid confounding effects. Thus, our design becomes a staggered difference-in-difference-in-differences (DDD) approach, comparing the evolution of credit relationships between listed and non-listed banks and between female- and male-led firms after the first board renewal following the introduction of the quota.

[7]The timing of the renewals is exogenous to the reform since it depends on the schedule of the bank.

3 Data

We obtain the universe of Italian business loans from the Bank of Italy's credit registry, which records all exposures exceeding EUR 30,000.[8] For each loan, we observe the date, amount, and loan type, distinguishing between term loans, self-revolving loans (e.g., credit lines), and auto-liquidating loans (e.g., factoring). The sample is restricted to loans granted to limited liability companies between 2009 and 2019, the latter chosen to exclude the COVID-19 period. Because lending policies are determined at the ultimate parent level, we consolidate lenders at the banking-group level using the group structure as of end-2019, resulting in 146 bank groups.

From the Orbis BvD database (Moody's), we obtain information on the equity ownership of Italian limited liability companies. Using the Italian fiscal code, Orbis identifies owners and implicitly records demographic attributes such as gender and age, which we extract following the procedure in Core (2024).[9] We classify a firm as female-led if women own at least 50% of its equity, and we exclude firms that switch status throughout our sample period.[10] Our sample includes 1,524,175 Italian limited liability companies observed in Orbis between 2009 and 2019, yielding more than 6.5 million firm-year observations, of which 32% pertain to female-led firms.

Data on board members of listed and non-listed banks between 2009 and 2019 come from the OR.SO. database of the Bank of Italy. We extract information for 21 banking groups whose holding companies are listed and for 388 unlisted banks included in the credit registry. The dataset covers more than 23,000 directors over the period. Following the same consolidation approach as above, we aggregate the data at the bank-group-year level, based on the 2019 group structure, obtaining a balanced panel of female board representation for all Italian banks between 2009 and 2019.

Our two main dependent variables are (i) the probability that a credit relationship is established and (ii) credit growth, measured as the mid-point growth rate and capped between –2 and +2 to mitigate the influence of outliers:

$$\frac{\text{credit}_t - \text{credit}_{t-1}}{0.5 \times (\text{credit}_t + \text{credit}_{t-1})}. \tag{1}$$

[8] The reporting threshold was lowered from EUR 75,000 to EUR 30,000 in 2009, which marks the start of our sample period.

[9] This procedure exploits the demographic information embedded in an individual's Italian fiscal code to identify gender and age.

[10] Later in the paper we provide evidence that this choice bears no material effect on the main results.

This midpoint growth rate is preferred over log differences because it accommodates zeros and handles entry into and exit from credit relationships without requiring an ad hoc treatment of missing observations.

Next, we obtain data on banks' information requests to the Credit Registry to proxy for firms' loan applications. These requests are recorded whenever a bank queries the Registry for information on a specific borrower. When a (prospective) borrower applies for a loan at a new bank, the bank is required, as part of its due diligence process, to retrieve information on the borrower's outstanding debt and repayment history from the Credit Registry. We therefore identify a loan application by firm f to bank b in year t whenever we observe (i) an information request by bank b on firm f in year t and (ii) no outstanding credit between firm f and bank b at the end of year $t-1$. This definition therefore captures applications that initiate a new bank–firm relationship, rather than renewals or extensions within existing ones.[11]

We merge data on credit applications and outstanding credit with balance sheet and income statement information from the CERVED database, which covers the entire population of Italian limited liability companies. The final set of variables comes from employee-level records provided by the Italian Pension Institute (INPS), allowing us to study both the probability that an employee is female and the likelihood that a female employee is promoted to middle manager (*Quadri*) or top-level manager (*Dirigenti*).[12] Our final sample includes all full-time employees in Italian banking groups between 2009 and 2018 (i.e., the maximum span available in the database), yielding over 3 million observations.

In our analysis, we compare listed and unlisted banks, making it essential to ensure that institutional differences do not spuriously drive our results. This is particularly relevant given that our sample period encompasses the sovereign debt crisis and the introduction of the Targeted Longer-Term Refinancing Operations (TLTRO), which affected banks of different sizes unevenly (Carpinelli and Crosignani, 2021). To mitigate this risk, we focus on the top quartile of banks by credit volume at the beginning of our sample period, yielding a total of 34 banks, of which 13

[11] Our proxy does not capture loan applications submitted to a bank with which the firm already has an ongoing credit relationship. In such cases, the bank already holds the necessary borrower information and does not need to request it again from the Credit Registry.

[12] Under the Italian Civil Code, middle managers (*Quadri*) retain operative responsibilities while also supervising groups of employees, whereas top-level managers (*Dirigenti*) have broad managerial autonomy over the entire firm or one of its business units.

are listed and 21 non-listed. Our sample includes all but six smaller listed banks, most of which specialize in private and investment banking. Importantly, as we show in Section 5.3, our main results are robust to including all Italian banks in the sample.

Table 1 reports bank-level summary statistics for listed and non-listed banks in 2010, the year prior to the approval of the quota. While the two groups differ substantially in size, measured as either total assets or total credit, they are broadly comparable in terms of risk-weighted assets, leverage, liquidity, capital ratios, and the share of credit extended to female-led firms. Similarly, the share of female employees is comparable across listed and non-listed banks, both for regular employees, middle managers, and top managers. Thus, despite size differences, the two groups are largely similar.

Table 2 presents univariate statistics for the main variables in our sample. The first set of variables is measured at the bank-year level. The average bank in our sample has almost 12 directors on its board, of whom only 12% are women.

The second set of variables pertains to credit relationship-level information. As larger institutions, listed banks provide the majority (72%) of loan volume, with female-led firms receiving 16% of the total volume. The average credit amount outstanding in a bank-firm relationship is approximately €271,000 (i.e., $e^{12.51}$), with a similar median value. Average credit growth in the sample is negative (-3%), likely reflecting the aftermath of the global financial crisis and the onset of the sovereign debt crisis in Italy.

Finally, the last set of variables is at the employee level. In our sample, 40% of bank employees are middle managers, while only 2% occupy top-level management positions. Promotions are rare in the sample, with a 5 p.p. likelihood. Female representation declines at higher levels of the corporate hierarchy: women account for 43% of all employees, about 33% of middle managers, and less than 1% of top-level managers. Taken together, these patterns confirm that the banking sector, both in its lending behavior and internal labor market, exhibits the gender gaps that motivate our analysis.

4 Female board representation in Italian banks

We first examine the impact of the gender quota on the composition of the board of directors of Italian listed banks. Panel A in Figure 1 plots the share of female directors in listed and non-listed

banks around the introduction of the mandatory gender quota in Italy. We observe a strong increase in female board representation over the sample period. Before the enactment of the gender quota, the share of female directors in listed Italian banks was lower than 10%. By 2019, the end of our sample period, this share had reached almost 40% — above the mandatory threshold of 33%, and consistent with the subsequent increase in the quota to 40%.

Even though the quota does not apply to non-listed banks, these banks also experienced a small increase in the share of female directors after 2010, presumably due to a general time trend towards greater gender equality, consistent with the results of Guiso, Schivardi, and Zaccaria (2024). Importantly, the share of female directors in both listed and non-listed banks remained stable before the introduction of the quota. Panel B shows that Italian banks did not increase their board size to accommodate more female directors after the quota was enacted. This implies that listed banks replaced some of their male directors, consistent with larger boards being detrimental to firm performance (Yermack, 1996; Jenter, Schmid, and Urban, 2023).

To quantify the effect of the quota on female board representation and to verify the parallel trends assumption, we estimate the following difference-in-differences (DID) regression:

$$\text{Female directors}_{b,t} = \beta \text{Listed}_b \times \text{Post}_{b,t} + \eta_b + \phi_t + \varepsilon_{b,t}, \tag{2}$$

where $\text{Female directors}_{b,t}$ is the share of female directors in bank b in year t. $\text{Post}_{b,t}$ is a dummy equal to 1 from bank's b first renewal of the board after August 2012, and 0 otherwise. As banks renew their boards at different points of time, the post period varies from bank to bank. Listed_b is a dummy equal to 1 if bank b is listed at the time of the quota, and 0 otherwise. The coefficient of interest is β, the differential effect of the quota on listed and unlisted Italian banks. η_b and ϕ_t denote bank and year fixed effects, respectively. As the number of banks in the sample is relatively low, we report Driscoll-Kraay standard errors in parentheses to avoid issues with the small number of clusters (Driscoll and Kraay, 1998; Abadie, Athey, Imbens, and Wooldridge, 2023).

Table 3 provides the estimates of Equation (2). In Model 2, which includes bank and year fixed effects, we find that the share of female directors in listed banks increases by almost 18 percentage points (p.p.) relative to unlisted banks. Model 3 extends the analysis to all Italian banks (as opposed to only the 34 largest banks) and the results barely change.

As the timing of board renewals differs across banks, Equation (2) represents a staggered DID model, which may suffer from negative weighting due to dynamic treatment effects. To address this concern, Model 4 in Table 3 re-estimates the analysis from Model 2 using the stacked DID approach of Gormley and Matsa (2011). In this approach, we first construct the control group for each event (i.e., a bank's board renewal under the quota) by excluding already-treated observations and only using never-treated and not-yet-treated firms in the control group, and then creating a new sample of stacked events. Finally, we re-estimate the DID model using this new sample, including bank-event and event-year fixed effects, where an event refers to the corresponding board renewal. The results in Model 4 reinforce this conclusion: the estimated coefficient is nearly identical to that in Model 2, indicating that negative weighting and dynamic effects are not substantial in our setting.

Panel A in Figure 2 plots regression estimates of the share of female directors on interactions of the listed dummy and time dummies along with the corresponding 95% confidence intervals. The time dummies are defined relative to the first renewal of the board after August 2012 ($t = 0$). The interaction for the last year before the first renewal represents the omitted category. The figure confirms the univariate plot in Figure 1. After the introduction of the quota, there is an increase in the share of female directors in listed Italian banks when compared to their unlisted counterparts. In the first board renewal, treated banks increase the share of female directors by roughly 10 p.p. relative to unlisted banks. The increase in the share of female directors in the second renewal ($t = 3$) is a bit smaller in magnitude, likely because unlisted banks also increased their female board representation over time (Figure 1).[13] The coefficients in the pre-reform period show no evidence of pre-trends, suggesting that the parallel trends assumption is unlikely to be violated.

Panel B of Figure 2 corroborates this pattern by applying the Callaway and Sant'Anna (2021) estimator, which explicitly accounts for potential biases arising from negative weighting in staggered treatment settings. As was the case in Table 3 with the stacked DID approach of Gormley and Matsa (2011), the results of our staggered design are not sensitive to the choice of estimator. We find a very similar pattern and an average treatment effect on the treated (ATT) of 0.14, significant at the 1% level. The somewhat smaller magnitude is consistent with the two estimators weighting treated observations differently.

[13] In the regression analyses, time dummies are coded relative to each bank's treatment year ($t = 0$), which is why the increase appears more abrupt than in the univariate plot.

Table A2 and Figure A1 in the Internet Appendix show that the board size in listed banks does not significantly change relative to unlisted banks after the quota. This suggests that listed banks increased the share of female directors by replacing male directors with women rather than by increasing the size of the board. To the extent that the replaced male directors were more experienced or better connected than their female successors—a concern often raised in the quota literature—this substitution could reduce the quality of board oversight. Our results on lending outcomes, however, suggest that any such quality effect is at most second-order relative to the benefits of greater gender diversity.

5 Bank lending around the quota

In this section, we examine the impact of the gender quota on lending to female-led firms, both in the intensive and extensive margins.

5.1 Intensive margin

First, we investigate the impact of the quota on the intensive margin of credit using the following triple-difference (difference-in-difference-in-differences, DDD) specification:

$$\begin{aligned} \text{CR}_{b,f,t} =& \beta_1 \text{Listed}_b \times \text{Post}_{b,t} \times \text{Female maj}_f + \beta_2 \text{Post}_{b,t} \times \text{Female maj}_f + \\ &+ \eta_{b,f} + \phi_{b,t} + \psi_{f,t} + \varepsilon_{b,f,t}, \end{aligned} \tag{3}$$

where $\text{CR}_{b,f,t}$ represents mid-point credit growth (cf. Equation 1) between bank b and firm f in year t. The main coefficient of interest is β_1, which captures whether credit growth is higher for female-led firms borrowing from listed banks after the reform, relative to male-led firms and firms borrowing from non-listed banks, and thus represents the DDD estimator. The model includes bank-firm, bank-year, and firm-year fixed effects, allowing us to isolate the supply-side component of this effect by controlling for unobserved demand-side variation at the firm–year level. In particular, firm-year fixed effects capture shifts in a firm's aggregate credit demand that might otherwise bias our estimates (Khwaja and Mian, 2008).[14]

[14] A potential caveat of this approach is that it excludes single-bank relationships from the analysis. This concern is negligible in the Italian context given the prevalence of multiple lending relationships in the country (Detragiache, Garella, and Guiso, 2000; Gobbi and Sette, 2014). In our sample, around 58% of firms are multi-banked, accounting

Table 4 presents the results. Models 1 to 3 progressively add fixed effects until we arrive at the fully saturated specification in Model 3, which includes bank–firm, bank–year, and firm–year fixed effects. The gender quota has a positive and statistically significant effect on the amount of credit extended to female-led firms. Specifically, in Model 3, credit growth for female-led firms with listed banks after the board renewal (treated banks) increases by 0.81 percentage points, corresponding to 28% of the in-sample mean of credit growth.

As our DDD approach relies on the staggered timing of the reform for individual banks, we again adopt the stacked design of Gormley and Matsa (2011). Specifically, we use not-yet-treated listed banks as the control group and include bank–event and event–year fixed effects, where each event corresponds to a board renewal. Model 4 of Table 4 suggests that the coefficients remain largely unchanged when using the stacked DDD specification, indicating that treatment heterogeneity is unlikely to play a major role in our setting.[15]

It is important to note that the intensive-margin results do not capture the full extent of the credit effect. In particular, if female-owned firms reallocated existing credit relationships from unlisted to listed banks upon treatment, we would observe a positive coefficient at the loan level but no corresponding effect at the firm level. To assess whether the total credit received by female-owned firms actually increases, Model 5 of Table 4 presents a specification aggregated at the firm level.

To aggregate the sample at the firm level, we redefine our main independent variable as follows. In each year t, we measure the share of total lending to firm f that comes from any listed bank b treated after their first board renewal in year t, denoted as SharePostListed. We compute the share as:

$$\text{SharePostListed}_{f,t} = \frac{\sum_{b=1}^{n} \text{Credit}_{b,f,t} \times \text{Listed}_b \times \text{Post}_{b,t}}{\text{Total credit}_{f,t}}, \tag{4}$$

i.e., the sum of credit to firm f by treated bank b at time t, divided by the firm's total credit at t. We then interact the lagged value of this variable with a dummy equal to 1 if the firm is female-owned. The lag is used because the contemporaneous share of credit is endogenously determined with respect to credit growth.

for 78% of observations.

[15] Because there are four events (i.e., board renewals of listed banks in 2012, 2013, 2014, and 2015), the number of observations in Model 4 includes control observations (i.e., those of private banks) four times, and those of listed banks that renew their boards in 2015, 2014, and 2013, four, three, and two times, respectively.

The main limitation of this approach is that it no longer allows us to control for time-varying demand factors through firm–year fixed effects. To account for firm-level demand, we adopt a procedure inspired by Amiti and Weinstein (2018): we first estimate the firm–year fixed effects using Model 3 in Table 4 and then include them as controls in the firm-level specification. In addition, the regression includes firm and year fixed effects, estimated separately for female-owned and male-owned firms, to further account for systematic differences across firm types.

Model 5 of Table 4 shows that the firm-level estimate is 0.85 percentage points, statistically significant at the 5% level. This value is nearly identical to that in Model 3, suggesting that the observed supply effects are not driven by a reallocation of credit from unlisted to listed banks by female-owned firms, but instead reflect new credit that these firms are able to obtain as a result of changes in the board.

Our firm-level estimate is also robust to the procedure of Jiménez, Mian, Peydró, and Saurina (2020), which uses loan-level estimates to de-bias firm-level results, based on the following equation:

$$\hat{\bar{\beta}} = \hat{\bar{\beta}}_{\text{OLS}} - (\hat{\beta}_{\text{OLS}} - \hat{\beta}_{\text{FE}}) \cdot \frac{\text{Var}(X_i)}{\text{Var}(\bar{X}_j)}, \tag{5}$$

where $\hat{\beta}_{\text{OLS}}$ is the OLS estimate from a loan-level (i) regression without firm-year fixed effects (i.e., Model 2 in Table 4), while $\hat{\beta}_{\text{FE}}$ is the estimate from the same regression including firm-year fixed effects. Lastly, $\hat{\bar{\beta}}_{\text{OLS}}$ is the OLS estimate from a firm-level (j) regression without firm-year fixed effects, and the final term is a scaling factor proportional to the variances of the main independent variables (i.e., Listed×Post×Female majority at the loan level, i, and SharePostListed×Female majority at the firm level, j).

Applying this procedure, we obtain a comparable coefficient of 0.9 p.p. for the DDD term. This suggests that listed banks extended new credit to female-owned firms as a result of the quota, rather than simply reallocating existing credit, thereby improving these firms' access to finance.

Figure 3 illustrates the time dynamics of the intensive margin effect. To reduce noise in dynamic effects, we aggregate them by board term, ranging from -2 to +2 (i.e., from the second to last board elected before the quota, to the third one elected after). The specification is as follows:

$$\text{CR}_{b,f,t} = \sum_{\tau \neq -1} \beta_{1,\tau} \text{Listed}_b \times \mathbb{1}_{b,\tau} \times \text{Female maj}_f + \beta_2 \text{Post}_{b,t} \times \text{Female maj}_f + \\ + \eta_{b,f} + \phi_{b,t} + \psi_{f,t} + \varepsilon_{b,f,t}, \tag{6}$$

where $\mathbb{1}_{b,\tau}$ are indicators for the years each board (relative to the first board elected under the quota) is in place. All other independent variables and fixed effects are as in Equation 3.

Figure 3 shows that there was no significant difference in credit growth in relationships between female- and male-owned firms with listed and non-listed banks when boards not elected under the quota were in place. Conversely, as boards of listed banks are renewed under the quota, female-owned firms see a significant increase in credit growth, which consolidates throughout the tenure of subsequent boards. Overall, the figure casts reassuring light on the parallel trends assumption being satisfied.

5.2 Extensive margin

Next, we examine whether the quota affected the extensive margin of credit, i.e., the formation of new lending relationships. In particular, we investigate whether listed banks became more likely to establish relationships with female-led firms after the quota came into effect.

We consider the repeated cross-section of new lending relationships, formed between a bank b and a firm f in year τ. We follow Khwaja and Mian (2008) and estimate the following extensive margin-level equation:

$$\text{Lending relation}_{b,f,\tau} = \beta \text{Listed}_b \times \text{Female majority}_f + \eta_b + \phi_f + \gamma_\tau + \psi_{g,\tau} + \varepsilon_{b,f,\tau}, \tag{7}$$

where $\text{Lending relation}_{b,f,\tau}$ is dummy set to 1 if a credit relationship between bank b and borrowing firm f starts after the quota-induced board renewal in year τ, and 0 if the relationship was established before the renewal. Female majority is a dummy equal to 1 if women own more than 50% of the firm's equity at the time of treatment, and 0 otherwise. The main predictor of interest is the interaction between Listed and Female majority.[16]

[16] We do not estimate a yearly panel of bank–firm loan relationships to avoid creating a sparse matrix dominated by non-existent relationships.

η_b and ϕ_f denote bank and firm fixed effects, while γ_τ are fixed effects for the year in which relationship is formed (cohort fixed effects) and $\psi_{g,\tau}$ are interactions between γ_τ fixed effects and borrower-female majority fixed effects (g). In essence, we rule out unobserved heterogeneity due to time-invariant firm and bank factors, as well as time-varying heterogeneity in aggregate and gender-specific borrowing conditions. Again, we use Driscoll-Kraay standard errors (Driscoll and Kraay, 1998). This specification, which follows Khwaja and Mian (2008) and De Jonghe, Dewachter, and Ongena (2020), analyzes whether the probability of starting a relationship in the post-reform period is higher for female-led firms in listed banks.

Table 5 presents the estimates for Equation (7). We observe that listed banks affected by the quota had a 0.71 p.p. higher probability of lending to female-led firms following the quota. This result remains robust when the model is augmented with more granular fixed effects. In addition, the coefficient in the fully saturated model (0.87 p.p., Model 3) corresponds to roughly 1.6% of all credit relationships that have been established after the first renewal under the quota (53.8%).

5.3 Robustness

Thus far, we have shown that all results based on the staggered design (either DID or DDD) remain robust when using the stacked approach of Gormley and Matsa (2011), ruling out treatment heterogeneity as a potential driver of our findings. In this subsection, we present evidence that our results are robust to several alternative specifications.

In our main analysis, a firm is classified as female-led if women hold at least 50% of the borrowing firm's equity, and we exclude firms that would switch female-led status throughout the sample (i.e., switchers). To assess the robustness of our results, we consider alternative criteria for identifying female-led firms and also include the switchers. Tables A3 and A4 in the Internet Appendix report the results for both the intensive and extensive margins of female borrowing, using four alternative proxies for female ownership: Female majority (switchers), a time-variant dummy equal to 1 if women own more than 50% of the firm's equity and 0 otherwise; Mean equity, the average share of the firm's equity held by women throughout the entire sample period; Equity, the time-variant share of the firm's equity held by women; and Full owner, a time-variant dummy equal to 1 if women own 100% of the firm's equity and 0 otherwise.

Our findings indicate that the results for both the extensive and intensive margins are robust

across all alternative definitions of female-led firms. Model 4 in Table A4 displays slightly larger standard errors, likely due to the relatively small number of fully female-owned firms in the sample.[17]

We next test the robustness of our results using an alternative treatment definition that does not rely on the distinction between listed and unlisted banks. Specifically, we examine heterogeneity in the effects across listed banks with higher or lower shares of women on the board prior to the quota. We define a continuous variable, Distance, equal to 0.2 (the quota) minus the share of women on the bank's board in 2010, the year before the law was passed. Distance is set to zero for private banks (i.e., not subject to the quota) or for listed banks whose board share of women in 2010 exceeded 20%. Models 1 to 3 in Table A5 in the Internet Appendix report the estimates for the three main outcomes of interest, i.e., the share of female directors, the probability of forming a new credit relationship, and credit growth. The respective regression equations follow the corresponding tables (Tables 3, 5, and 4), but we replace the Listed dummy by the Distance dummy.

The coefficient in Model 1 of Table A5 is consistent with the results in Table 3: listed banks without any women on the board (i.e., Distance = 0.2) increase the share of women by 0.2×1.020, or exactly 20%, thereby fully complying with the law. Model 2 indicates that the intensive-margin effects are concentrated among listed banks that were farther from the quota. Similarly, Model 3 shows that these banks also become significantly more likely to initiate lending relationships with female-owned firms following the quota, relative to private banks and already compliant listed banks. In all cases, the magnitudes of the effects mirror those in the main analysis, while standard errors are slightly larger. The latter likely reflects the limited variation within the group of listed banks: 8 of the 13 listed intermediaries (among the 34 largest banks in our sample) had no women on the board prior to the quota.

We also test whether our findings could reflect bank specialization (Paravisini, Rappoport, and Schnabl, 2023). For example, if female-led firms are concentrated in specific industries (e.g., due to stereotypes as in Hebert, 2023), the observed increase in lending growth could simply capture shifts in lending toward those industries over time. To rule out this possibility, we follow the methodology of Benetton and Fantino (2021) and interact a control for bank–industry specialization with Listed, Post, and Female Majority.

The results are reported in Table A6 in the Internet Appendix. In Models 1 to 3, we define

[17] Approximately 5.5% of the firms in the sample are fully owned by women.

a dummy variable equal to one if the share of bank b's number of loans in the industry of firm f exceeds the bank's overall loan share at the national level. In Models 4 to 6, the dummy equals one if the share of bank b's credit amount in the industry of firm f exceeds the bank's overall national credit share. The intuition is that these specialization measures capture differential quantity adjustments within industries in which bank b specializes. We find that our results on credit growth remain unaffected by potential changes in bank specialization over time.

6 Understanding the effects of the gender quota on bank lending

The previous section establishes that banks subject to the gender quota expanded lending to female-led firms on both the intensive and extensive margins. We now investigate the mechanisms underlying this shift. We begin by asking whether the credit increase reflects a change in borrower demand or in credit supply. If demand-driven, we should observe an increase in loan applications by female-led firms at listed banks; if supply-driven, we should instead observe higher approval rates without a corresponding rise in applications. We find that approval rates rise while application rates remain largely unchanged, pointing to a supply-side shift.

We next examine which supply-side channels could plausibly account for this shift. Because the most immediate change induced by the quota occurs at the level of the board of directors, we begin by analyzing the characteristics and roles of the newly appointed female directors. This allows us to assess which mechanisms are plausible before testing them directly. We find that post-quota female appointees are of at least equal quality to their predecessors in terms of education and executive experience, ruling out the concern that the quota lowered board quality. We also find that they are no more likely to sit on lending committees or to have prior banking-sector experience than their predecessors, arguing against a direct board-level channel. They are, however, more represented on HR and remuneration committees, pointing toward an indirect organizational channel.

Consistent with the greater representation of female directors on HR committees, the first supply-side channel we examine is organizational: we hypothesize that greater female board representation reshaped banks' internal labor markets, raising female promotion and wage rates, and that these changes expanded the influence of women over credit-related decisions. The second supply-side channel is informational: if the organizational changes improved banks' ability to screen and monitor

female borrowers, the credit expansion should be concentrated among smaller companies, where informational frictions are greatest, and should not be accompanied by an increase in non-performing exposures. Finally, we examine whether female borrowers experienced real growth in assets, revenues, and liquidity following the quota, which would confirm that the additional credit financed productive investment rather than reflecting a change in bank risk appetite.

6.1 Demand or supply?

We start by testing whether the credit increase reflects a change in borrower demand. Because the *Golfo-Mosca* Law was publicly visible and explicitly targeted female representation at the top of listed firms, prospective female borrowers may have updated their beliefs about listed banks' receptiveness following the reform, becoming more likely to apply for credit at those institutions. If so, we should observe an increase in loan applications by female-led firms at listed banks after the quota. If instead the expansion is supply-driven, we should observe higher approval rates without a corresponding rise in applications.

To test for this, we use data on credit applications as described in Section 3. By construction, we observe only the first application a given firm f makes to bank b, but not subsequent ones. The resulting dataset therefore forms a repeated cross-section of first credit applications.

Our empirical specification follows Equation (7). The dependent variable captures whether an application by firm f is made to a listed bank after the enactment of the quota. We include fixed effects for bank, firm, and application year, and in the most restrictive specification estimate the model separately for female- and male-led firms.

Results are reported in Table 6. Depending on the specification, applications by female-led firms to listed banks are 0.34 to 0.54 percentage points more likely to occur after the quota. Given that roughly 48% of applications in the sample take place post-reform, this corresponds to an increase of about 1% in the likelihood that a female-led firm applies to a listed bank. While statistically significant, these effects are small relative to the overall increase in credit extended to female firms. This suggests that changes in borrower demand play at most a limited role, motivating our focus on supply-side explanations.

We next test whether the credit expansion instead reflects a change in listed banks' willingness to approve applications from female borrowers. For this analysis we consider all credit applications by

Italian firms to the 34 banks in our main sample. We define an indicator Approved application$_{f,b,t}$ equal to one if a lending relationship between firm f and bank b is observed to form in year t, and zero otherwise.

We estimate a specification similar to Equation (3), including fixed effects for firm and bank-year, as well as firm-year fixed effects in the most demanding specification. Bank–firm fixed effects cannot be included because firms that are rejected do not reapply to the same bank in our data. To compare otherwise similar applications, we further stratify observations by firm ownership category (female- vs male-owned), firm size quartile, industry (NACE 2-digit), and bank type (listed vs non-listed).

Table 7 reports the results. Applications by female-owned firms to listed banks following the renewal of boards under the quota are between 2 and 3 percentage points more likely to be approved, depending on the specification. These effects are economically meaningful: in the most restrictive specification they correspond to an increase in approval rates of more than 10%. Figure 4 presents estimates from a dynamic specification analogous to Equation (6). Approval rates begin to increase during the tenure of the first and second boards elected under the quota, while no differential trends are observed prior to the reform, consistent with the parallel trends assumption. Taken together, the application and approval results indicate that the credit expansion documented above primarily reflects a supply-side shift in lending behavior at listed banks, rather than an increase in credit demand by female entrepreneurs.

6.2 Supply: Direct board channels and director quality

Having established that the credit expansion is mostly supply-driven, we begin by examining the most direct supply-side mechanisms: (i) whether female directors personally redirect credit toward female-led firms through their involvement in lending decisions, and (ii) whether mandatory gender quotas reduce board quality by forcing firms to appoint less experienced or less qualified directors (e.g., Ahern and Dittmar, 2012). We examine both possibilities using BoardEx data on the characteristics of newly appointed directors.[18]

Table 8 compares the characteristics of new male and female directors appointed in listed banks

[18]While our main analysis uses the OR.SO. database of the Bank of Italy to track board composition, OR.SO. records only the identity and gender of directors and does not contain information on their individual characteristics such as education, career history, or committee assignments. We therefore supplement our analysis with BoardEx, which provides detailed biographical and professional information for each director.

before and after each bank's quota binding year, within a ±6 year window around that date. For each characteristic we report group means as well as the Female × Post difference-in-differences (DID) coefficient, which captures the change in the female-male gap following the quota.

The evidence does not support a quality-deterioration narrative. Post-quota female appointees are younger than their male counterparts, but this gap is stable across periods and the DID coefficient is insignificant, indicating no deterioration relative to the pre-quota baseline. If anything, the educational profile of female directors strengthens: the share holding a PhD rises from 20.0% pre-quota to 22.6% post-quota, remaining well above the male rate of 10.9%. The shares attending an elite school or a top Italian university are similarly stable.[19] These findings are consistent with Ferrari, Ferraro, Profeta, and Pronzato (2022), who document improvements in board-level education following the Italian quota. We also find that the share of newly appointed female directors who have previously served as CEO rises sharply post-quota (from 4.0% to 24.5%), and the DID coefficient of 0.149 is significant at the 10% level. The number of concurrent board seats held by newly appointed female directors converges toward the male level post-quota, suggesting that post-quota female directors are at least as well-connected as their predecessors.

Turning to the direct lending channel, we find that post-quota female appointees are no more likely than their predecessors to sit on lending committees[20] or to have prior banking-sector experience. While these measures are imperfect proxies for direct involvement in individual credit decisions, the absence of changes along these dimensions suggests that the lending effects are unlikely to operate primarily through female directors directly redirecting credit allocation.[21] By contrast, the share of new female directors appointed to the HR and remuneration committee rises from 16.0% pre-quota to 37.3% post-quota, with a positive and sizable DID coefficient of 0.118, though

[19] We distinguish two education variables. *Elite school* is an indicator for attendance at a highly selective institution, defined as one of the following: Bocconi University, LUISS Guido Carli, Sant'Anna School of Advanced Studies, Scuola Normale Superiore, the University of Oxford, the University of Cambridge, the London School of Economics, Sciences Po Paris, MIT, Harvard University, Yale University, Princeton University, Columbia University, Stanford University, and the University of Chicago. *Top Italian university* is a broader indicator that additionally includes Italian universities appearing in the top 10 of the CENSIS rankings or the top 200 of the QS World University Rankings, such as the University of Bologna, Sapienza University of Rome, the University of Milan, and the Politecnico di Milano.

[20] *Lending committee* is an indicator for membership on an executive committee or a related party committee, both of which carry direct or indirect oversight over credit allocation decisions. *HR/Remuneration committee* is an indicator for membership on an appointments, nomination, or remuneration committee, which governs personnel decisions including hiring, promotion, and compensation.

[21] Dittmann, Maug, and Schneider (2009) show that bank employees sitting on the boards of non-financial firms in Germany can advance their banks' business interests by facilitating lending, suggesting that a direct board-level lending channel is not implausible in principle. Our evidence, however, argues against it being the operative mechanism here.

imprecisely estimated. This pattern points away from a direct board-level lending channel and instead toward the organizational channel examined in the next section, whereby the quota reshapes banks' internal hierarchies and brings more women into the managerial roles that directly govern lending decisions.

6.3 Supply: Internal labor markets

Having ruled out a direct board-level channel, we now ask whether the quota reshaped banks' internal labor markets, bringing more women into the managerial and loan officer roles that directly govern lending decisions. Female managers may more accurately process soft information about female-led firms and may be less prone to statistical discrimination, and female board representation may foster such changes through gender-inclusive HR policies, mentorship, or the signaling effect of visible female leadership (Kunze and Miller, 2017; Flabbi, Macis, Moro, and Schivardi, 2019; Hospido, Laeven, and Lamo, 2022; Lagaras, Marchica, Simintzi, and Tsoutsoura, 2023).

Building on the mixed prior evidence on whether board quotas generate broader effects on employees below board level (Bertrand, Black, Jensen, and Lleras-Muney, 2019; Maida and Weber, 2022; Ladant and Paul-Delvaux, 2025), we estimate the following equation:

$$\begin{aligned} \text{Manager}_{b,e,t} = &\beta_1 \text{Female}_e \times \text{Listed}_b \times \text{Post}_{b,t} + \beta_2 \text{Female}_e \times \text{Listed}_b + \\ &+ \beta_3 \text{Female}_e \times \text{Post}_{b,t} + \eta_{b,t} + \phi_e + \psi_{g,t} + \varepsilon_{b,e,t}, \end{aligned} \tag{8}$$

where $\text{Manager}_{b,e,t}$ is a dummy variable indicating whether employee e in bank b had a middle-management position in year t. $\eta_{b,t}$, ϕ_e, and $\psi_{g,t}$ denote bank-year, employee, and gender-year fixed effects, respectively. The coefficient of interest is the triple interaction between Post, Listed, and Female (a dummy equal to one if employee e is a woman). We use Driscoll-Kraay standard errors and restrict the sample to employees who are either rank-and-file or middle managers. This specification, thanks to the inclusion of employee fixed effects (ϕ_e), tests whether the quota had a differential impact on the probability that a female employee is promoted to a middle-management position, in listed versus unlisted banks.

Results from Equation (8) are presented in Table 9. In listed banks affected by the quota, the probability of a female employee being promoted to middle management increases by 0.6 percentage

points (Model 3), with bank-year, gender-year, and worker fixed effects included. The magnitude is sizable: since only 5.2% of all employees in our sample are eventually promoted to middle management, this corresponds to a nearly 12% rise in the probability of promotion for female employees. The results are robust to using the stacked DDD approach of Gormley and Matsa (2011) (Model 4) and to defining treatment as the distance from the quota threshold (Model 4 of Table A5 in the Internet Appendix). Importantly, our results are not driven by a reallocation of workers from unlisted to listed banks: re-estimating Model 3 excluding all workers moving between banks of different listing statuses yields identical results.[22]

In Model 5 of Table 9, we also examine the probability that a female middle manager is promoted to a top-management position. To this end, we restrict the sample to middle and top managers only and use a dummy variable as the outcome that takes a value of one if the employee holds a top-management position, and zero otherwise. The estimated effect is positive, indicating that the reform has also influenced promotion rates at the very top of the organizational hierarchy. We find our results to be robust when re-estimating this effect using the stacked approach in Model 6.

Figure 5 illustrates the dynamic impact of the gender quota on middle-management promotions by replacing the post indicator with dummy variables for the board tenures. The omitted category is the tenure of the last board elected before treatment, and 0 denotes the tenure of the first board renewal following the quota.[23] The graph shows no apparent violation of the parallel trends assumption. Notably, the quota's effect on promotions becomes statistically significant after one year and then increases steadily over time. This pattern suggests that the influence of the quota on managerial promotions unfolds gradually, likely reflecting the time required for organizations to implement changes in their internal labor market policies.

Next, we examine the effect of the quota on the wages of female bank employees. Table A7 in the Internet Appendix builds on Model 3 of Table 9, but uses the natural logarithm of annual wages as the dependent variable. Model 1 includes all bank employees, while Models 2 to 4 separately analyze rank-and-file employees, middle managers, and top managers. We find that, following the quota, female bank employees in affected institutions earned on average 1.3% more than their male counterparts. This effect holds across all employee categories, with the strongest impact observed

[22] This procedure leads to the exclusion of 75,578 worker-bank-year observations, or 2.4% of the sample.

[23] Because employment data stops in 2018, we do not have information on promotion rates during the tenure of the third board elected under the quota (i.e., $t = 2$).

among top managers. These results are consistent with an increase in the demand for female managers following the quota: such managers may have been poached from other banks or appointed to directorships at other firms, thereby strengthening their bargaining power.

Lastly, we examine whether the quota led to an increase in the hiring of female employees. Such an increase could result from the poaching of female candidates from other industries, from greater hiring by unlisted firms or banks not affected by the quota, or from the entry of women into the labor force, for instance, part-time workers or those previously unemployed. For this analysis, we mirror our specification in Equation (7) and consider the cross-section of hiring events. We then define a dummy $\text{Hiring}_{i,b,t}$ that takes a value of one if worker i is hired by bank b after its first renewal of the board following the quota enactment, and zero otherwise. The main independent variable is the product of a dummy Female_i (if worker i is a woman) and Listed_b (if bank b is listed).

Table A8 of the Internet Appendix reports the results. Hiring of female employees increased significantly across all employees (Model 1) and non-managerial employees (Model 2), while the effect is positive but insignificant for middle managers (Model 3) and top managers (Model 4), suggesting the quota did not drive an increase in external hiring at more senior levels.

Taken together, the evidence indicates that female bank employees benefited from higher promotion rates and higher wages as a result of the gender quota. By contrast, while the quota led to increased hiring of junior female employees, there is no evidence of such an effect at more senior levels. Instead, these women were mainly promoted within their organizations, consistent with the role of firm-specific human capital in driving internal advancement Cziraki and Jenter (2022). The results also point to an increased demand for highly qualified female employees, which in turn contributed to higher wages at the top of the hierarchy.

Overall, the findings indicate that the quota reshaped banks' internal labor markets in ways that are likely to have improved information flows and reduced gender-related frictions in lending decisions. The organizational changes documented here provide a plausible micro-foundation for the expansion in lending to female-led firms documented above. Whether these organizational changes translated into improved screening and monitoring of female borrowers is examined in the next section.

6.4 Supply: Information frictions and credit quality

The higher approval rates documented above establish that the credit expansion is supply-driven, but leave open the question of whether it reflects improved screening of female borrowers or a change in banks' lending tastes. These two interpretations have different implications for credit quality. If the pre-quota equilibrium was efficient and the expansion reflects a shift in preferences rather than improved screening, the marginal loans extended post-quota should be riskier and more costly for banks. If instead the quota reduced informational frictions—consistent with the organizational changes documented in the previous section—the additional credit should represent previously unexploited positive-NPV opportunities, with no corresponding increase in risk. We therefore examine the riskiness, cost, and ex-post performance of individual exposures to female-led firms.

Since a firm may appear safe at the time of borrowing but later over-borrow, increasing its risk of financial distress, we consider three measures. First, to assess the ex-ante riskiness of individual exposures, we predict a probability of default (PPD) for each exposure in our sample. We consider the universe of loans in the period 2007–2009 (i.e., before the start of our main sample) and perform a logit regression of a non-performing loan (NPL) indicator for each bank–firm relationship on a set of firm, bank-firm, and loan characteristics.[24] We then apply the estimated coefficients to derive a PPD for each exposure in our sample. Second, we follow the methodology of Acharya, Bergant, Crosignani, Eisert, and McCann (2022) to estimate the cost for bank b to sustain a given exposure to firm f. As inputs, we use the exposure size and the previously computed PPD. We then take the natural logarithm of the resulting capital requirement as a measure of the cost to bank b. Third, we analyze whether the riskiness of exposures increases ex-post by examining the incidence of NPLs up to two years after origination.

The results are presented in Panel A of Table 10. The regression specification follows the intensive-margin Equation (3). Model 1 examines PPDs, while Model 2 analyzes the cost of capital for loans, measured as the logarithm of the exposure amount multiplied by its PPD. Models 3 and 4 employ a dummy variable equal to one if an NPL exists in the bank-firm relationship. Model 3

[24] We use the following characteristics: firm-level Z-score (from CERVED), logarithm of the loan amount, loan amount over the firm's total credit outstanding, and bank-firm exposure by type of loan (credit lines and term loans) as a share of total firm-bank exposure.

considers the status of the lending relationship in year t, while Model 4 investigates the cumulative probability of an NPL occurring within two years after t.

We do not find that exposures to female-led firms by listed banks after the quota exhibit higher PPDs or higher capital requirement costs. Furthermore, there is no evidence that these exposures are more likely to become NPLs. If anything, the evidence points in the opposite direction: when re-estimating this analysis using the stacked-DDD approach of Gormley and Matsa (2011) in Panel B, we find that both the predicted probability of default and the cost of loans to female-led firms decline, although the magnitude of these effects is small.

We further test the information friction hypothesis by examining heterogeneity in lending across firm size, a well-established proxy for informational opacity in the literature. While firm size is only an indirect measure of informational frictions, it has the advantage of being observable and of correlating with reporting requirements: as we describe below, smaller firms in Italy face less stringent disclosure obligations, making their financial condition harder for lenders to assess.

Table 11 presents relationship-level regressions of mid-point credit growth (Models 1 to 3, consistent with Table 4) and the probability of forming a new lending relationship (Models 4 to 6, consistent with Table 5). We split the sample by firm size according to Eurostat criteria, as reporting requirements are stricter for larger firms in Italy, resulting in a more transparent information environment. Specifically, micro-sized enterprises have up to 10 employees, small and medium-sized enterprises (SMEs) have between 10 and 250 employees, and large enterprises have at least 250 employees.

On the intensive margin, the results suggest that the increase in credit is concentrated among SMEs, with no significant changes in credit growth for micro-sized or large firms. The extensive margin estimates show that new lending relationships are predominantly formed with smaller female-led firms. In contrast, we find fewer new credit relationships with large female borrowers, although this effect is imprecisely estimated due to the small number of large firms in the sample. Taken together, these findings indicate that the post-quota expansion in lending primarily benefited female-led firms where information asymmetries are most pronounced—precisely where improved screening would be expected to have the largest effect. This interpretation is further supported by the absence of any deterioration in board quality following the reform, with post-quota female appointees displaying at least as strong educational credentials and executive track records as their

predecessors, ruling out the possibility that the effects are driven by a broad shift in risk appetite.

6.5 Real effects for female borrowers

As a final step, we examine whether the increased lending to female-led firms was associated with real effects for these borrowers. Given the evidence of improved information flows and unchanged credit risk documented above, we expect that female borrowers benefited from the credit expansion by directing it toward productive investment. To test this, we use firm-year-level financial data from CERVED and estimate the following firm-level regression on the sample of borrowing firms:

$$\begin{aligned} y_{f,t} =& \alpha + \beta_1 \text{SharePostListed}_{f,t} \times \text{Female}_f + \text{Log(Total credit)}_{f,t} + \phi_f + \\ &+ \tau_t \times \text{Female majority}_f + \iota_j \times \tau_t + \epsilon_{f,t}, \end{aligned} \tag{9}$$

where $y_{f,t}$ denotes the growth rate of a firm-level outcome of interest, including total assets, tangible and intangible assets, liquidity, revenues, and total employment. $\text{SharePostListed}_{f,t}$ is the share of firm f's credit obtained from a listed bank in year t after the bank has been treated, as defined in Equation (4), and $\text{Log(Total credit)}_{f,t}$ is the natural logarithm of the firm's total credit. To mitigate the influence of outliers, all growth rates are computed as mid-point growth rates. All specifications include firm, female-majority-year, and industry-year ($\iota_j \times \tau_t$) fixed effects.

The results are presented in Table 12. We find that borrowing from a listed bank after the quota was introduced is particularly beneficial for female-owned firms, relative to female-owned firms borrowing exclusively from unlisted banks. Borrowing fully from treated banks is associated with higher growth in several firm-level outcomes: asset growth increases by 0.4 percentage points (around 10% of the mean), tangible asset growth by 0.8 percentage points (133% of the mean, reflecting a low baseline growth rate for this outcome), liquidity growth by 1.4 percentage points (32% of the mean), and revenue growth by 0.8 percentage points (42% of the mean). In contrast, we find no significant differential effects on intangible assets or total employment. This is consistent with intangible investment and hiring decisions operating on longer time horizons than tangible investment or liquidity management.

These results confirm that the additional credit was directed toward productive uses. Female borrowers appear to have used the increased credit to expand their operations, invest more in

tangible assets, and strengthen their liquidity positions.

7 Conclusion

This paper examines how increased female representation on bank boards affects lending to female-led firms, exploiting the mandatory gender quota introduced by the "Legge Golfo-Mosca" in Italy as a natural experiment. By linking board-level diversity to loan-level credit data, we show that the introduction of the quota led listed banks to significantly increase the share of female directors on their boards and to alter their lending behavior toward female-led firms.

Following the reform, listed banks became more likely to form new lending relationships and to expand existing relationships. The increase in lending is concentrated among smaller firms and does not result in higher ex-ante or ex-post credit risk. Using loan application data, we establish that this expansion is supply-driven: approval rates for female borrowers rise substantially following the quota, while application rates increase only modestly. The additional credit reflects an organic expansion of available funding rather than a reallocation of existing credit.

To understand the mechanisms behind these changes, we examine two supply-side channels. First, we find that the quota reshaped banks' internal labor markets: female employees at listed banks experienced higher promotion rates—particularly to middle management—and higher wages. These organizational changes plausibly brought more women into roles with influence over credit decisions. Second, the credit expansion is concentrated among SMEs, where informational frictions are greatest, and is not accompanied by higher default probabilities or NPL incidence, consistent with the quota having reduced informational barriers rather than shifted lending preferences. The improved access to finance is in turn associated with real effects for female-led firms, which subsequently invest more in tangible assets, enhance liquidity, and expand revenues.

Taken together, the evidence suggests that greater female representation in bank leadership improves information processing and screening efficiency, particularly in settings with high informational asymmetries, by reshaping banks' internal hierarchies and bringing more women into decision-making roles. Gender-diverse boards can thereby help identify profitable lending opportunities previously overlooked due to information barriers. Our findings highlight a broader mechanism through which diversity in financial institutions can influence the allocation of credit and, ultimately, firm perfor-

mance. From a policy perspective, this implies that board-level gender quotas have effects that extend well beyond the firms directly subject to the regulation: by changing who allocates capital, they reshape credit markets and generate real economic gains for firms that are themselves entirely unaffected by the mandate. The case for diversity regulation in financial institutions may therefore be considerably stronger than existing evidence—focused primarily on the internal governance of regulated firms—would suggest.

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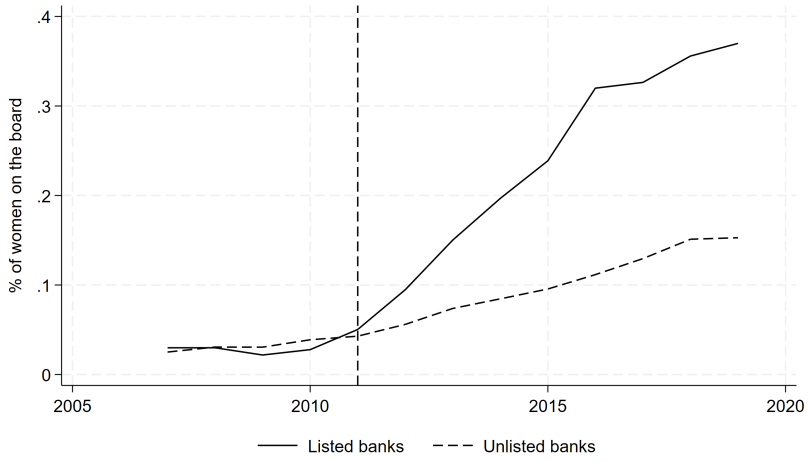
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Figures

Figure 1: **Bank boards around the introduction of the gender quota**

Panel A plots the share of female directors in listed and non-listed banks around the introduction of the mandatory gender quota in Italy. Panel B plots the number of directors. The vertical dashed line indicates the year the gender quota was introduced (2011).

Panel A: Share of female directors



Panel B: Board size

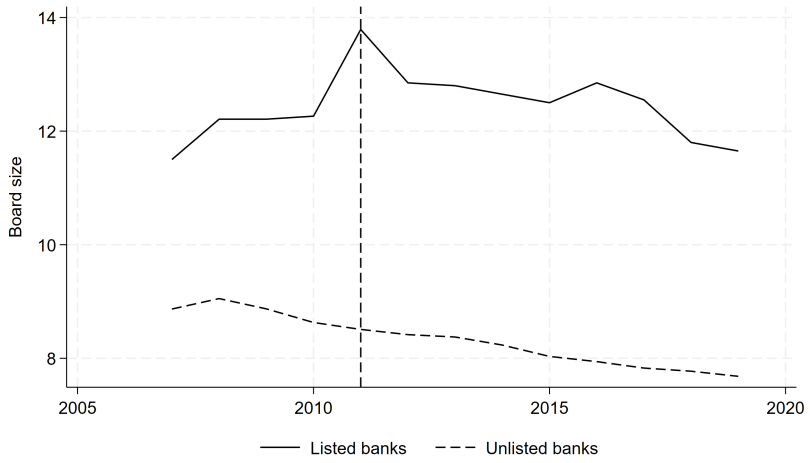
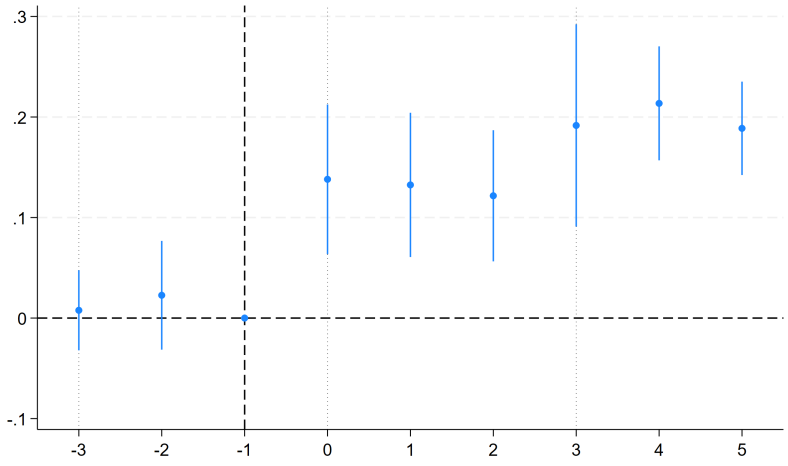


Figure 2: **Share of female directors around the introduction of the gender quota**

Regression estimates of the share of female directors on interactions of the listed dummy and time dummies along with the corresponding 95% confidence intervals. The sample is restricted to the 34 banks with the largest lending portfolio in 2009. The time dummies are defined relative to the first renewal of the board after August 2012 ($t = 0$). The interaction for the last year before the first renewal represents the omitted category. In Panel A, coefficients are estimated using a staggered difference-in-differences model, while in Panel B the estimator from Callaway and Sant'Anna (2021) is used.

Panel A: Staggered difference-in-differences



Panel B: Callaway and Sant'Anna (2021)

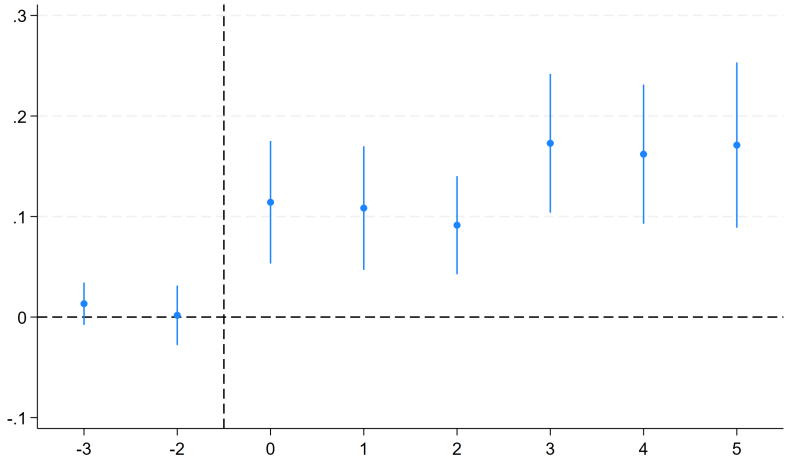


Figure 3: **Lending to female firms: Intensive margin**

This figure plots regression estimates for the dynamic version of Equation (3). The dependent variable is the mid-point credit growth. The indicators Listed and Female majority are interacted with indicators for each board tenure relative to the introduction of the gender quota, i.e., $t = 0$ represents observations in the new board's tenure under the quota. The omitted category is the last board's tenure before treatment.

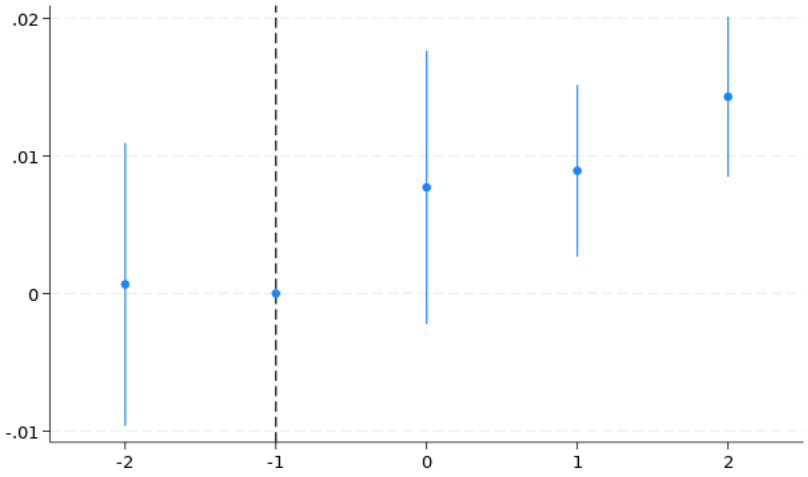


Figure 4: **Lending to female firms: Approval rates**

This figure plots regression estimates for the dynamic version of Equation (3). The dependent variable is a dummy equal to one if the loan application is approved. The indicators Listed and Female majority are interacted with indicators for each board tenure relative to the introduction of the gender quota, i.e., $t = 0$ represents observations in the new board's tenure under the quota. The omitted category is the tenure of the last board before treatment.

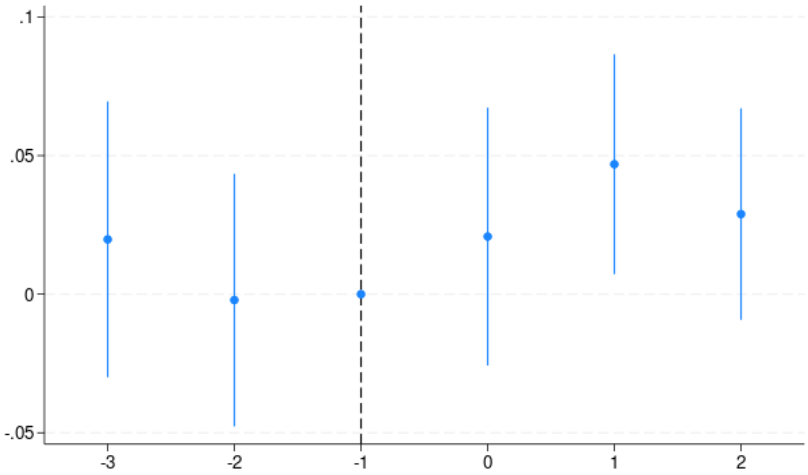
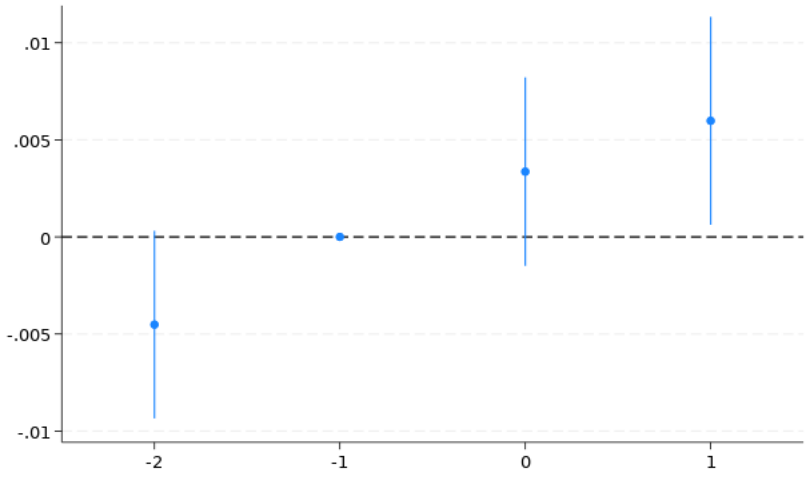


Figure 5: **Promotion rates of female bank employees around the gender quota**

This figure plots the dynamic version of Equation (8). The dependent variable is a dummy variable indicating whether an employee is a middle manager. The indicators Listed and Female majority are interacted with indicators for each board tenure relative to the introduction of the gender quota, i.e., $t = 0$ represents observations in the new board's tenure under the quota. The omitted category is the last board's tenure before treatment.



Tables

Table 1: **Balancing of covariates**

This table reports mean bank characteristics for unlisted (column 1) and listed banks (column 2). All variables are measured in 2010, the year before the quota was enacted. Assets refers to the total assets of the bank. Credit amount is the total amount of credit issued by the bank. RWA are risk weighted assets, scaled by total assets. Bank leverage, CAP ratio, and TIER 1 ratio are different measures for bank capitalization. LIQ ratio indicates the liquidity of the bank. Female share (total credit) refers to the share of credit to female-led firms. Female share (employees) refers to the share of female employees. Column 3 reports the difference between unlisted and listed banks. Standard errors are in parentheses. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1) Unlisted bank	(2) Listed bank	(3) Difference
Ln(Assets)	9.309	11.320	2.012***
	(1.311)	(1.511)	(0.527)
Ln(Credit amount)	21.563	23.706	2.143***
	(1.424)	(1.311)	(0.477)
RWA (%)	69.728	72.546	2.819
	(13.559)	(11.174)	(4.472)
Bank leverage (%)	8.969	8.677	-0.292
	(2.022)	(2.317)	(0.810)
CAP ratio (%)	13.274	12.340	-0.934
	(2.706)	(3.671)	(1.221)
TIER 1 ratio (%)	10.653	9.745	-0.908
	(3.267)	(4.125)	(1.399)
LIQ ratio (%)	7.960	6.910	-1.050
	(6.132)	(3.041)	(1.661)
Female share (total credit)	0.084	0.072	-0.011
	(0.032)	(0.021)	(0.009)
Female share (employees)	0.419	0.386	-0.034
	(0.076)	(0.092)	(0.030)
Observations	21	13	34

Table 2: **Summary statistics**

This table reports summary statistics for the main variables. The first panel reports summary statistics at the bank-year level: the share of listed banks, the share of loans to female-led firms, the total number of loans and the natural logarithm of credit amount. The second panel refers to loan-level variables, where we also add information about the probability that a relationship starts after the quota. The last panel relates to information at the employee-level: share of female employees, share of middle and top managers, share of employees promoted to middle manager, and share of female middle and top managers.

	N	Mean	SD	Median	Min	Max
Banks						
Listed	374	0.38	0.18	0.00	0.00	1.00
Directors	374	11.67	4.30	11.00	1.00	24.00
Female directors	374	0.12	0.13	0.08	0.00	0.54
Credit relationships						
Listed	4.96e+06	0.72	0.45	1.00	0.00	1.00
Female majority firm	4.96e+06	0.16	0.36	0.00	0.00	1.00
Ln(credit)	4.96e+06	12.51	1.33	12.39	10.31	16.24
Credit growth	4.96e+06	-0.03	0.36	0.00	-2.00	2.00
Employees						
Mid-manager	3.15e+06	0.40	0.49	0.00	0.00	1.00
Top-manager	3.15e+06	0.02	0.15	0.00	0.00	1.00
Promotion	3.15e+06	0.05	0.22	0.00	0.00	1.00
Female	3.15e+06	0.43	0.50	0.00	0.00	1.00
Female mid-manager	3.15e+06	0.13	0.33	0.00	0.00	1.00
Female top-manager	3.15e+06	0.00	0.05	0.00	0.00	1.00

Table 3: **The effects of the quota on banks' boards**

Bank-level regressions of the effects of the Italian gender quota on the composition of the board of directors (Equation 2). The outcome variable is the share of female directors. Post is a dummy equal to 1 from the first renewal of the board after 2011, and 0 otherwise. Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. In Models 1, 2, and 4, the sample is restricted to the 34 largest banks by lending in 2009, while Model 3 includes all banks. In Model 4, we re-estimate the effects using the stacked DID approach as in Gormley and Matsa (2011). Driscoll-Kraay standard errors are applied in all models. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
	Share of female directors			
Test	Baseline	Baseline	All banks	Stacked DID
Listed × Post	0.163***	0.177***	0.162***	0.164***
	(0.042)	(0.029)	(0.019)	(0.018)
Post	0.068***	-0.066***	0.006	-0.057***
	(0.017)	(0.019)	(0.014)	(0.012)
Listed	0.060*			
	(0.031)			
Bank FE	No	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes
Bank-Event FE	No	No	No	Yes
Event-Year FE	No	No	No	Yes
N	374	374	1528	983
R^2	0.608	0.793	0.668	0.723
Mean Dep. Var.	0.118	0.118	0.103	0.118
S.D. Dep. Var.	0.134	0.134	0.122	0.134

Table 4: **Lending to female firms: Intensive margin**

Relationship-level regressions of mid-point credit growth at the firm-bank-year level (Equation 3). In Model 4, we re-estimate the effects using the stacked DDD approach as in Gormley and Matsa (2011). Model 5 collapses the data at the firm level and includes firm-year fixed effects, which are estimated based on Model 3 and then included as control variables. SharePostListed denotes the share of a firm's credit obtained from a listed bank in a given year, after the bank has been treated. Post is a dummy equal to 1 from the first renewal of the board after 2011, and 0 otherwise. Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. Female majority is a dummy equal to 1 if the equity owned by women in the borrowing firm is above 50%, and 0 otherwise. Driscoll-Kraay standard errors are applied. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)
	Credit growth				
Test	Baseline	Baseline	Baseline	Stacked DDD	Firm level
Listed × Post × Female majority	0.00242*	0.00338**	0.00808***	0.00735**	
	(0.00118)	(0.00116)	(0.00239)	(0.00311)	
Post × Female majority	-0.00186	-0.00254	-0.00408	-0.00237	
	(0.00183)	(0.00166)	(0.00356)	(0.00291)	
Listed × Post	-0.00352				
	(0.00900)				
Post	-0.00171				
	(0.00764)				
SharePostListed × Female majority					0.00851**
					(0.00291)
SharePostListed					-0.00143
					(0.00963)
Firm-Bank FE	Yes	Yes	Yes	Yes	No
Year FE	Yes	No	No	No	No
Bank-Year FE	No	Yes	Yes	Yes	No
Firm-Year FE	No	No	Yes	Yes	No
Bank-Event FE	No	No	No	Yes	No
Event-Year FE	No	No	No	Yes	No
Firm FE	No	No	No	No	Yes
Female maj.-Year FE	No	No	No	No	Yes
Industry-Year FE	No	No	No	No	Yes
N	4.858e+06	4.858e+06	3.716e+06	1.370e+07	1.188e+06
R^2	0.164	0.168	0.456	0.579	0.642
Mean Dep. Var.	-0.0308	-0.0308	-0.0289	-0.0308	-0.0103
S.D. Dep. Var.	0.362	0.362	0.363	0.362	0.287

Table 5: **Lending to female firms: Extensive margin**

Relationship-level regressions of the probability of a new lending relationship at the firm-bank level being formed after the quota enactment (Equation 7). Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. Female majority is a dummy equal to 1 if the equity owned by women in the borrowing firm is above 50%, and 0 otherwise. Driscoll-Kraay standard errors are applied. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)
	Lending relationship after quota		
Listed × Female majority	0.00705**	0.00861***	0.00870***
	(0.00267)	(0.00233)	(0.00237)
Firm FE	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes
Year Relationship FE	No	Yes	No
Year Relationship-Female maj. FE	No	No	Yes
N	362074	362074	362074
R^2.	0.524	0.879	0.879
Mean Dep. Var.	0.538	0.538	0.538
S.D. Dep. Var.	0.499	0.499	0.499

Table 6: **Lending to female firms: Credit applications**

Relationship-level regressions of the probability of a new credit application at the firm-bank level (Equation 7). Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. Female majority is a dummy equal to 1 if the equity owned by women in the borrowing firm is above 50%, and 0 otherwise. Driscoll-Kraay standard errors are applied. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)
	Credit application		
Listed × Female majority	0.00536**	0.00360*	0.00356*
	(0.00186)	(0.00183)	(0.00181)
Firm FE	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes
Year FE	No	Yes	No
Female maj.-Year FE	No	No	Yes
N	1.593e+06	1.593e+06	1.593e+06
R^2	0.371	0.869	0.869
Mean Dep. Var.	0.478	0.478	0.478
S.D. Dep. Var.	0.500	0.500	0.500

Table 7: **Lending to female firms: Application approval**

Application-level (bank-firm-year) regressions of a dummy which takes value 1 if the application of firm i to bank b is approved, and 0 otherwise (Equation 3). Post is a dummy equal to 1 from the first renewal of the board after 2011, and 0 otherwise. Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. Female majority is a dummy equal to 1 if the equity owned by women in the borrowing firm is above 50%, and 0 otherwise. Driscoll-Kraay standard errors are applied. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
	Approved application			
Listed × Post × Female majority	0.0176	0.0231**	0.0307**	0.0288**
	(0.00989)	(0.00873)	(0.0107)	(0.0113)
Post × Female majority	-0.0109	-0.0201**	-0.0486***	-0.0484***
	(0.00792)	(0.00679)	(0.00601)	(0.00658)
Listed × Female majority	-0.0248**	-0.0219**	-0.0283***	
	(0.00848)	(0.00711)	(0.00884)	
Female majority	0.0345***			
	(0.00472)			
Bank-Year FE	Yes	Yes	Yes	Yes
Firm-Year FE	No	No	Yes	Yes
Firm FE	No	Yes	Yes	Yes
Female-Size-Ind.-Listed FE	No	No	No	Yes
N	1.524e+06	1.451e+06	727264	659402
R^2	0.072	0.318	0.506	0.492
Mean Dep. Var.	0.312	0.294	0.299	0.279
S.D. Dep. Var.	0.463	0.456	0.458	0.448

Table 8: **New director characteristics: Female vs male**

Comparison of characteristics of newly appointed directors at listed Italian banks within a ±6 year window around each bank's quota binding year (staggered design). Male pre and Female pre refer to new appointments before the binding year; Male post and Female post to appointments in or after the binding year. The DID coefficient is the Female × Post interaction from an OLS regression with robust standard errors. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	Pre-quota				Post-quota				
	Male		Female		Male		Female		DID
	Mean	*N*	Mean	*N*	Mean	*N*	Mean	*N*	
Panel A: Demographics									
Age at appointment	60.7	110	52.7	25	59.0	125	54.1	93	3.167
Panel B: Education									
PhD	0.099	91	0.200	25	0.109	119	0.226	93	0.015
MBA	0.044	91	0.080	25	0.101	119	0.086	93	-0.051
Elite school	0.209	91	0.320	25	0.319	119	0.344	93	-0.086
Top Italian university	0.670	91	0.680	25	0.832	119	0.753	93	-0.089
Panel C: Career experience									
Ever CEO	0.381	113	0.040	25	0.437	135	0.245	102	0.149*
Ever executive	0.558	113	0.280	25	0.570	135	0.392	102	0.099
Years in banking	19.7	113	14.2	25	19.6	135	12.7	102	-1.317
Board seats	3.624	101	2.263	19	2.361	119	2.418	91	1.417**
Professor title	0.124	113	0.120	25	0.096	135	0.098	102	0.006
Italian nationality	0.611	113	0.520	25	0.578	135	0.441	102	-0.046
Panel D: Committee assignments									
Lending committee	0.088	113	0.040	25	0.193	135	0.206	102	0.062
HR/Remuneration committee	0.239	113	0.160	25	0.333	135	0.373	102	0.118

Table 9: **The effects of the quota on internal labor markets: Promotions**

Employee-year-level regressions of the probability of being promoted to a middle manager or top manager (Equation 8). Models 1 to 4 analyze promotions of regular employees to middle managers, while Models 5 and 6 consider promotions of middle managers to top managers. In Models 4 and 6 we estimate the effects using the stacked DDD approach as in Gormley and Matsa (2011). Post is a dummy equal to 1 from the first renewal of the board after 2011, and 0 otherwise. Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. Female is a dummy equal to 1 if the worker is a female employee, 0 otherwise. Driscoll-Kraay standard errors are applied. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Middle manager				Top manager	
Test	Baseline	Baseline	Baseline	Stacked DDD	Baseline	Stacked DDD
Female × Listed × Post	0.00504	0.00599*	0.00601*	0.00666***	0.00150*	0.00164**
	(0.00298)	(0.00271)	(0.00274)	(0.000752)	(0.00143)	(0.000656)
Female × Post	-0.00887**	-0.00945**	-0.00370*	-0.00274***	-0.000322	-0.000508*
	(0.00335)	(0.00331)	(0.00187)	(0.000912)	(0.000730)	(0.000268)
Female × Listed	-0.00502	-0.00581	-0.00648	-0.0117***	0.0289***	0.0234***
	(0.00355)	(0.00648)	(0.00638)	(0.00403)	(0.00602)	(0.00179)
Listed × Post	-0.0156***					
	(0.00403)					
Listed	-0.0704***					
	(0.0102)					
Post	0.0649***					
	(0.0169)					
Worker FE	Yes	Yes	Yes	Yes	Yes	Yes
Bank-Year FE	No	Yes	Yes	Yes	Yes	Yes
Female-Year FE	No	No	Yes	Yes	Yes	Yes
Bank-Event FE	No	No	No	Yes	No	Yes
Event-Year FE	No	No	No	Yes	No	Yes
N	3.058e+06	3.058e+06	3.058e+06	1.570e+07	1.301e+06	6.962e+06
R^2	0.924	0.926	0.926	0.938	0.928	

Table 10: **Predicted PD and non-performing loans**

Relationship-level regressions (Equation 3) of predicted probability of default (PPD), capital cost of loans, measured by the natural logarithm of the amount of the exposure times its PPD, and non-performing loans (NPLs), measured by a dummy for the existence of an NPL in the relationship between the firm and the bank in year t. In Model 4, we focus on the cumulative probability of an NPL within 2 years after a lending relationship is established. In Panel B we re-estimate the effects using the stacked DDD approach as in Gormley and Matsa (2011). Post is a dummy equal to 1 from the first renewal of the board after 2011, and 0 otherwise. Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. Female majority is a dummy equal to 1 if the equity owned by women in the borrowing firm is above 50%, and 0 otherwise. Driscoll-Kraay standard errors are applied. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
	PPD	Log(Cost)	NPL	NPL (f.2)
	Panel A: Baseline			
Listed × Post × Female majority	-0.000128	-0.0125	0.000262	0.000209
	(8.16e-05)	(0.0144)	(0.00108)	(0.00129)
Post × Female majority	0.000104**	0.0103	-0.000178	-0.00143
	(4.28e-05)	(0.0112)	(0.00109)	(0.00147)
Firm-Bank FE	Yes	Yes	Yes	Yes
Year FE	No	No	No	No
Bank-Year FE	Yes	Yes	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes
N	4.014e+06	4.014e+06	3.951e+06	3.966e+06
R^2	0.939	0.927	0.765	0.839
Mean Dep. Var.	0.0154	8.050	0.0238	0.0450
S.D. Dep. Var.	0.0175	1.763	0.152	0.207
	Panel B: Stacked DDD			
Listed × Post × Female majority	-0.000178***	-0.0194**	9.99e-05	-0.000523
	(4.90e-05)	(0.00833)	(0.000950)	(0.00105)
Post × Female majority	0.000108***	0.0116**	-0.000105	-0.000332
	(2.81e-05)	(0.00517)	(0.000619)	(0.000898)
Firm-Bank FE	Yes	Yes	Yes	Yes
Bank-Year FE	Yes	Yes	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes
Bank-Event FE	Yes	Yes	Yes	Yes
Event-Year FE	Yes	Yes	Yes	Yes
N	1.440e+07	1.440e+07	1.420e+07	1.420e+07
R^2	0.958	0.945	0.829	0.878
Mean Dep. Var.	0.016	7.942	0.026	0.047
S.D. Dep. Var.	0.019	1.796	0.159	0.212

Table 11: **Firms size and lending to female firms**

Relationship-level regressions of mid-point credit growth (Models 1 to 3, Equation 3) and the probability of a new lending relationship (Models 4 to 6, Equation 7). The sample is split based on firm size following Eurostat criteria. Micro-sized enterprises have up to 10 employees, SMEs have between 10 and 250 employees, whereas large enterprises have at least 250 employees. Post is a dummy equal to 1 from the first renewal of the board after 2011, and 0 otherwise. Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. Female majority is a dummy equal to 1 if the equity owned by women in the borrowing firm is above 50%, and 0 otherwise. Driscoll-Kraay standard errors are applied. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Credit growth			Lending relationship		
Borrower size	Micro	SME	Large	Micro	SME	Large
Listed × Post × Female majority	-0.00185	0.0133***	-0.0116			
	(0.00370)	(0.00373)	(0.0281)			
Post × Female majority	-0.00352	-0.00386	0.0364			
	(0.00559)	(0.00309)	(0.0291)			
Listed × Female majority				0.0125*	0.00293	-0.0936
				(0.00565)	(0.00351)	(0.0567)
Firm-Bank FE	Yes	Yes	Yes	No	No	No
Bank-Year FE	Yes	Yes	Yes	No	No	No
Firm-Year FE	Yes	Yes	Yes	No	No	No
Firm FE	No	No	No	Yes	Yes	Yes
Bank FE	No	No	No	Yes	Yes	Yes
Year rel.-Female maj. FE	-	-	-	Yes	Yes	Yes
N	1.185e+06	1.982e+06	132414	126597	141054	9201
R^2	0.525	0.425	0.364	0.890	0.878	0.871
Mean Dep. Var.	-0.0276	-0.0329	-0.0325	0.541	0.551	0.562
S.D. Dep. Var.	0.334	0.373	0.433	0.498	0.497	0.496

Table 12: **Real effects**

Firm-level regressions of mid-point growth in total assets (Model 1), tangible and intangible assets (Models 2 and 3), liquidity (Model 4), revenues (Model 5), and employment (Model 6), following Equation (9). The sample is restricted to firms that borrow. SharePostListed is the share of the firm's credit obtained from a listed bank in a given year, after the bank has been treated. Female majority is a dummy equal to 1 if the equity owned by women in the borrowing firm is above 50%, and 0 otherwise. Standard errors are clustered at the firm and year level. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth rate					
	Assets	Tangibles	Intangibles	Liquidity	Revenues	Employment
SharePostListed × Female majority	0.00428**	0.00806**	-0.00768	0.0144**	0.00797**	0.000566
	(0.00145)	(0.00314)	(0.00787)	(0.00627)	(0.00269)	(0.00236)
SharePostListed	-0.000376	0.000154	0.00603	-0.00448	-0.00311*	0.000230
	(0.00128)	(0.00258)	(0.00447)	(0.00719)	(0.00139)	(0.00174)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Female-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	2.279e+06	2.207e+06	1.719e+06	2.216e+06	2.270e+06	1.937e+06
R^2	0.239	0.185	0.165	0.0706	0.167	0.200
Mean Dep. Var.	0.0395	0.00553	-0.0936	0.0437	0.0188	0.0233
S.D. Dep. Var.	0.245	0.507	0.855	1.006	0.410	0.276

Internet Appendix

Board Gender Quotas and Female Borrowing: Evidence from Loan-Level Data

— not for publication —

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Figure A1: Number of directors around the introduction of the gender quota: Hiring

Table A1: Timeline of the Golfo-Mosca Law (Law 120/2011)

Table A2: The effects of the quota on banks' board size

Table A3: Intensive margin results (alternative definitions of female ownership)

Table A4: Extensive margin results (alternative definitions of female ownership)

Table A5: Distance to quota (alternative definition of treatment)

Table A6: Lending to female firms: Intensive margin and bank specialization

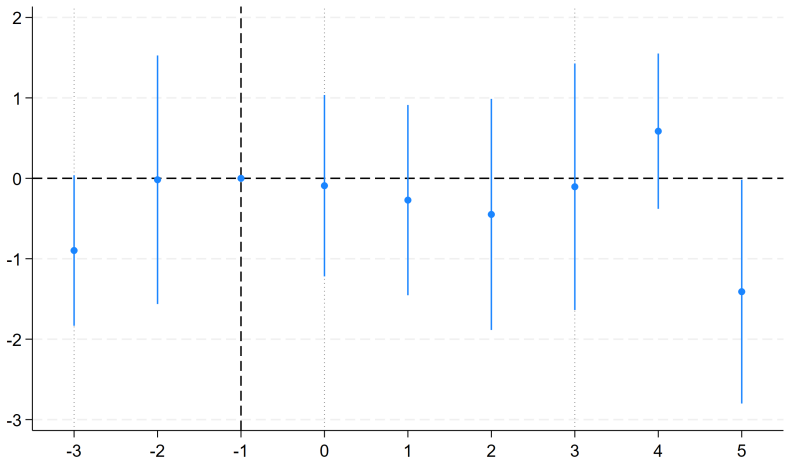
Table A7: The effects of the quota on internal labor markets: Wages

Table A8: The effects of the quota on internal labor markets: Hiring

Figure A1: **Number of directors around the introduction of the gender quota**

Regression estimates of the number of directors on interactions of the listed dummy and time dummies along with the corresponding 95% confidence intervals. The sample is restricted to the 34 banks with the largest lending portfolio in 2009. The time dummies are defined relative to the first renewal of the board after August 2012 ($t = 0$). The interaction for the last year before the first renewal represents the omitted category. In Panel A, coefficients are estimated using a staggered difference-in-differences model, while in Panel B the estimator from Callaway and Sant'Anna (2021) is used.

Panel A: Staggered difference-in-differences



Panel B: Callaway and Sant'Anna (2021)

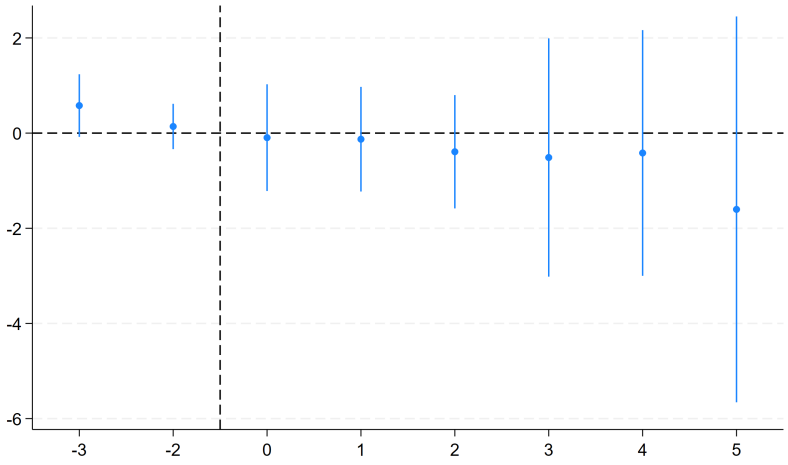


Table A1: **Timeline of the Golfo-Mosca Law (Law 120/2011)**

10/11/2009	First proposal in parliamentary commission. One-third of least represented gender, starting from first renewal after the law comes into effect.
30/06/2010	Proposal is sent to lower chamber. One-third of least represented gender, starting from first renewal after the approval of the law, but not before six months since inception, for three consecutive renewals.
02/12/2010	The lower chamber approves the proposal.
15/03/2011	The upper chamber approves a modified proposal. One-third of least represented gender, for three consecutive renewals. For the first renewal starting after one year since the inception of the law, the quota is one-fifth.
27/06/2011	The lower chamber re-approves the modified proposal by the upper chamber.
12/07/2011	The law is published in its final form. One-third of least represented gender, for three consecutive renewals. For the first renewal starting after one year since the inception of the law, the quota is one-fifth.
12/08/2012	The law is binding. Every renewal of the board from this time on must comply with one-fifth quota (and then one-third for two consecutive renewals)

Table A2: **The effects of the quota on banks' board size**

Bank-level regressions of the effects of the Italian gender quota on the size of the board of directors (Equation 2). The outcome variable is the number of directors. Post is a dummy equal to 1 from the first renewal of the board after 2011, and 0 otherwise. Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. In Models 1, 2, and 4, the sample is restricted to the 35 largest banks by lending in 2009, while Model 3 includes all banks. In Model 4 we re-estimate the effects using the stacked DID approach as in Gormley and Matsa (2011). Driscoll-Kraay standard errors are applied in all models. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
	Number of directors			
Test	Baseline	Baseline	All banks	Stacked DID
Listed × Post	0.234	0.868	0.214	0.926
	(1.014)	(0.741)	(0.586)	(0.586)
Post	-1.158***	-1.166**	0.274	-1.170***
	(0.318)	(0.454)	(0.407)	(0.308)
Listed	3.618***			
	(0.866)			
Bank FE	No	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes
Bank-Event FE	No	No	No	Yes
Event-Year FE	No	No	No	Yes
N	374	374	1528	983
R^2	0.191	0.658	0.735	0.632
Mean Dep. Var.	11.673	11.673	8.819	11.673
S.D. Dep. Var.	4.301	4.301	3.521	4.301

Table A3: **Intensive margin results (alternative definitions of female ownership)**

Relationship-level regressions of mid-point credit growth at the firm-bank-year level (Equation 3). Post is a dummy equal to 1 from the first renewal of the board after 2011, and 0 otherwise. Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. Female majority (switchers) is a time-variant dummy equal to 1 if women own more than 50% of the firm's equity and 0 otherwise. Mean equity is the average share of the firm's equity held by women throughout the entire sample period. Equity is the time-variant share of the firm's equity held by women. Full owner is a time-variant dummy equal to 1 if women own 100% of the firm's equity and 0 otherwise. Driscoll-Kraay standard errors are applied. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
	Credit growth			
Listed × Post × Female majority (switchers)	0.00643***			
	(0.00169)			
Listed × Female majority (switchers)	-0.00161			
	(0.00287)			
Post × Female majority (switchers)	-0.00383			
	(0.00247)			
Listed × Post × Mean equity		8.35e-05**		
		(2.81e-05)		
Post × Mean equity		-3.16e-05		
		(3.58e-05)		
Listed × Post × Equity			7.82e-05**	
			(2.76e-05)	
Listed × Equity			-6.07e-05	
			(6.12e-05)	
Post × Equity			-2.68e-05	
			(3.67e-05)	
Listed × Post × Full owner				0.00616
				(0.00418)
Post × Full owner				0.00203
				(0.00611)
Firm-Bank FE	Yes	Yes	Yes	Yes
Year FE	No	No	No	No
Bank-Year FE	Yes	Yes	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes
N	4.024e+06	4.036e+06	4.036e+06	3.945e+06
R^2	0.457	0.457	0.457	0.456
Mean Dep. Var.	-0.0289	-0.0289	-0.0289	-0.0290
S.D. Dep. Var.	0.364	0.364	0.364	0.364

Table A4: **Extensive margin results (alternative definitions of female ownership)**

Relationship-level regressions of the probability of a new lending relationship at the firm-bank level being formed after the quota enactment (Equation 7). Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. Female majority (switchers) is a time-variant dummy equal to 1 if women own more than 50% of the firm's equity and 0 otherwise. Mean equity is the average share of the firm's equity held by women throughout the entire sample period. Equity is the time-variant share of the firm's equity held by women. Full owner is a time-variant dummy equal to 1 if women own 100% of the firm's equity and 0 otherwise. Driscoll-Kraay standard errors are applied. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
	Lending relationship after quota			
Listed × Female majority (switchers)	0.00690***			
	(0.00183)			
Listed × Mean equity		8.54e-05**		
		(3.77e-05)		
Listed × Equity			8.34e-05**	
			(3.72e-05)	
Listed × Full owner				0.0143
				(0.0103)
Firm FE	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes
Year Relationship-Female maj. FE	Yes	Yes	Yes	Yes
N	392942	347088	378616	389173
R^2	0.879	0.884	0.881	0.879
Mean Dep. Var.	0.541	0.544	0.542	0.537
S.D. Dep. Var.	0.498	0.498	0.498	0.499

Table A5: **Distance to quota (alternative definition of treatment)**

Estimation of the main analyses using the distance from the quota, as of 2010, i.e., the year before the quota was enacted, as treatment. Distance is defined as the difference between the share of women on the board in 2010 and the minimum share mandated by the law (20%). Distance is set to zero for unlisted banks and for listed banks whose share of women on the board in 2010 exceeds 20%. The dependent variables are: the share of women on the board at the bank-year level (Model 1); mid-point credit growth at the firm-bank-year level (Model 2); the probability of a new lending relationship at the firm-bank-year level (Model 3); and a dummy indicating whether an employee is a middle manager at the employee-year level (Model 4). The respective regression equations follow the corresponding tables (Tables 3, 4, 5, and 9). Driscoll-Kraay standard errors are applied. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
	Share female directors	Lending relationship	Credit growth	Middle manager
Distance × Post	1.0203***			
	(0.1549)			
Distance × Female majority		0.0502***		
		(0.0156)		
Distance × Post × Female majority			0.0354**	
			(0.0145)	
Distance × Post × Female				0.0487**
				(0.0205)
Year FE	Yes	No	No	No
Bank FE	Yes	Yes	No	No
Firm FE	No	Yes	No	No
Year Relationship-Female maj. FE	No	Yes	No	No
Firm-Bank FE	No	No	Yes	No
Firm-Year FE	No	No	Yes	No
Bank-Year FE	No	No	Yes	Yes
Worker FE	No	No	No	Yes
Female-Year FE	No	No	No	Yes
N	374	362074	3.716e+06	3.058e+06
R^2	0.824	0.879	0.456	0.935

Table A6: **Lending to female firms: Intensive margin and bank specialization**

Relationship-level regressions of mid-point credit growth (Equation 3) with additional controls for bank specialization as in Benetton and Fantino (2021). We define a dummy, Specialized, that equals one if the share of bank b's number of loans (credit amount) in the industry of firm f exceeds the bank's overall loan share (credit amount) at the national level, and we then include interactions of this dummy with the dummies Listed, Post, and Female majority in Models 1 to 3 (4 to 6). Post is a dummy equal to 1 from the first renewal of the board after 2011, and 0 otherwise. Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. Female majority is a dummy equal to 1 if the equity owned by women in the borrowing firm is above 50%, and 0 otherwise. Driscoll-Kraay standard errors are applied. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Credit growth					
Bank specialization measure	Number of loans			Credit amount		
Listed × Post × Female majority	0.00237*	0.00329**	0.00805***	0.00221	0.00306*	0.00851**
	(0.00111)	(0.00110)	(0.00232)	(0.00162)	(0.00141)	(0.00267)
Post × Female majority	-0.00002	-0.00102	-0.00307	-0.000729	-0.00163	-0.00576
	(0.00279)	(0.00221)	(0.00494)	(0.00305)	(0.00283)	(0.00471)
Listed × Post	-0.00340			-0.00199		
	(0.00895)			(0.00935)		
Post	-0.00373			-0.00733		
	(0.00757)			(0.00909)		
Interactions for specialization	Yes	Yes	Yes	Yes	Yes	Yes
Firm-Bank FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	Yes	No	No
Bank-Year FE	No	Yes	Yes	No	Yes	Yes
Firm-Year FE	No	No	Yes	No	No	Yes
N	4.848e+06	4.848e+06	3.713e+06	4.848e+06	4.848e+06	3.713e+06
R^2	0.164	0.168	0.456	0.164	0.168	0.456
Mean Dep. Var.	-0.0306	-0.0306	-0.0289	-0.0306	-0.0306	-0.0289
S.D. Dep. Var.	0.362	0.362	0.363	0.362	0.362	0.363

Table A7: **The effects of the quota on internal labor markets: Wages**

Employee-year-level regressions of the natural logarithm of annual employee wages (Equation 8). Model 2 excludes all managers, while Models 3 and 4 analyze middle and top managers, respectively. Post is a dummy equal to 1 from the first renewal of the board after 2011, and 0 otherwise. Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. Female is a dummy equal to 1 if the worker is female, 0 otherwise. Driscoll-Kraay standard errors are applied. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
	Ln(Wage)			
	All	No Manager	Mid. manager	Top manager
Female × Listed × Post	0.00908*	0.00816	0.00243	0.0305**
	(0.00479)	(0.00516)	(0.00226)	(0.0103)
Female × Listed	0.0146***	0.0273	-0.000917	-0.00227
	(0.00369)	(0.0170)	(0.00529)	(0.0633)
Female × Post	-0.0100*	-0.00956*	-0.00573	-0.0160
	(0.00450)	(0.00445)	(0.00442)	(0.00986)
Worker FE	Yes	Yes	Yes	Yes
Bank-Year FE	Yes	Yes	Yes	Yes
Female-Year FE	Yes	Yes	Yes	Yes
N	3.080e+06	1.790e+06	1.216e+06	64343
R^2	0.862	0.736	0.765	0.435
Mean Dep. Var.	8.113	7.915	8.354	9.075
S.D. Dep. Var.	0.365	0.244	0.280	0.305

Table A8: **The effects of the quota on internal labor markets: Hiring**

Employee-level regressions of the probability of a hire occurring after the board's renewal (following Equation 7). Model 1 includes all bank employees, Model 2 excludes all managers, while Models 3 and 4 analyze hirings of managers and top managers, respectively. Listed is a dummy equal to 1 if the bank is listed, and 0 otherwise. Female is a dummy equal to 1 if the worker is female, 0 otherwise. Driscoll-Kraay standard errors are applied. *, ** and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
	Hiring			
	All	No Manager	Mid. Manager	Top Manager
Listed × Female	0.00832**	0.00556*	0.00847	0.00534
	(0.00327)	(0.00245)	(0.0138)	(0.0187)
Bank FE	Yes	Yes	Yes	Yes
Female-RelYear FE	Yes	Yes	Yes	Yes
N	67373	51670	13807	1895
R^2	0.821	0.817	0.843	0.828
Mean Dep. Var.	0.485	0.473	0.523	0.528
S.D. Dep. Var.	0.500	0.499	0.500	0.499