

Female Quotas, Interlocking and Spill-Over Effects

Abstract

Using a longitudinal dataset of private Italian banks over the period 2006-2016, we examine the extent to which a law introduced in 2012 establishing a minimum quota of women in the boards of listed banks also produced an increase in the female ratio in the boards of unlisted banks. Our results show that both the proportion of women in the boards of unlisted banks, and the probability of having at least one woman in the board indeed rose in 2012, and remained higher in subsequent years as well. This effect was corroborated by the so called interlocking rule, according to which after 2012, the same individual could no longer sit into boards of competing banks. Our findings highlight an emulation effect in adopting the listed companies' governance best practices, and show that the law contributed to generating a fairer attitude towards women.

1. Introduction

Women are under-represented in several domains. According to the World Economic Forum (WEF), the 2018 Global Gender Gap score stands at 68%: economic participation and opportunities is one of the areas - second after political empowerment - where the gender gap remains the widest. In the workplace in fact, women have to overcome significant obstacles in reaching managerial or top positions, as well as in sitting on boards of Directors.

Considering that the under representation cannot be attributed to lack of competence (see Bertrand et al., 2019), several legal actions have been put into place to overcome this market failure. Focusing on regulations that aim to improve gender balance in corporate boards, Norway was the first mover that introduced gender quotas on the boards of listed firms in 2005. Then, other countries, such as Italy, France, Belgium and Germany followed this path and implemented similar rules to improve board diversity and, more in general, a more inclusive corporate governance.

Several studies have empirically investigated the effectiveness of gender quotas under different angles. Some analyze the relationship between board diversity and firm risk and performance, without reaching clear-cut results. For example, Garcia Meca et al. (2015) show that gender diversity increases bank performance, while Adams and Ferreira (2009) suggest that mandating gender quotas for directors in US firms can reduce their firm value.

Other studies look at spillover effects in and out corporate boards: Gonzales et al. (2018) find that female directors exert an influence on their fellow male directors, improving their personal responsibility and lowering their risk taking. Matsa and Miller (2011) show that US companies with higher shares of female board members are more likely to hire female top executives, while Maida and Weber (2018) do not find the same evidence in the Italian listed companies.

Italy represents, in our opinion, an interesting case study to analyse the effects of such gender equality policies. Reasons are manifold. First, as reported in table 1, the local labor market is characterized by a strong gender bias. The economic participation and opportunity score captures the difference between women and men in terms of participation, remuneration and carrier advancement and shows that women have about half of opportunities compared to their male peers. In contrast, men and women have essentially the same educational attainment and therefore potentially the same knowledge and skills.

Table 1: WEF_Italy Global Gender Gap score (1=parity and 0=impairity)

| | Rank | Score 2006 | Rank | Score 2018 |
|--|-------------|-------------------|-------------|-------------------|
| Global Gender Gap score | 77 | 0.646 | 70 | 0.706 |
| Economic participation and opportunity | 87 | 0.527 | 118 | 0.592 |
| Educational attainment | 27 | 0.997 | 61 | 0.995 |
| Political empowerment | 72 | 0.087 | 38 | 0.267 |
| Health and survival | 77 | 0.972 | 116 | 0.969 |
| <i>Rank out of</i> | 115 | | 149 | |

Source: World Economic Forum, The Global Gender Gap Report 2018, p. 135

Then, in Italy, in 2012, the Law 120/2011 (known as Golfo-Mosca law) mandatorily introduced sex quota in listed firm boards, for members of the under-represented gender, i.e. women. It requires gender quotas for the three board appointments subsequent August 2012, set at 20% at the first board election, raised up to 30% in the following two elections. It has to be considered that the Golfo-Mosca law refers only to listed companies - excluding unlisted firms from the quota rule -, and it is temporary, lasting only for the three board appointments after August 2012. Since directors mandates are generally for a three-year period, the quota rule enforcement is going to expire in 2021.

As a consequence of the regulatory requirement, the percentage of women in the boardrooms of Italian listed companies has increased over the last years from 7,4% in 2011 to 33,5% in 2017 (Cerved data). Prior studies investigated the relationship between gender diverse boards and their effect on risk and economic performances of Italian companies. Banca d'Italia (2015) finds a positive impact on the quality of credit and, to a lesser extent, on profitability, given a higher women's risk aversion. Consob (2018) reports a significant U-shaped impact of gender-diversity on corporate profitability, when the woman share in the boardroom goes beyond 17%-20%. On the contrary, Ferrari et al. (2018) find no significant impact on firms' performance, but a lower variability of stock market prices associated with the share of female directors.

A different investigation is conducted by Maida and Weber (2018), who shift the focus to the effectiveness of the Golfo-Mosca law on the development of gender equality culture at work. They analyze the spillover effect of the female presence in corporate boards on the gender of employees in the top management positions and provide no evidence of an increase of women at the top executive level or among top earners. Their results suggest that simply enforcing female participation to corporate boards is not a sufficient tool to educate the market and change the male-dominated workplace culture.

Our paper contributes to the body of knowledge on this topic addressing a new research question that, as far as we know, no previous studies have investigated. We concentrate on the Italian financial industry, more precisely on banks, that in 2012 have been affected not only by the gender quota on corporate boards of listed companies, but also by the so-called interlocking rule. Interlocking directorates are a business practice in which directors sit on more than one corporate board. The prohibition of interlocking set by the "Save Italy" Decree came into force in April 2012 for firms operating in the financial industry, imposing no more than one board per person. This rule applied, and still applies, to all financial institutions, both listed and unlisted,

thus making the financial sector more exposed to a board renovation than the non-financial sector.

In our paper we want to investigate how the financial sector was impacted by these two laws in terms of gender imbalance in the boards. Particularly we answer to the question: was there a spill over effect of women in the boards also in unlisted banks not obliged to follow the quota? Our question is similar in spirit to that of Maida and Weber (2018) while looking at horizontal spill over, rather than vertical ones. Maida and Weber study the effect of quota on the top management of the quota affected firms, while we look at the effect of quota on firms that are not forced to follow that norm. If quotas help generating a fairer attitude towards women's promotion, we would expect that the effect of quotas expand over the territory imposed by the law, by generating a positive spill-over effect. This externality was not found by Maida and Weber who conclude that no significant effect of quota spread outside the board of listed firms, at management level, where the presence of women was not impacted by the Golfo Mosca law.

Our analysis looks at whether the number of women in the boards increased in unlisted banks due to two intertwined laws: the interlocking imposed many men to exit several boards, this left new places that had to be replaced (not necessarily by women). At the same time, the quota law has increased more sensitivity to having a board balance as a sign of goodness of the financial firm. Did this additional attention to female competence also turn to affect unlisted firm choices in deciding the board composition? The answer is positive. Overall, we find a significant horizontal spillover in unlisted banks, highlighting an emulation effect in adopting the listed companies' governance best practices.

The remainder of the paper is organized as follows. Section 2 describes our dataset. Section 3 discusses our methodology and results. Section 4 concludes.

2. Dataset

Our dataset consists in a panel of 120 Italian non-cooperative commercial banks over the period 2006-2015. We decided to build a fixed panel because, for our research goal, it is important to observe the behavior of each bank over an extensive period, in order to gauge the effect of the changing regulatory environment. For each year, we collected data concerning the dimension of the bank (total asset), the economic and financial equilibria, the composition of the management board, with particular reference to gender and date of birth of each director. We gathered information through two main sources:

- the Historical Information Sheet (*Fascicolo Storico*), available for each company at the Chamber of Commerce (*Infocamere*), which is a Pdf document containing, among other information, a track-record of all changes in the Board of Directors and basic anagraphic information on each member;
- the dataset ABI Banking Data provided by the Italian Banking Association (ABI) which mainly collects financial and economic data on all banks operating in Italy.

We decided to exclude from our research perimeter the cooperative banks because these institutions are characterized by a mission deeply rooted in the development of local territories

and by peculiar governance mechanisms that could affect the dynamics of directors' selection, introducing a spurious element in our analysis. We excluded from the sample the subsidiaries of foreign banks as well for two main reasons. First, our research focus is on Italy, as explained above, due to the peculiar intensity of the gender gap characterizing the country. International subsidiaries could be influenced by a different cultural background more sensitive to equality issues. Second, local boards of minor legal entities in large groups are often quite restricted and tend to partially replicate the board composition of the mother entity with the addition of a local country manager. Once again, the dynamics of directors' selection could be quite peculiar in such a context.

Table 2 analyses the representativeness of our sample compared to the entire Italian banking system. The 120 banks we consider are equal to 60.91 per cent of the total number of non-cooperative banks operating at 31 December 2015. The group includes 16 listed banks, representing the full universe of credit institutions negotiated at the Borsa Italiana stock exchange. In terms of market share, our sample covers 64.81 percent of total assets and 55.71 percent of total loans, thus representing a significant portion of the Italian banking system.

Table 3 analyses the dimension of boards and the presence of female directors. The average number of board's members have been increasing steadily up to 2011 and decreasing afterwards. Although the reasons underlying this phenomenon are not completely clear and unexplored in literature, a potential explanation could be related to the interlocking rule. Especially in cases where the board members were particularly numerous, the directors forced to leave because of concurrent changes in different banks were, most probably, not replaced. At the same time, the percentage of banks having at least one woman among the directors doubled from 2005 (30.83%) to 2016 (61.67%). The largest increase – almost 10 percentage points – took place in 2012. Part of the increase is a direct effect of the entry into force of Golfo-Mosca Law that is however applying just to the listed banks (13.33 percent in our sample). Over and beyond the legal constraint, it is quite evident a spillover effect among the unlisted banks to whom the compulsory female quota is not directly applicable.

The phenomenon is analyzed in more details in Table 4. In 2012, the percentage of banks with at least one woman among the Directors increased respectively 18.75 and 7.61 percentage points in listed and unlisted banks. In the same year, the share of female presence in the boards raised 5.04 percentage points in listed banks and 1.39 in the unlisted ones. In particular, for the unlisted credit institutions this is the year-on-year major increase in the decade under analysis. Thus, alongside the regulatory constraint, there was a positive contagion in the entire banking community produce by Golfo-Mosca Law.

Table 5 analyses more in depth the female presence among directors by looking at the quota of women over the total dimension of the board. The percentage of women increased from 2.5% to 10.75% over the sample period. This improvement in gender equality came both from an increase in the number of banks having at least one woman in the Board (as shown in Table 3) and from a rise in the number of female directors in banks already having a diversified Board. The percentage of women in those banks rose in fact from 10.57% in 2006 to 17.72% in 2015. We can also notice that, for the sub-sample of banks having a female presence among the

directors, the percentage remains stable up to 2011 and afterwards it increases steadily. This phenomenon is visually evident in Figure 1. This suggests that – even once the glass ceiling is broken and the Board already includes one or more women – further policy interventions, increasing the cultural awareness about gender equality, may help to foster women participation to boards of directors and increase their presence.

The last column of Table 5 focuses on local banks, which typically operate in more narrow-minded environments, which may not favor the presence of female directors. Yet, the data does not support the idea of a stronger barrier to the appointment of women directors in smaller local banks: the percentage of women on the boards rose in fact from 3.46% in 2005 to 10.10% in 2015.

4. Empirical strategy and results

To test the horizontal spillover hypothesis on women representation in unlisted banks' boards we use two main dependent variables: the proportion of women in the board of director (de Cabo et al., 2012); and a dummy variable equal to 1 when at least one woman has been appointed as director, and 0 otherwise (Adams and Ferreira 2009).

Our baseline approach can be summarized as follows:

$$Y_{i,t} = \alpha + \beta_1 Years_t + \beta_2 Size_{i,t} + \beta_3 Capitalization_{i,t} + \beta_4 Business\ model_{i,t} + \beta_5 ROA_{i,t} + \beta_6 Std.\ ROA_{i,t} + \beta_7 Efficiency_{i,t} + \beta_9 Board\ size_{i,t} + \beta_{10} Board\ size_{i,t}^2 + \beta_{11} Growth\ total\ assets_{i,t} + \varepsilon_{i,t} \quad [1]$$

Where i denotes the bank and t the time. Y is one of our gender diversity measures described above. $Year$ is a vector of year dummies for the years 2007 to 2016, assuming 2006 as the reference year. We follow de Cabo et al. (2012) in considering the potential bank-specific determinants of board gender diversity. Our first covariate is size, expressed as the natural logarithm of total assets. As argued by Adams and Ferreria (2009), the higher public pressure for enhancing gender diversity faced by larger firms may encourage them to reach an adequate female representation in their boards, leading to a positive relation between banks' size and proportion of women in the boards.

In order to control for bank's stability, we employ the logarithm transformation of the ratio between equity and total assets (capitalisation). According to the higher risk-aversion of women and the propensity to prefer homogeneity in the governance of riskier institutions (Adams and Ferreira, 2004), we expect a positive relation between capitalisation and board gender diversity. As further control, we follow Chen et al. (2017) measuring the asset portfolio risk and the riskiness of bank strategies by using the standard deviation of the return on assets (Std. ROA) computed on a three-year rolling window (Schaek et al. 2014). In the same vein of capitalisation, banks with a lower asset risk may have a higher proportion of women in their boards.

Unlike de Cabo et al. (2012) who use a dummy variable equal to 1 whether the bank is non-commercial and 0 for commercial banks, we control for bank's type activity employing the ratio between loans to customers and total assets (loan ratio), with a higher figure that reflects a stronger involvement in retail banking activity. Although this variable is crucial since banks with specific business models can have more incentives to achieve a higher women representation in their boards, its expected sign is ambiguous. The higher riskiness of banks more involved in trading and fee-generating activities (Lepetit et al., 2008) seems to suggest a higher female representation in commercial banks' boards rather in other types of banks. However, more aggressive business strategies can be achieved also by increasing lending, especially towards riskier borrowers, restricting the incentives related to a higher proportion of women in the board, as proved by Muller-Kahle and Lewellen (2011) who highlight a higher probability of being involved in sub-prime mortgage origination for financial firms with less gender diversity in their boards.

Following by Martín-Ugedo and Minguez-Vera (2014), we furtherly control for bank performance including in the model the return on assets (ROA). As argued by the authors, the imbalance between demand and supply of women candidates related to occupational segregation, family responsibilities and differences in time use over the life cycle might play a crucial role in making skilled women more selective in picking job opportunities, preferring more profitable banks. We thus expect a positive relation between profitability and board gender diversity.

We also include an efficiency variable (cost to income), computed as the ratio between operating costs and intermediation margin. For this variable, the predicted sign is ambiguous. On the one hand, the expected positive relation between gender diversity and profitability could suggest that efficient banks are more attractive for female directors, given the positive impact of cost efficiency on bank profitability (Valverde and Fernandez, 2007). On the other hand, the higher women's risk aversion and the growth of problem loans associated with a decline in cost efficiency (Berger and De Young; 1997; Williams; 2004), the more accurate underwriting and monitoring practices and the corresponding higher expenses may suggest that women director candidates can give priority to less risky institutions even though characterised by a lower efficiency.

We proxy the aggressiveness of the banks' growth strategies using the yearly growth rate of total assets (gr total assets). According to what described before, the lower women's risk tolerance in corporate investment and financial policies (Faccio et al., 2016) and the more conservative valuation of risks (Palvia et al. 2015) seem to suggest a negative relation between bank growth and female representation. However, although Huang and Kisgen (2013) show slower growth rates for firms with female executives, it must be noticed that firms with excessive past growth can be forced to increase diversity in their boards in order to limit unsustainable development strategies which, in turn, may jeopardize the survival of the bank in the long run. Moreover, as argued by de Cabo et al. (2012), the improvement in the decision making process in critical circumstances, like fast growth phases, can encourage banks to increase female representation.

Finally, we include the number of board members and its quadratic term as a measure of board size. According to several empirical evidence that point out a positive relation between board size and gender diversity (Saeed et al., 2016; Nekhili and Gatfaoui, 2013; Brammer et al. 2007; Hyland and Marcellino, 2002), we expect this variable enters in the regressions with a positive sign. As argued by Gaiger and Marlin (2012), larger boards tend to face higher pressure to enhance gender diversity, making the appointment of women more likely. Moreover, the lower heterogeneity that usually characterises smaller boards can act as a barrier in order to keep a homogenous decision-making process and avoid conflicts and misalignments related to different views associated to a wider diversity in the board (van Knippenberg et al. 2004

Our main interest lies in the sign and magnitude of the 2012 and onward dummies. 2012 is in fact the year in which both the Golfo and Mosca law and the prohibition of interlocking became mandatory. We expect the 2012 dummy to show a positive sign, and if the effect of the law persists, then the dummies for the years 2013-2016 should also exhibit positive signs.

One possible concern of our identification strategy is the endogeneity of bank-specific control variables. We mitigate this issue in two ways. First, we include them in the regressions lagged by one period. Second, we employ the dynamic Generalised Method of Moments (GMM) method proposed by Arellano and Bond (1991) and reviewed by Blundell and Bond (1998). More specifically, we use the two-step version of system-GMM with Windmeijer corrected standard errors in order to obtain efficient estimations. We consider all the bank-specific covariates as endogenous and we thus instrument them by their first, second and third lags in the difference equation and by the first difference of their first, second and third lags in the level equation.¹

Given that board composition is likely to persist, past board composition is likely to have a pivotal effect on the current one, hence requiring to be considered within the regressor set. For this reason, we chose a dynamic specification. In addition to controlling for the possible endogeneity of our regressors, this methodology also addresses the omitted variable bias, by fully accounting (through first-differencing) for the unobservable bank-specific characteristics.

Table 6 summarizes the estimation results of Equation [1], when the dependent variable is the proportion of women directors in the board. Column 1 presents GMM estimates of the baseline regression, while Column 2 shows a specification of Equation [1] where we add regional dummies in order to take into account possible differences and time-invariant unobservable regional factors that could affect our estimates.

Overall, our results suggest a significant horizontal spillover in unlisted banks after the introduction of gender quotas for listed firms. In all the two specifications, we can see in fact that

¹ We chose these instruments in order to have consistent estimates in terms of both validity of the instruments, tested by the Hansen test of over-identifying restrictions, and second order non-autocorrelation of the error terms.

the coefficient associated with the dummy variable for the year 2012 is positive and significant. This confirms the hypothesis that the need to remove board members with multiple directorships and the growing sensitivity towards a higher female representation due to the introduction of gender quotas for listed companies significantly favoured a higher gender diversity, even for banks not subjected to mandatory quotas. Keeping other factors constant, the implementation of the binding quotas and the inhibition of interlocking is associated with an increase in the female participation of roughly 2 percentage points. This finding also holds in column 2, when we estimate our model by adding the regional dummies

Although more pronounced in 2012, the mandatory gender quotas have positively affected board gender diversity also in the years following its introduction. Only in 2013, in fact, the increase is smaller and becomes not significant in the regional dummies specification, probably because of the numerous changes occurred in the previous year caused by the interlocking inhibition that imposed a high turnover in the boards and, physiologically, reduced the changes in 2013.

Also the coefficients of the years 2011 and 2008 are positive and significant. While the latter can be explained by the changes in board compositions associated with the poor governance practice emerged during the global financial crisis, the former can instead be related to an anticipation effect of the mandatory gender quota, which has started to promote a higher openness to gender diversity before its entry into force.

The size and significance of the coefficient associated with the lagged dependent variable fully captures the high persistence of the proportion of women in the boards, justifying the use of a dynamic specification. The correct specification of the model and the validity of the chosen instruments are confirmed by both the test of second order non-autocorrelation in the error term (AR(2) p-value) and the Hansen test of over-identifying restrictions (Hansen p-value).

Our results so far suggest that gender quotas generate horizontal spillovers, increasing the sensitivity of banks not directly affected by them in terms of board gender diversity. These findings are not in line with previous literature that extensively points out a lack of spillover effects from mandatory female board representation to gender equality in the top executives position within firms[(Bertrand et al., 2019; Maida and Weber 2019)

Our bank-specific control variables, mostly not significant at the conventional levels, highlight that the increasing gender diversity is not driven by specific needs related to performance, risk preference or banks' characteristics, but it is rather due to a cultural process which, thanks to mandatory quotas, opens top executives positions to higher female representations.

Among the covariates, only the standard deviation of ROA, board size and its quadratic terms have a significant impact on board female representation.

Contrary to our expectations, banks with a higher returns volatility are characterised by higher board gender diversity. This can be explained by the needs to contain bank risk-taking and the corresponding high returns volatility, which can have forced banks to increase female representation in their boards. The different timeframe considered can justify the divergence between our results and those obtained by de Cabo et al. (2012). While the former is based on the period 1998-2004, which was characterized by relatively stable profitability, the continuous

erosion of Italian banks' profitability following the global finance crisis and the sovereign debt crisis could have significantly modified the relation between the standard deviation of the return on assets and board gender diversity.

Our results show a weak non-linear relation between board size and percentage of female directors, corroborating that hypothesis that smaller boards are usually characterised by a higher homogeneity, also in terms of gender representation, even though larger board still tend to be dominated by men, in line with the findings of de Cabo et al. (2012).

To further investigate the existence of a potential horizontal spillover, Table 7 presents the results of regressions where the dependent variable is a dummy equal to 1 if the bank's board contains at least one woman and 0 otherwise. Column 1 contains the baseline GMM estimates and column 2, the GMM estimates in the specification with regional dummies. The findings are in line with those described above. Our main coefficient of interest, associated with the 2012 year dummy, is once again positive and statistically significant in all specifications. Furthermore, all the year dummies following the introduction of gender quotas are also positive and significant. These findings confirm the hypothesis that the introduction of gender quotas for listed firms has generated an emulation effect in unlisted banks, making only-male boards less likely.

Interestingly, although also the coefficients for the years 2008 and 2009 are positive and significant at the 10% level, we find for the year 2011 a coefficient which, for significance and magnitude, is completely in line with those estimated for the years following the introduction of gender quotas. This could be explained considering that unlisted banks may have anticipated the introduction of binding quotas. Considering the temporary misalignment between the introduction of the Golfo and Mosca law (2011) and its coming into force (2012), our results point out that for those banks which were not subject to legal bindings, the introduction of the law may have been more relevant than its actual entry into force, as a singling effect. Our findings further confirm the effectiveness of gender quotas in breaking the glass ceiling and promoting a higher gender diversity culture in boards.

According to the findings previously described, also the presence of at least one woman in the boards is mostly not affected by bank-specific characteristics. As for the proportion of women on boards, our results show a weak inverse U-shaped relation between board size and the likelihood of having at least one woman among the board directors.

Even though justifiable, taking into account the percentage of female directors, these results are quite surprising since they suggest that, above a threshold, an increase in the number of directors is associated with a higher likelihood of having only-male boards. Taken together, these results seem thus to suggest that larger boards are somehow more reluctant to reach wider gender equality. Consistently with the hypothesis that less risky banks might prefer female directors in order to avoid excessive risk-taking, the positive coefficient of the ratio between equity and total assets confirms that riskier banks are characterized by more homogeneous boards and, in particular, that lower capitalized banks show higher likelihood to have only-male boards.

4. Conclusions

Our paper investigates female presence in the boards of unlisted banks' boards across a time interval centered around the Golfo-Mosca quota law, which required, starting from 2012, at least a third of the boards of listed banks to be made up of women. Our analysis shows that, contrary to previous findings on vertical spillovers, compulsory quotas on listed firms also affected financial institutions that were not obliged by law to fulfil the quota rule. Moreover, this horizontal spillover effect has been in act since 2011, when the law was introduced, and before it was actually implemented, and persisted over time. Our findings can be rationalized considering that unlisted banks might want to incorporate a principle of board balance so as to signal their anti-discrimination attitude.

Our studies as two main limitations. First, due to unavailability of data, we are not able to control for the independence of board members and to check whether the higher gender diversity is also associated to higher boards independence. Second, as a first draft of the paper, we are aware the sample should be enlarged in order to obtain more robust evidence. We aim to overcome this issue by hand collecting the board members data in order to enrich our sample in terms of both number and type of banks.

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Table 2: Sample features and representativeness (2016 – data in thousands Eur)

| | <i>Sample</i> | <i>Italian banking system</i> | <i>% Sample</i> |
|------------------|------------------|-------------------------------|-----------------|
| N. Banks* | 120 | 197 | 60,91% |
| of which: listed | 16 | 16 | 100% |
| Total assets | 1.968.146.775,28 | 3.036.632.000,00 | 64,81% |
| Total loans | 1.132.853.777,54 | 2.033.311.000,00 | 55,71% |

*: excluding cooperative banks and foreign subsidiaries.

Table 3: Board dimension and female presence

| <i>Year</i> | <i>Size</i> | <i>N. of Banks with women on Board</i> | <i>% of Banks with women on Board</i> |
|-------------|-------------|--|---------------------------------------|
| 2006 | 11.59 | 37.00 | 30.83% |
| 2007 | 12.10 | 34.00 | 28.33% |
| 2008 | 12.21 | 37.00 | 30.83% |
| 2009 | 12.14 | 43.00 | 35.83% |
| 2010 | 12.09 | 50.00 | 41.67% |
| 2011 | 12.10 | 57.00 | 47.50% |
| 2012 | 11.70 | 68.00 | 56.67% |
| 2013 | 11.38 | 68.00 | 56.67% |
| 2014 | 10.98 | 72.00 | 60.00% |
| 2015 | 10.61 | 74.00 | 61.67% |

Table 4: Board dimension and female presence: comparison between listed and unlisted banks

| | <i>% of female directors</i> | | <i>YoY change in the % of female directors</i> | | <i>% banks with at least 1 woman in the BoD</i> | |
|------|------------------------------|----------------|--|----------------|---|----------------|
| | Listed banks | Unlisted banks | Listed banks | Unlisted banks | Listed banks | Unlisted banks |
| 2006 | 1,78% | 2,59% | | | 25,00% | 21,15% |
| 2007 | 2,00% | 2,55% | 0,22% | -0,04% | 31,25% | 21,15% |
| 2008 | 2,29% | 2,91% | 0,29% | 0,36% | 37,50% | 25,96% |
| 2009 | 1,65% | 3,90% | -0,63% | 1,00% | 25,00% | 34,62% |
| 2010 | 2,11% | 4,54% | 0,45% | 0,64% | 31,25% | 40,38% |
| 2011 | 2,88% | 5,15% | 0,77% | 0,61% | 43,75% | 47,12% |
| 2012 | 7,92% | 6,54% | 5,04% | 1,39% | 62,50% | 54,81% |
| 2013 | 17,92% | 6,29% | 10,00% | -0,25% | 81,25% | 50,96% |
| 2014 | 23,09% | 7,04% | 5,17% | 0,75% | 93,75% | 52,88% |
| 2015 | 25,93% | 8,33% | 2,84% | 1,29% | 93,75% | 53,85% |

Table 5: Percentage of women on boards

| Year | % Women | YoY change in the % of women | % Women (where present) | YoY change in the % of women (where present) | % Women in local banks |
|------|---------|------------------------------|-------------------------|--|------------------------|
| 2006 | 2.52% | | 10.57% | | 3.46% |
| 2007 | 2.54% | 0.02% | 10.63% | 0.06% | 3.45% |
| 2008 | 2.83% | 0.29% | 9.95% | -0.68% | 3.77% |
| 2009 | 3.64% | 0.80% | 10.63% | 0.68% | 4.18% |
| 2010 | 4.25% | 0.62% | 10.58% | -0.05% | 4.43% |
| 2011 | 4.89% | 0.64% | 10.38% | -0.20% | 5.29% |
| 2012 | 6.70% | 1.82% | 11.90% | 1.52% | 7.76% |
| 2013 | 7.71% | 1.01% | 13.79% | 1.89% | 7.43% |
| 2014 | 9.27% | 1.55% | 15.62% | 1.83% | 8.83% |
| 2015 | 10.75% | 1.49% | 17.72% | 2.10% | 10.10% |

Figure 1: Women directors: is it enough to break the glass ceiling?

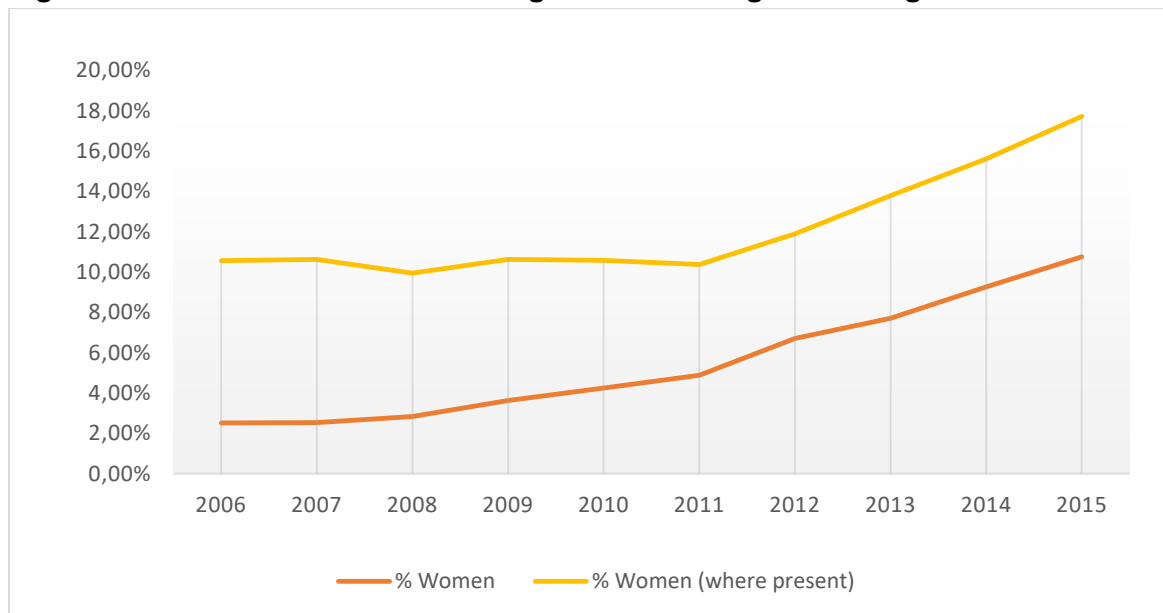


Table 6: Baseline regression with proportion of women on board as dependent variable.

| | Proportion of women in the board (1) | Proportion of women in the board (2) |
|---|--|--|
| Proportion of women in the board t-1 | 0.700*** (0.063) | 0.748*** (0.058) |
| 2008 | 0.004 (0.004) | 0.005 (0.004) |
| 2009 | 0.007 (0.005) | 0.009* (0.005) |
| 2010 | 0.005 (0.005) | 0.006 (0.005) |
| 2011 | 0.009 (0.006) | 0.010* (0.006) |
| 2012 | 0.020*** (0.007) | 0.021*** (0.007) |
| 2013 | 0.010* (0.006) | 0.009 (0.006) |
| 2014 | 0.017** (0.007) | 0.015** (0.007) |
| 2015 | 0.021*** (0.008) | 0.020*** (0.007) |
| Size t-1 | 0.016 (0.012) | 0.012 (0.010) |
| Capitalizaiontt-1 | 0.013 (0.009) | 0.008 (0.011) |
| Loan ratio t-1 | -0.020 (0.020) | -0.036 (0.024) |
| ROA t-1 | 0.162 (0.431) | 0.110 (0.459) |
| Std. ROA t-1 | 0.003 (0.003) | 0.003 (0.003) |
| Cost to income t-1 | 0.017 (0.019) | 0.015 (0.021) |
| Number of directors t-1 | 0.021** (0.008) | 0.024*** (0.009) |
| Number of directors2 t-1 | -0.001*** (0.000) | -0.001*** (0.000) |
| Gr total assets t-1 | -0.001 (0.014) | 0.002 (0.016) |
| Constant | -0.175* (0.096) | -0.154** (0.078) |
| N | 876.000 | 876.000 |
| Regional dummies | No | Yes |
| Hansen p-value | 0.340 | 0.197 |
| Ar(2) p-value | 0.183 | 0.191 |

* p<0.1, ** p<0.05, *** p<0.01

Table 7: Baseline regression with a dummy variable equal to one whether at least one woman is in the board as dependent variable.

| | Woman on board (1) | Woman on board (2) |
|---|-----------------------|-----------------------|
| Proportion of women in the board t-1 | 5.333*** (0.524) | 5.493*** (0.527) |
| 2008 | 0.038 (0.040) | 0.042 (0.037) |
| 2009 | 0.099*** (0.038) | 0.091** (0.038) |
| 2010 | 0.117*** (0.045) | 0.101** (0.045) |
| 2011 | 0.149*** (0.050) | 0.144*** (0.050) |
| 2012 | 0.173*** (0.053) | 0.162*** (0.055) |
| 2013 | 0.097** (0.043) | 0.096** (0.044) |
| 2014 | 0.145** (0.062) | 0.138** (0.063) |
| 2015 | 0.140** (0.067) | 0.137* (0.074) |
| Size t-1 | 0.013 (0.088) | 0.008 (0.088) |
| Capitalizaiontt-1 | 0.166* (0.091) | 0.165* (0.089) |
| Loan ratio t-1 | -0.113 (0.250) | -0.074 (0.287) |
| ROA t-1 | -2.755 (2.397) | -2.356 (3.070) |
| Std. ROA t-1 | -0.026 (0.019) | -0.021 (0.019) |
| Cost to income t-1 | -0.039 (0.141) | -0.022 (0.147) |
| Number of directors t-1 | 0.152* (0.078) | 0.190** (0.087) |
| Number of directors2 t-1 | -0.005 (0.003) | -0.007* (0.004) |
| Gr total assets t-1 | 0.059 (0.100) | 0.058 (0.107) |
| Constant | -0.483 (0.525) | -0.851 (0.677) |
| N | 878 | 878 |
| Regional dummies | No | Yes |
| Hansen p-value | 0.324 | 0.390 |
| Ar(2) p-value | 0.468 | 0.484 |

* p<0.1, ** p<0.05, *** p<0.01