

# GENDER DIVERSITY ON EUROPEAN BANKS' BOARDS OF DIRECTORS: TRACES OF DISCRIMINATION

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## Abstract

The objectives of this paper are to study women's presence on European Union (EU25) banks' boards and to identify the types of discrimination that are behind their scarce representation. We have detected signs of statistical discrimination since women would be excluded from the boards of riskier banks. There are banks that have a bias towards the homogeneity of the group and prefer a small and friendly board without women directors. Finally, there is also some evidence of the prediction of Becker's theory, since banks that have a growth orientation have a greater presence of women on their boards.

JEL classification: G34; G21; J16; J71; C35

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## **1. Introduction**

According to the most recent description offered by the Organisation for Economic Cooperation and Development (OECD), corporate governance “involves a set of relationships between a company’s management, its Board, its shareholders and other stakeholders [and] also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined” (OECD, 2004, p. 11).

Consistent with the OECD definition, the Basel Committee on Banking Supervision (BCBS) set out a definition from the perspective of the banking industry, according to which “corporate governance involves the manner in which the business and affairs of individual institutions are governed by their Boards of Directors and senior management, which affects how banks: set corporate objectives [including generating returns to owners]; operate the bank’s business on a day-to-day basis; meet the obligation of accountability to their shareholders and take into account the interests of other recognized stakeholders ...”(BCBS, 2006, p. 4). The BCBS has called attention to the need to study, understand, and improve the corporate governance of financial entities, since good corporate governance increases monitoring efficiency and is necessary to guarantee a sound financial system and, consequently, a country’s economic development.

The European Central Bank (ECB) has acknowledged the importance of sound corporate governance systems, making the valuable observation that corporate governance is even more important for banks considering their role as financial intermediaries and their potential systemic implications (ECB, 2005). Therefore, a robust system of corporate governance complements and facilitates the work of bank supervisors, which, in turn, explains the supervisory interest in reliable banks’ corporate governance mechanisms (BCBS, 1998).

Over recent years, corporate governance has attracted international attention as a means to address the “separation of ownership and control” (or “agency”) problem in public companies, thus promoting corporate efficiency. Several important initiatives have been taken in the European Union (EU), the United States (US) and at the international level aiming at the establishment of sound corporate governance practices. In relation to the banking industry, in particular, the BCBS (2006, pp. 6-18) has promulgated a set of accepted corporate governance principles. Additionally, the BCBS (1998, pp. 2-5) paper laid out thirteen core principles that should guide the organization and operation of banks’ internal control systems.

In spite of this growing interest in banks' corporate governance, the literature about it is limited (e.g., Macey and O'Hara, 2003; Levine, 2004; Caprio et al., 2007; Adams and Mehran, 2008). In particular, and with respect to the diversity of the banks' boards, there is a dearth of studies about women's presence on the boards of directors and the performance of financial corporations. Moreover, the existing literature focuses on the ownership of US corporations, as we will see later, and, to the best of our knowledge, none of them study the presence of women on the boards of European banks.

Our paper aims at bridging this gap at a time when a number of European market regulators are considering female quotas on the publicly traded companies' boards as a requirement in their codes of conduct. Besides, the current global financial crisis has highlighted the importance of appointing to the boards of directors the most talented individuals (independently of their gender) in order to improve corporate governance as well as to facilitate and accelerate the changes that will be required to recover economic prosperity. In this sense, Iceland has appointed women executives to key positions in recapitalized banks to help rebuild its shattered financial sector. In fact, failure to appoint women to the board may be a signal (among others) of conscious or unconscious discriminatory attitudes in the bank, distorting the decision-making process of the financial institution. In this sense, a more open and transparent directorship appointment process would be a key aspect of proper corporate governance, and this would facilitate the access of women to the bank's board.

The objectives of this paper are twofold: first, to study women's presence on boards of European Union (EU25) banks and identify those determinants that can explain their scarce presence on their boards of directors; secondly, to try to identify the types of discrimination that are behind women's under-representation on the European banks' boards, by linking those determinants with alternative theoretical models of discrimination. Additionally, we will show the economics and policy implications that are derived from our analysis.

In order to do this, we have selected a sample of 600 European banks and analyzed the gender composition of their boards. Additionally, we have estimated a Poisson model on the number of female directors on the boards, where we have found that signs of preference for friendly boards are a good predictor of a lower presence of women. There is also evidence of statistical discrimination, since female directors tend to be excluded from the boards of riskier banking institutions. We have also found that banks that have a growth orientation have a larger proportion of women on their boards.

The paper is organized in five parts in addition to this introduction. In the second section, we review the relevant literature related to corporate governance in banks and we justify the importance of gender diversity as a relevant topic of banks' corporate government. In section three, we study the possible causes of the under-representation of women on the boards of directors of European banks and we construct our work hypothesis by linking theories on discrimination with determinants of women's presence. Section four describes our sample of EU banks and presents the variables proposed for the later analysis. Section five presents the model and the results of the empirical analysis. The last section concludes the paper.

## **2. Literature review: Gender diversity as a relevant topic of banks' corporate governance**

Banks have two related characteristics that are specific to financial institutions and justify a separate analysis of their corporate governance (Andrés and Vallelado, 2008). First, banks are generally more opaque than non-financial firms. Although information asymmetries plague all sectors, evidence suggests that these informational asymmetries are larger in banks, in part due to rapid developments of technology and increased financial sophistication (Furfine, 2001). In banking, loan quality is not readily observable and can be hidden for relatively long periods. Moreover, banks can alter the risk composition of their assets more quickly than most non-financial industries, and banks can readily hide problems by extending loans to clients who cannot service previous debt obligations. The comparatively severe difficulties in acquiring private information about bank behavior and monitoring ongoing bank activities hinder traditional corporate governance mechanisms (Levine, 2004). Second, banks are frequently very heavily regulated. Because of the importance of banks in the economy, and the opacity of bank assets and activities, governments impose an elaborate array of regulations on banks. However, many government regulations may adversely distort the behavior of bankers and inhibit standard corporate governance processes.

In fact, the existence of an implicit or explicit public safety net against banks' failure generates perverse incentives ("moral hazard") in the sense that banks, taking for granted the employment of safety net policies in the case of trouble, are induced to take on more risks (Dale (1996); Santos (2001); Demirgüç-Kunt and Kane (2002); Sbracia and Zaghini (2003); Kahn and Santos (2005)), thus increasing agency problems and raising new corporate governance concerns for banks. The problem of moral hazard is exacerbated in situations where a bank is at or near insolvency. In such a situation, the shareholders have a strong incentive to increase risk because they can allocate their losses to third parties while still receiving any gains that

might result from the risky behavior (Macey and O'Hara, 2003). In this context, the board of directors of banks assumes a particularly pivotal and sensitive role in achieving a delicate balance among the (conflicting) interests of the various groups of stakeholders: depositors and creditors, the bank's managers, shareholders as well as regulatory authorities as agents of the taxpayers (Adams and Mehran, 2008).

Bearing these considerations in mind, diversity can be considered an important dimension in order to gain better corporate governance of banks. Watson et al. (1993) and Fondas and Salsalos (2000) argued that diversity in board composition via greater female representation would improve the board's monitoring role in protecting shareholder interests by better top management control, reducing agency costs. Proponents of diversity also maintain that heterogeneity in decision-making and problem-solving styles produces better decisions through the operation of a wider range of perspectives and a more thorough critical analysis of issues (Jackson, 1992). In fact, a higher diversity of perspectives and points of view when perceiving environmental threats and opportunities can be especially important in a sector highly exposed to a risk of contagion and where crisis can have disastrous consequences in terms of crippled economies, destabilized governments and intensified poverty. The recent financial crisis and its dramatic consequences of recession in most nations dramatically advertise the enormous consequences of poor governance of banks and raise serious questions about the tradition of having largely homogeneous corporate boards throughout the financial sector.

One central economic argument in favor of board diversity is that it increases the aggregate level of resources at the board's disposal, enhancing complex problem-solving and improving the quality of strategic decision-making (Forbes and Milliken, 1999). In this sense, there are numerous studies that highlight the benefits of diversity for improving corporate governance. Brown et al. (2002) found that diverse boards in terms of gender tend to be more active and demonstrate better results in terms of client satisfaction, and risk or audit management. Robinson and Dechant (1997) built a case for the importance of corporate diversity in terms of gender, race and age. They postulated that: (a) corporate diversity promotes a better understanding of the marketplace; (b) diversity increases creativity and innovation; (c) diversity produces more effective problem-solving; (d) diversity enhances the effectiveness of corporate leadership; and (e) diversity promotes effective global relationships. Rosener (1990) argued that board diversity influences the decision making and leadership styles of the organization.

Nevertheless, regarding issues of corporate governance for banks, the composition and duties of the board of directors have been at the core, but board diversity is not an issue that has received much attention (Cornett et al., 2003; Becher and Campbell, 2004). In fact, only very few studies examine the effects of diversity on the performance of the banking industry. Richard (2000) studied the relationships among racial diversity, business strategy and firm performance in the banking industry and he found that racial diversity in association with a growth strategy enhances productivity and contributes to creating value for bank managers. Bantel and Jackson (1989) argued that heterogeneity has a positive effect on innovative and creative decision-making. In fact, they showed that more innovative banks are headed by more educated top management teams (like those involved in board decision-making) who come from diverse functional backgrounds.

Next to the effects of gender composition on banks, some studies have focused on studying the differences in operating performance of women and other minority-owned US commercial banks. However, the results are equivocal. Colby (1993) finds that minority-owned banks have tended to be smaller, somewhat less profitable and more expenditure prone than comparable groups of non-minority banks. In addition, earlier studies reported that minority-owned banks tended to operate with lower leverage (equity capital to assets ratios), to have more conservative asset portfolio management policies and to record higher loan losses than their non-minority peers (Brimmer, 1971; Boorman and Kwast, 1974; Bates and Bradford, 1980; Kwast, 1981).

In contrast to these negative findings, the study of Meinster and Elyasiani (1988) found that minority-owned banks had significantly improved their capital ratios and decreased their holdings of liquid assets, while expanding their use of purchased funds. Hasan and Hunter (1996) examined differences in the operating performance of minority and women-owned commercial banks from the viewpoint of production efficiency. In order to accomplish this, they compared the operating performance of their entire sample of banks (minority and non-minority-owned banks) relative to a set of *best-practice* banks. Their results showed that, although the average minority or women-owned bank was significantly more inefficient<sup>1</sup> than the average

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<sup>1</sup> Bank efficiency is measured for each bank using a standard bank cost function that includes the total cost of inputs used to produce the bank's various outputs.

non-minority bank, the women-owned banks were the most efficient among the sampled minority and women-owned banks.

Given the growing importance of gender diversity as a relevant topic of corporate governance at a moment when improving governance is a key issue for banks to survive in a global crisis, it seems necessary to study the determinants that are related to the low gender diversity on European banks' boards of directors, in order to try to identify possible failures of the governance mechanism of banks and types of exclusion. This analysis will help us to ponder policy measures that can contribute to achieving gender diversity on European banks' top corporate boards.

### **3. Causes of women's under-representation on boards of directors. Theoretical background**

The low representation of women in the highest executive positions and on the boards of European banks is related to the phenomenon known as the *glass ceiling*. This is usually defined as a set of obstacles that means an impassable wall or barrier made up of procedures, structures, power relations, beliefs or habits, which complicate a woman's access to high directive positions (Morrison et al., 1987; Powell and Butterfield, 1994).

There are several studies that show that the presence of women on boards of directors is limited worldwide. According to data from the Ethical Investment Research Service (Catalyst, 2005), women directors made up less than 10% of the total number of directors of companies headquartered in Australia, the United Kingdom, Germany, France, Singapore, Hong Kong, Spain, Italy and Japan. Only Norway (greater than 25%), where federal legislation requires all boards to have at least 2 women by 2006 and to have 40% women by 2008, and Sweden (almost 20%) had percentages of women directors greater than those in the United States.

The 2004 European Professional Women's Network Monitor (EPWN, 2004) in its report of more than 250 European companies found a total of 8% of female representation on corporate boards in Europe, far away from the USA and Canada, with 13.6% and 10.6% of women on boards, respectively. The biennial Heidrick & Struggles corporate-governance studies provide a unique and comprehensive overview of the boards of some 300 of Europe's top companies. The 2005 report studies a sample of 294 companies from 10 countries (Belgium, France, Germany, Italy, the Netherlands, Portugal, Spain, Sweden, Switzerland and the United Kingdom) selected by market capitalization and finding a total of 7.3% of women in the boardroom. Accordingly, the study considers the lack of diversity as a major concern for European companies.

More recently, Vinnicombe et al. (2008) in their “Annual Female FTSE Report” found a total of 12% female representation on the boards of the FTSE 100 companies. This study highlights the slow progress made in the number of women on British boardrooms, where the proportion of female directors of top companies has increased from 6.9% in 1999 to 11.7% to 12% in 2008, an incremental rise of only 5 percentage points. According to the “2007 Catalyst Census of the Fortune 500 Companies”, women in the United States held 14.8% of all Fortune 500 boardroom seats in 2007, compared with 14.6% in 2006.

Regarding the banking sector, the results from a research project on the position of women in the decision-making of commercial banks in the European Union (Quack and Hancké, 1999) showed that the proportion of women among managers decreases as the manager level increases. Besides, the project showed the fact that there is a considerable gap between the proportion of women among bank employees and their representation among bank managers. So, whereas in 1995 women accounted for half of the employees of the banks in the sample, they represented only 16% of their managerial workforce.

Distinct groups of explanations could be behind this low representation. In the first place, there are differences between men and women that lead to different professional profiles between them, causing women in few cases to fit with the profile sought for candidates to hold a position on the board of directors.<sup>2</sup> So, in accordance with companies’ standard criteria, most women would be *excluded from the pool of potential candidates* to hold these positions (Guillaume and Pochic, 2009). The second explanation is related to the well-known *taste-based discrimination*. In this sense, if a company considers the admission of women to its board to be harmful to its performance (they may consider that there are non-pecuniary or psychic costs from working with them), individuals who decide the composition of the board would prefer either to pay or forfeit income to hiring women (Becker, 1957). The third explanation, called *statistical discrimination*, occurs if women are judged according to the average perceived characteristics of their group and not on the basis of their own personal characteristics as individuals (Phelps, 1972) or systematically underestimated in respect of their skills (Wolfers, 2006).

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<sup>2</sup> Generally, candidates to become part of the board of directors are demanded to have, among other prerequisites, elevated previous experience in positions of responsibility in departments such as production and finance, whereas the heads of other areas like human resources or marketing, where there is a greater presence of women, are not considered to the same degree as possible candidates to occupy a director position.



With respect to the first group, among the factors that explain that there are fewer “potential” women than men to hold a seat on the board, there are some explanations such as the existence of a segregation factor, which tend to place men in executive positions, causing women usually to lack the experience and necessary capacities to hold managerial posts. There are also unobservable differences, such as a relative lack of long-term career commitment among women (Bertrand and Hallock, 2001), a greater taste for fringe benefits or good working conditions, familiar responsibilities or the anticipation by many women of the glass ceiling, which drives women to sacrifice their professional development in favor of their family life. In these cases, the limited presence of women on boards of directors would not be due so much to gender discrimination in the selection process of the board members as to the existence of socio-cultural obstacles in the stages leading up to the professional promotion of a woman even before she could reach a stage where she could be considered a candidate for the board. Nevertheless, once a woman has reached the group of top executives, it is reasonable to assume that such differences are minimized and that men and women are likely to be similar, and both share a high level of job motivation and high career ambitions.<sup>3</sup> So, additional causes must be explored to explain this acute under-representation.

In the case of *taste-based discrimination*, animus of co-workers or customers may be such that the firm’s marginal revenue product from promoting women is lower or, alternatively, a company may be willing to accept lower profits in order to avoid promoting women. Becker’s theory predicts that, on a perfectly competitive market, time and competition among companies would finish solving the problem of discrimination, since companies that discriminate would not survive in the long term as they have to support higher costs and a loss of efficiency due to their preference for avoiding women. In spite of the numerous critiques to this theory Heckman (1998) argues that this prediction may not be false. In fact, according to this author, discrimination will only disappear in the presence of competition<sup>4</sup> and even then it may take decades to fade out of the labor market.

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<sup>3</sup> There is evidence that women are ambitious to achieve board directorships and that of these women directors in the pipeline only a few have been approached by search consultants about potential non-executive directors’ appointments (Vinnicombe et al., 2008).

<sup>4</sup>Specifically Heckman states that only if the supply of entrepreneurship is perfectly elastic in the long run at a zero price, so entrepreneurs have no income to spend to indulge their tastes, or if there are enough non-prejudiced companies to hire all women will discrimination disappear from Becker’s model.

In the case of banks, these dynamics are harder to find due to the highly regulated financial framework in which they operate and the existence of several support lines for troubled institutions. Nevertheless, there are other ways for Becker's dynamics to affect the objectives of banks. Among them, growth strategies are the ones that are easiest to identify from the bank economic information, and they have been spread among European banks in recent years. Those banks involved in rapid growth strategies have a higher need for income and, according to some authors (e.g., Hopkins and Hopkins, 1997), usually face operational efficiency problems. Since banks faced with challenging growth strategies have more income needs, it could be expected that they would be less willing to pay or forfeit income for not working with women. Therefore, it could be expected that these banks have more diverse boards since they are less likely to indulge their preferences against women.

Another type of behavior that is occasionally found on boards of directors (Pearce and Zahra, 1992) that could be generating this type of discrimination is the existence of a bias towards the homogeneity of the group, considering heterogeneity at the heart of boards as a potential source of conflict and of difficulties in decision-making processes. In this last case, there could be agency costs derived from the CEO dominance over the main decision-making organs in companies (Hermalin and Weisbach, 1998). In this sense, Adams and Ferreira (2007) point out that some CEOs would prefer small and homogeneous boards, since this would reduce the monitoring process of the board. Raheja (2005) also stated that insider directors tend to align with the CEO and not always with shareholders, so their supervision role can only be granted with a big enough board. This way, smaller boards may be interpreted as a signal of preference for homogeneity on the board, while larger ones are a signal that the CEO is not so worried about a friendly board as he is with gaining a wider range of diverse advice. A CEO interested in obtaining a homogeneous board would try to appoint *friendly* directors, which, in the context of the usually male-dominated boards of directors, would imply that women can be seen as an annoying element. Following this reasoning, we could expect the bigger the board the more diverse it is.

According to *statistic discrimination* (Phelps, 1972), the company that seeks to maximize its expected profit will discriminate against women if it believes them to be less qualified on average than men and if the cost of gaining information about the individual applicants is excessive. The a priori belief in the probable preferability of a male over a female candidate might stem from the employer's previous statistical

experience with the two groups or it might stem from prevailing sociological beliefs about the abilities of women and from prejudices toward them in the society.

The perception that women are more risk-averse than men (Jianakoplos and Bernasek, 1998; Sundén and Surette, 1998) is seen by some authors as a stereotype that does not reflect women's actual economic behavior and as a major cause of "glass ceilings" in corporate promotion ladders (Johnson and Powell, 1994). In this sense, Schubert et al. (1999) found that on contextual financial decisions the preconceptions concerning the risk attitudes of female investors and managers may be more prejudiced than reality and they would be a source of statistical discrimination against women in financial and labor markets. This discrimination would mean that when a company/bank is confronting a significant level of risk, they would be less likely to hire women for the board, since stereotypes would mean that they are wrongly seen as less skilled to make the risky decisions that may be necessary for a firm's success. If this is the case, **we can expect a lower presence of woman on the boards of riskier banks.**

#### **4. Data and descriptive analysis**

We use annual data of banks from the BankScope<sup>5</sup> database for the EU25 from 1998 through 2004. The characteristics of the sample banks are as follows: commercial banks, mortgage and real estate banks, medium and long-term credit banks and bank holding companies, all of which report on local GAAP. Banks with shareholders outside the EU have been eliminated. Savings banks have been also excluded because of their ownership and national peculiarities.

The database includes 1350 EU25 largely private banks, of which 75 are independent institutions and the rest are subsidiaries of financial or non-financial institutions as of the last reporting year.<sup>6</sup> Only 221 banks are listed in the stock market. From this database, our sample includes only 612 EU25 banks for which BankScope provides information on the composition of their boards of directors (7,868 board members).

The information on board members of banks was also obtained from the BankScope database, updated in December 2006. In order to determine the gender composition of the board, the first names of the board members' were examined.

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<sup>5</sup> BankScope is a financial database covering 10,500 world banks. It offers subscribers data of up to 8 years of detailed spreadsheet information, compiled by FITCHIBCA mostly from the balance sheet, income statement and applicable notes found in audited annual reports. It also includes data details on ownership, produced by Bureau Van Dijk, such as lists of shareholders and lists of banking subsidiaries.

<sup>6</sup> Twenty-one are public or government controlled banks, of which nine are part of the Nordea Group.

Table 1 presents descriptive statistics on women's presence on EU25 banks' boards of directors (December, 2006).

[Table 1]

With regard to the characteristics of the boards of directors (Table 2) of the banks in our sample, we conclude that only 7% of the board seats, that is, 555, are held by women. The average number of board seats by bank is 12.86, of which only 0.91 are held by women. The maximum number of women present in any of the European banks' boards of directors in our sample is 10. This is the case of the EBS Building Society in Ireland. In turn, the maximum number of men in our sample of banks' boards of directors is 65 (IKB Deutsche Industriebank AG in Germany).

[Table 2]

Only 312 banks have included at least 1 woman on their boards of directors. That is, 51% of the banks of our sample have at least 1 woman on their board of directors, although the percentage of banks that included more than 2 women is considerably smaller (10.6%) (Table 2 and Figure 1).

[Figure 1]

Sweden and Slovenia are the two EU25 countries where women have the largest presence on the boards of banks, while Portugal, Italy and Belgium have the lowest presence. Additionally, four of the new accession countries to the EU do have an average percentage of women on the board of directors that is above the EU25 average (Figure 2).

[Figure 2]

## **5. Variables definition**

Gender diversity is measured by the proportion of female directors on the board of each financial institution. We specify a model where this variable is explained in terms of variables related to the conjectures proposed in section 3.

The mean of the Growth Rate of Total Assets from 1998 to 2004 has been included as a proxy for banks' growth strategy as higher percentages reflect a growth strategy and negative ones reflect a downsizing policy. This measurement is consistent with the previous measurement of a bank's orientation toward growth (Mehra, 1996).

In order to test the possible relation between risk and board diversity, we have included two different variables: one is the log of standard deviation of ROAA over the studied period (1998-2004) as a measure of the risk that each bank assumes. We have also included the Equity on Total Assets in log as a leverage measure since it captures the amount of protection afforded to the bank by the equity invested in it. So, the higher this figure, the more protection there is, while a lower ratio suggests a relatively risky position (Staikouras et al., 2007). This ratio has been commonly used in the literature, finding a positive relationship with the bank profitability (Bourke, 1989; Molyneux and Thornton, 1992).

We also control by the banks' board size, since it can be considered as a proxy for the preference for homogeneity in the sense that banks that have a bias towards discrimination for preference do not see diversity as an advantage. Therefore, they tend to prefer small and homogeneous boards, since the diversity in small groups can have a large cost in terms of decision taking. In turn, a bigger board can be an indication that the bank has a lesser preference for homogeneity, which is reinforced by the fact that the power of each member is diluted. In this case, it is more likely to find gender diversity.

We have also included some financial variables in the model to control for *bank size* (Total Assets), *performance* (ROAA) and *efficiency* (Cost to Income). To take into account possible abnormal observations over the study period, we have considered the means of those financial variables from 1998 to 2004.

When considering the variable to be introduced into the model as a measure of the bank size, there are three important alternatives considered in the literature: Number of Employees, Net Income and Total Assets. We have chosen Total Assets in thousand US dollars in log as representative of the bank size since this measure is an established way of accounting for differences in firm size and has been used in previous bank-related studies (Delery and Doty, 1996; Hopkins and Hopkins, 1997). We have transformed the variable to its natural logarithm to avoid skewness in the distribution.

We have chosen Return on Average Assets (ROAA) as a measure of the bank's performance as this is one of the most widely used measures of bank profitability (Staikouras et al., 2007) as it looks at the returns generated from the bank's assets. Another alternative is Return on Average Equity (ROAE) but this is a measure of the return on shareholder funds. Besides, one should be careful about putting too much weight on this ratio since a high ratio may be achieved at the expense of an over-leveraged balance sheet.

We have introduced the Cost to Income Ratio into the model as a measure of efficiency. This ratio measures the overheads or costs of running the bank, the major element of which is normally salaries, as the percentage of income generated before provisions.

Finally, we have also considered dummy explanatory variables that control for the country of origin of the bank with Germany as the reference, the bank's type of activity, commercial bank being the reference category,<sup>7</sup> and whether the bank is listed on the stock market or not.

Table 3 shows descriptive statistics of several financial variables as well as the statistical significance of the mean differences between *banks with at least one woman on the board* and *banks with only men on the board*. The descriptive analysis is based on the set of financial variables described above.

[Table 3]

## 6. Model and empirical results

In this section we discuss the relationships between the presence of women on the boards of directors of European banks and the explanatory variables presented in the previous section. In order to do this, we define the endogenous variable: *number of women on the board* ( $Y_i$ ). This variable can take discrete values ranging from zero to infinity, so it seems adequate to consider it as a *Poisson* variable. In a *Poisson* regression, each observation  $i$  (each bank board) is the outcome of a random variable with a *Poisson* distribution of parameter  $\lambda_i$ . So, the probability that the number of women on a board of directors is equal to a given number will follow equation (1):

$$\Pr[Y_i = y_i] = \frac{(\lambda_i)^{y_i}}{y_i!} e^{-\lambda_i} \quad y_i = 0,1,2,\dots \quad (1)$$

Parameter  $\lambda_i$  also represents the *expected number of women on the board*. This parameter can be modeled to vary in accordance with a non-negative function:

$$\lambda_i = n_i \cdot e^{\mathbf{X}_i \beta} \quad (2)$$

where  $\mathbf{X}_i$  is the vector of independent variables and  $n_i$ , the board size, is the exposure variable. In fact, in a

Poisson distribution  $\frac{\lambda_i}{n_i} = \cdot e^{\mathbf{X}_i \beta}$  is the expected proportion of women on the board. Table 4 presents the

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<sup>7</sup> The references categories have been selected as the ones with the highest proportion in the sample.

results of the estimation of this Poisson regression. Model I includes all the variables considered, while, in order to reduce multicollinearity concerns, only significant variables remain in Model II.

[Table 4]

The estimation results<sup>8</sup> show that both models are significant (when considering both the likelihood ratio test and the Wald test) in explaining differences among the number of women on the boards. Specifically, in Model II the Board Size, the Growth Rate of Total Assets and the Standard Deviation of ROAA, as well as the Cost to Income and the Equity on Total Assets Ratio, are variables that help to explain differences in the proportion of women on the board. This is also true for the country of origin. By contrast, we have found no statistically significant effect of the type of bank, the listed character of the bank or the size of the bank measured by Total Assets. Also, performance is not significant when measured in terms of ROAA.

Nevertheless, the nonlinear expression of the Poisson model implies that in order to describe the influence of each variable we could not rely on the value of the estimated coefficients. We have to perform a sensibility analysis, from a base case<sup>9</sup> where the expected number of female directors is computed, changing the values of one of the variables and fixing the other ones (*caeteris paribus*). The results of this sensibility analysis are presented in Figure 3, Figure 4 and Table 5.

[Figure 3]

As can be seen in Figure 3, there are differences in the proportion of female directors on the boards of European banks. These differences persist even when the other variables that may have an influence on the gender composition of the board are taken into account. The countries with a lower female representation are generally those from the south of Europe, while North and East European countries are the ones where women are more present in the boardroom.

In the case of the *board size*, it is confirmed that larger board sizes are linked to a higher proportion of women (Figure 4). The positive correlation between this variable and women directors could be explained by the existence of some kind of *preference for homogeneity* on the board, as it has been stated in the third

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<sup>8</sup> One of the major drawbacks of Poisson modeling is that this statistical distribution implies that the mean and the variance of the dependent variable must be equal. In our case, the sample has a mean number of women on the boards of 0.9 while the variance is 1.6. Nevertheless, possible over-dispersion in the sample has been discarded since alternative modeling via zero-inflated Poisson, negative binomial regression and zero-inflated negative binomial models rejects over-dispersion.

<sup>9</sup> We have considered as a base case a German commercial bank that is not listed, with twelve board directors where the financial variables are equivalent to the median values of the whole sample.

section. On the other hand, this evidence is contrary to the possible presence of tokenism<sup>10</sup> behavior, since this would imply that once a woman holds a position on the board, incentives to hire additional women would disappear. Therefore, under tokenism behavior, the expected proportion of female directors on the board would tend to decrease with the board size. This inverted U-shape effect was also found by Andrés and Vallelado (2008) in the case of board size and performance.

[Figure 4]

We observe that the *Growth Rate of Total Assets* increases the proportion of women on the board (Table 5), implying that those banks with a growth strategy are the ones more inclined to hire women for their boards of directors. In this way, those banks that are involved in growth strategies have more income needs, so they could be less willing to pay or forfeit income for not working with women. Therefore, it could be expected that those banks are less likely to engage in discriminatory behaviour.

Regarding the *Standard Deviation of ROAA %* we find that the more uncertainty on the ROAA, the less likely it is to find women on the bank's board. This is also the case when the *Equity to Total Asset Ratio* is considered, where a lower leverage is associated with a higher proportion of women. These results are consistent with statistical discrimination in the sense proposed by Schubert et al. (1999). If women are expected to be more conservative investors than men, they will be consequently excluded from those positions that are more related to risks. An alternative interpretation of this variable is that of self-selection, according to which if women were really more risk-averse than men (Jianakoplos and Bernasek, 1998; Sundén and Surette, 1998) they would prefer to work for safer banks.

Concerning controlling financial variables, there are no statistically significant differences in the proportion of women on the board related to the ROAA, although a performance measure like a risk-adjusted ROAA, such as ROAA/std dev. of ROAA, would be significant and positively related to a higher number of women on the board. With respect to cost efficiency, it seems that banks with a higher proportion of women in the boardroom are the ones with a higher *Cost to Income* ratio. This result is in line with that of Hasan and Hunter (1996), who found that minority and women-owned banks in the US were less efficient. Nevertheless, this result must be cautiously interpreted, since although the underlying doctrine in the

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<sup>10</sup> *Tokenism* in this context would imply that a female director is added to the board, not for her professional quality but just as a symbol because of her gender, since in this way the board is sending a message that it respects equality targets.



literature argues that the lower the overheads are, the more efficient and profitable a financial institution is (Staikouras et al., 2007), Molyneux and Thornton (1992) observed a positive relationship between operating expenses to total assets (OEA) and profitability, meaning that high profits earned by firms may be appropriated in the form of higher payroll expenditures. Besides, this ratio not only reflects efficiency but it can also be influenced by the lending margins of the bank. In this sense, if the lending margins are very high, then the ratio will improve as a result, not implying improvement in efficiency.

[Table 5]

## **7. Conclusions**

Diversity on boards of directors is a key issue of corporate governance in the banking sector, where a correct monitoring of the CEO and executive directors has major relevance to obtaining a sound and stable financial system, and to avoiding turbulence that can be passed to the real economy. In this sense, there is empirical evidence that highlights the benefits of diversity for corporate governance in terms of both efficiency and better monitoring. As women directors add to the diversity of the boards their inclusion can improve their corporate governance. Nevertheless, we have found that women account for just 7% of the board members of European banks.

We have found in this paper that women are less likely to appear on those boards of directors where there is some evidence that monitoring plays a minor role, that is, small boards, where the preference for homogeneity is stronger. In this sense, those homogeneous boards that are male-dominated seem to be holding back the access of women to top positions in banks.

Additionally, those banks with lower risk and less leverage (measured by the standard deviation of ROAA and the Equity on Total Assets Ratio, respectively) are the ones where the proportion of women is higher. A possible reason behind this outcome could be due to the perception that female managers are less risk-prone than men so they are less trusted to make the risky decisions that may be necessary for a bank's success. This implies evidence of statistical discrimination according to which women would be excluded from those positions that are more related to higher levels of risk.

It has also been shown that those banks that have greater growth rates of total assets have more women on their boards. Therefore, it seems that those banks that are involved in a growth strategy have more incentives not to discriminate since it has a higher cost for them and that leaves less room for growth. This result seems

to be consistent with *Becker's theory* in the sense that income needs coming from growth strategies seem to urge banks to put this consideration before other discriminatory bias.

Finally, we have also found that there are cultural differences that explain part of the heterogeneity in the presence of women on the boards, since we find significant differences among European countries. Convergence towards the highest standards of women's presence in banks' boardrooms would require further policy action in the EU.

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**Table 1: Descriptive statistics: Women's presence on EU25 banks' boards of directors**

	N (sample)	Minimum	Maximum	Sum	Average	Stand. Dev.
Total Number of Board Seats	612	1	69	7,868	12.86	8.422
Number of Men Board Directors	612	1	65	7,313	11.95	8.019
Number of Women Board Directors	612	0	10	555	0.91	1.258

**Table 2: Number of women board directors on EU25 banks**

Number of women	Frequency	Percentage	Accumulated percent.
Valid 0	300	49.0	49.0
1	183	29.9	78.9
2	64	10.5	89.4
3	40	6.5	95.9
4	13	2.1	98.0
5	7	1.1	99.2
6	3	0.5	99.7
9	1	0.2	99.8
10	1	0.2	100.0
Total	612	100.0	

**Table 3: Summary statistics of EU25 banks with at least one woman on the board and banks with only men on the board**

	N	Min.	Max.	Mean	Median	St. Dv.	Mean Banks with Women	Mean Banks without Women	t-Statistic
Total Number of Board Seats (Board Size)	612	1	69	12.86	11	8.42	15.15	10.47	51.113***
Total Assets th. USD 1998-2004 (Log)	601	7.72	20.60	14.70	14.51	2.14	14.98	14.41	10.783***
ROAA % 1998-2004	599	-14.45	25.40	0.81	0.55	1.92	0.77	0.85	0.295
Cost to Income % 1998-2004	591	2.13	533.33	65.95	64.33	34.45	65.50	66.41	0.103
Equity on Total Assets % 1998-2004 (Log)	597	-2.09	4.55	1.95	1.86	0.80	1.94	1.96	0.107
Growth Rate Total Assets th USD 1998-2004	562	-0.67	630.61	1.36	0.14	26.60	0.29	2.44	0.917
Standard Deviation ROAA % 1998-2004 (Log)	558	-4.95	3.19	-1.30	-1.31	1.28	-1.44	-1.17	6.115**

**Table 4: Poisson regression on the number of women on EU25 banks' boards of directors**

Independent Variable	Poisson Models				
	Model I (All Variables)			Model II (Sign. Variables)	
	Coefficient	Z		Coefficient	z
Board Size	0.0353	2.37 **		0.0340	2.44 **
Board Size (Squared)	-0.0006	-2.25 **		-0.0005	2.26 **
Real Estate/Mortgage Bank	0.2061	1.42			
Bank Holding	-0.0925	-0.39			
Medium and Long-Term Credit					
Bank	0.1058	0.42			
Listed	0.0686	0.51			
Growth Rate Total Assets th. USD	0.3636	2.72 ***		0.3023	2.55 **
Standard Deviation ROAA % (Log)	-0.1350	-2.56 **		-0.1420	3.00 ***
ROAA %	0.0264	0.80			
Cost to Income %	0.0047	2.28 **		0.0043	2.30 **
Total Assets th USD (Log)	0.0063	0.20			
Equity on Total Assets % (Log)	0.1997	2.17 **		0.1996	2.52 **
Austria	-0.2282	-0.88			
Belgium	-0.6905	-2.11 **		-0.6543	2.20 **
Cyprus	0.2726	0.27			
Czech Republic	0.6977	2.09 **		0.7209	2.31 **
Denmark	0.2940	1.20		0.3714	1.82 *
Finland	0.5258	1.00			
France	0.0313	0.17			
Sweden	0.7768	3.72 ***		0.8543	4.81 ***
Greece	-0.2033	-0.49			
Hungary	0.6071	2.15 **		0.6724	2.62 ***
Ireland	0.7647	3.19 ***		0.8819	4.15 ***
Italy	-1.3401	-5.34 ***		-1.2974	5.84 ***
Luxemburg	-0.2117	-0.94			
Netherlands	-0.2169	-0.49			
Poland	0.5268	2.23 **		0.5866	2.87 ***
Portugal	-1.2884	-2.15 **		-1.2352	2.11 **
Slovenia	0.4635	0.86			
Spain	-0.2007	-0.62			
United kingdom	0.2104	1.17		0.3408	2.36 **
Cons	-4.1171			-3.9776	
Number of Obs.	543			543	
Log Pseudolikelihood	-595.687			-599.921	
Pseudo R2	0.1233			0.117	
LR Test	167.53 ***			159.07 ***	
Wald Chi2	171.17 ***			152.75 ***	

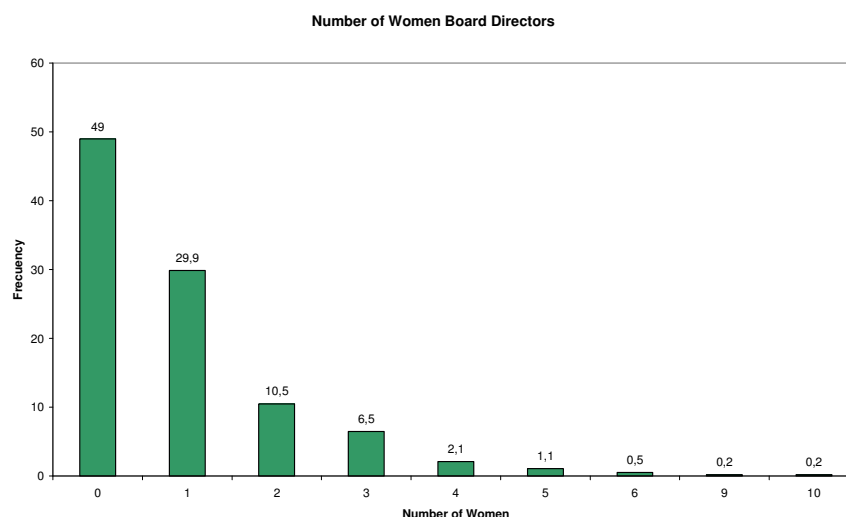


**Table 5: Sensitivity analysis from Model II on the base case for different values of the financial variables**

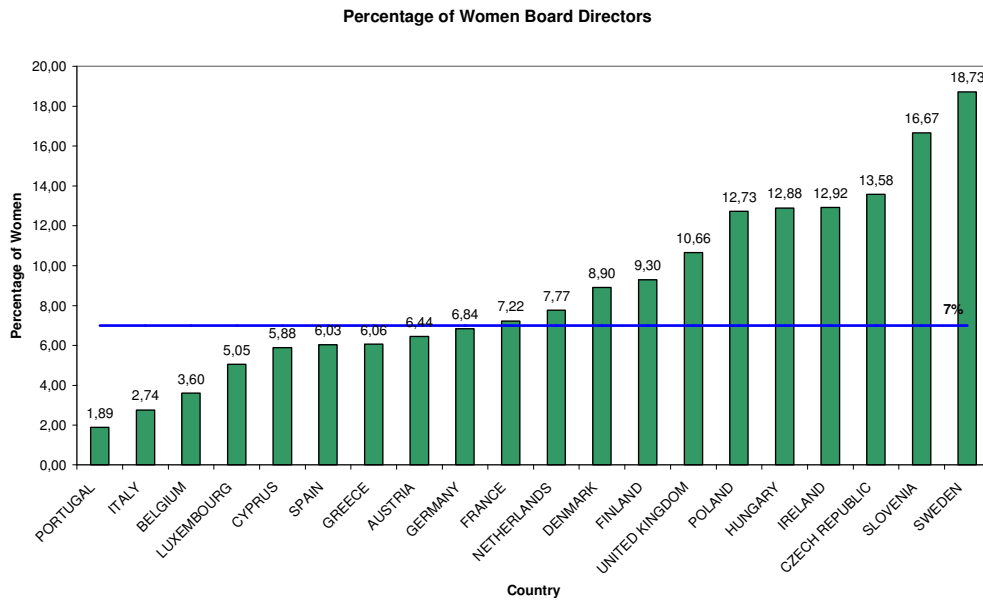
	Proportion	P(X=0)	P(X=1)	P(X=2)	P(X=>3)	Expected Number of Women
<b>Growth Rate Total Assets</b>						
1.4%	5.9%	52.2%	33.9%	11.0%	2.8%	0.65
8.3%	6.0%	51.5%	34.2%	11.3%	3.0%	0.66
13.7%	6.1%	51.0%	34.4%	11.6%	3.1%	0.67
23.6%	6.3%	49.9%	34.7%	12.0%	3.3%	0.69
43.1%	6.7%	47.9%	35.3%	13.0%	3.9%	0.74
<b>Standard Deviation ROAA (Log)</b>						
5.8%	7.6%	43.3%	36.2%	15.2%	5.3%	0.84
11.5%	6.9%	46.8%	35.5%	13.5%	4.2%	0.76
26.9%	6.1%	51.0%	34.4%	11.6%	3.1%	0.67
55.3%	5.5%	54.4%	33.1%	10.1%	2.4%	0.61
128.7%	4.9%	58.3%	31.5%	8.5%	1.8%	0.54
<b>Cost to Income</b>						
35.40%	5.4%	55.1%	32.8%	9.8%	2.3%	0.60
51.87%	5.8%	52.8%	33.7%	10.8%	2.7%	0.64
64.26%	6.1%	51.0%	34.4%	11.6%	3.1%	0.67
75.17%	6.4%	49.3%	34.9%	12.3%	3.5%	0.71
89.46%	6.8%	47.2%	35.4%	13.3%	4.1%	0.75
<b>Equity on Total Assets % (Log)</b>						
3.0%	5.3%	56.0%	32.5%	9.4%	2.1%	0.58
4.4%	5.3%	55.6%	32.6%	9.6%	2.2%	0.59
6.3%	6.3%	50.2%	34.6%	11.9%	3.3%	0.69
10.6%	7.3%	44.6%	36.0%	14.5%	4.9%	0.81
17.3%	8.6%	38.8%	36.7%	17.4%	7.1%	0.95

The expected number of women, as well as the proportion of women and the probability of finding 0, 1, 2, 3 or more women on a board.

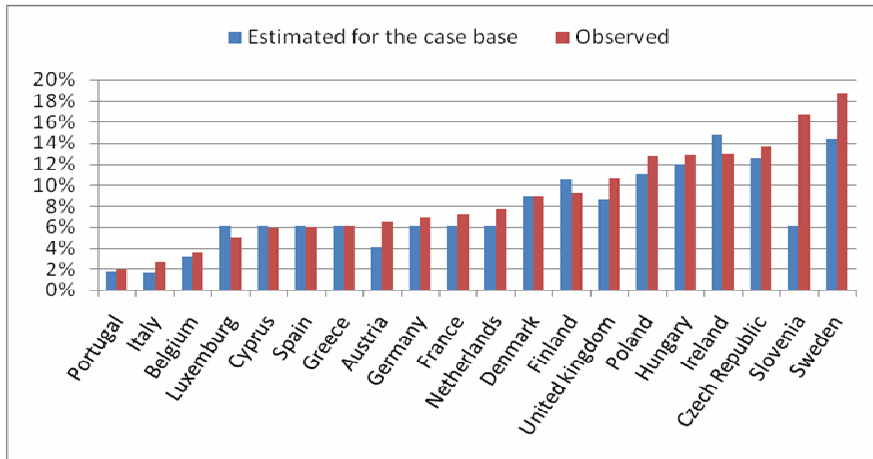
**Figure 1: Percentage of women board directors on EU25 banks**



**Figure 2: Percentage of Women board directors on EU25 banks by country**



**Figure 3: Expected proportion of female directors for different countries of origin estimated for Model II on the base case**



**Figure 4: Expected proportion of female directors for different board sizes estimated for Model II on the base case**

