



# ¿DOES GENDER CONTRIBUTE TO FINANCIAL PERFORMANCE?: A STUDY ON BOARDS OF DIRECTORS OF CO-OPERATIVE BANKS

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# Introduction

- This paper examines whether or not **an increase in feminine presence on corporate boards leads to an improvement in corporate performance**, from a direct and indirect perspective and if the financial crisis has conditioned this topic.
- **Sectorial analysis:** Banking sector of the social economy -credit unions/co-operative banks-.
  - Not listed on the stock exchange.
  - Homogeneous model of business, territorial nature and retail banking.
  - Not regulated by mandatory gender quotas on their boards.
  - Characterised by corporate principles (ICA) and peculiarities that can help women to achieve their goals and their promotion on the corporate ladder (Mateos et al., 2009)
- **Methodology:**
  - Generalised Method of Moments (GMM)
  - Estimation of a dynamic linear equation
  - 78 institutions.
  - Period: 2000-2014.
- **Results:**
  - The economic crisis has conditioned both the direct and the indirect impact of the analyzed variables of gender in the profitability.
  - When analyzing the direct effect of women on economic profitability (RoA), we obtain that the relationship between both is null or negative depending on the existing economic cycle, while the impact is positive and negative as a function of the indirect channel used.

# Introduction

- **European Commission (2016):** women on the boards (WOB) of the main European listed companies (21.2%); Iceland (44%); Norway (36%); Estonia and Cyprus (8%); Malta (3%).
- **Spencer Stuart Index (2015):** Nordic countries (30%); Belgium (24%); United Kingdom (23%); The Netherlands (22%); Spain (analysing 95 listed companies reaches 14%, taking into account that was only 4% in 2003).
- The representation of women on corporate boards continues to be much less than their corresponding representation on the labour market. This may have two kinds of main **explanations:**
  - on the **supply side**, effects deriving from possible consideration in the decisions taken by women in terms of their choice of activity and the result of the professional career, consequent on which there is a limited number of women who have the requisites to join corporate boards (Bygren and Gähler, 2012; Gregory-Smith et al., 2014).
  - on the **demand side**, can exist discriminatory barriers in companies that hinder the progress of women on the corporate “ladder” (glass ceiling). (Morrison et al., 1987; Powell and Butterfield, 1994).

# Introduction

- This article does **not aim to analyse said causes or to study the possible barriers that exist at the present time for the promotion of women to management positions** since these have been dealt with in numerous studies that analyse said question.
- Rather, we wish **to specify to what extent the diversity of gender and feminine presence on corporate boards affects the management results and corporate performance**, both from a direct and indirect perspective across several channels; and it will be analyzed if this effect has been or not conditioned to the economic cycle.
- In **Spain** the Act 3/2007 of 22nd March 2007 governing effective equality between men and women, endeavoured to reach 40% quota by 2015 by means of incentives to firms that comply with said law.

# Diversity & Corporate Performance: Is there any relationship?

- Numerous studies that in an endeavour to empirically contrast whether the more diversity there is in a company the more corporate performance or firm value increases, contradictory results were obtained:
  - Positive evidence (Mahadeo et al., 2012; Low et al., 2015)
  - Negative (Darmadi, 2011; Ahern and Dittmar, 2012; Adams, 2015)
  - Even zero evidence (Bonn et al., 2004; Miller and Triana, 2009).
- Therefore there is not a clear relationship, especially in respect of banking institutions (García-Meca et al., 2015).
- Vast majority of investigations have been done on listed companies or on small samples of large companies (Carter et al., 2003; Farrell and Hersch, 2005; Mateos et al., 2010; Reguera-Alvarado et al., 2015), consequent on the current requirement of having certain quotas of feminine presence in listed companies and large companies, both by virtue of regulation.
- Basel Committee on Banking Supervision (2010) enhances the corporate governance of banking institutions to guarantee the clean-up of the financial system.

# Aim of the Study and Methodology Proposal

- This study aims to contribute to the academic literature, providing new evidence on the relationship existing between gender diversity and weighting and the company's economic performance.
- This is, to our knowledge, the first investigation of gender undertaken in this field that considers such a large time period (2000-2014), during which there has been an expansive economic cycle followed by a recessive cycle, which has brought about a deep transformation of the **banking sector**.
- To meet the objectives a **dynamic linear equation** will be estimated:
  - Panel of 78 institutions through the GMM (Blundell and Bond, 1998).
  - Dependent variable: Return on Assets (RoA) -dividing the firm's net profit by its total assets-.
  - Explanatory factors:
    - Gender: proportion of women board members and Blau Index.
    - Indicators of the economic-financial structure and performance: efficiency, leveraging, financial gap, solvency (through assets and loans).
    - Dummy variables: 0 (until 2007) and 1 (from 2008 to 2014) to identify the structural effect of the financial crisis.

# Aim of the Study and Methodology Proposal

## Women on board and management of Spanish co-operative banks (2000-2013)

YEAR	Women on Board (%)	Women (CEOs and Directors) %	Coop-banks with women on board (%)	Coop-banks with women as CEOs and Directors (%)
2000	2,58%	4,57%	25,64%	20,51%
2001	3,06%	3,72%	29,11%	17,72%
2002	4,21%	4,82%	34,18%	18,99%
2003	5,19%	8,12%	36,71%	29,11%
2004	4,51%	8,47%	39,24%	34,18%
2005	5,72%	9,21%	41,77%	34,18%
2006	8,50%	9,42%	41,77%	36,71%
2007	6,99%	10,50%	43,04%	40,51%
2008	9,30%	10,21%	53,16%	43,04%
2009	9,62%	11,99%	55,70%	50,63%
2010	9,33%	n.d.	59,38%	n.d.
2011	10,60%	n.d.	60,94%	n.d.
2012	11,72%	n.d.	57,81%	n.d.
2013	10,99%	n.d.	59,38%	n.d.
Absolute and Relative Variation	<b>8,41%</b>	<b>7,42%</b>	<b>30,77%</b>	<b>30,12%</b>
	<b>326%</b>	<b>(until 2009) 162%</b>	<b>131%</b>	<b>(until 2009) 146%</b>

Source: Compiled from UNACC Yearbooks from 2000 to 2013. Since 2010 not available statistical data on the percentage of women managers.

# Theoretical Framework and Investigation Hypotheses

## WOMEN ON BOARD OF COMPANIES (“PROS”)

- Greater benefits for employees, by giving greater importance to issues related to corporate **social responsibility** or strategic control (Rand and Tarp, 2011).
- Better **image** of the company towards customers (Smith et al., 2006)
- Greater **wealth of perspectives and behaviors** (Hillman et al., 2007)
- Greater **transparency** (Upadhyay & Zeng, 2014).
- Women tend to be more **cautious** (Huang et al, 2013.)
- Women tend to be more **risk averse** (Collerette and Aubry, 1990; Olsen and Cox, 2001) achieving lower costs management (Chakrabarty and Bass, 2014) and higher financial performance (Ström et al., 2014).

## WOMEN ON BOARD OF COMPANIES (“CONS”)

- Some women tend to excessive **monitoring** and possible lack of **entrepreneurship** (Hillman et al., 2002)
- Lower capacities for sales and financial operations (Zelechowski and Bilimoria, 2004).
- Lack of contacts/networking (Medland, 2004)



# Theoretical Framework and Investigation Hypotheses

<p>Carter &amp; Shaw (2006) Hernandez-Nicolas et al. (2015)</p>	<p>Find positive relationship between the presence of women at boards and a <u>lower level of indebtedness</u>.</p>
<p>Berenguer et al. (2004)</p>	<p>In companies where gender balance have potential to improve the financial situation, a greater presence of women in managerial positions can contribute to a <u>working environment more productive and innovative</u>, thus <u>improving the profitability of the company as a whole</u>.</p>
<p>Fregidou-Malama (2004)</p>	<p>A higher weighting of the female gender in the representative bodies of the companies <u>can help in the deliberations</u> of these bodies.</p>
<p>Campbell and Minguéz-Vera (2008), Farrell and Hersch (2005) Catalyst (2010)</p>	<p>The presence of a higher percentage of women on boards <u>increases the value of the company</u></p>
<p>Adler (2001) Erhardt et al (2003); Carter et al. (2003); Veleva (2005); Krishnan and Park (2005); Campell and Minguéz-Vera (2008) Hutchinson et al (2014).</p>	<p>Find a <u>positive</u> influence of gender diversity and performance of a company</p>
<p>Jehn and Bezrukova (2004) Ryan and Haslam (2005, 2007) Bohren &amp; Ström (2007)</p>	<p>Find a <u>negative</u> relationship between gender diversity and performance</p>
<p>Shrader et al. (1997); Du Rietz and Hanrekson (2000); Kochan et al.(2003) Smith et al. (2006); Rose (2007)</p>	<p><u>No relationship</u> between gender diversity and performance</p>
<p>Terjesen et al. (2009)</p>	<p>Reviewing more than 400 publications did <u>not obtain conclusive results</u> because gender diversity on the boards can positively or negatively affect the performance of companies according to different authors.</p>
<p>Phatan and Faff (2013)</p>	<p>No clear conclusions are due to <u>homogeneity</u> problems, as well as the use of samples of companies, sectors and different time periods; and also added that in times of crisis the effect of diversity is reduced</p>

# Theoretical Framework and Investigation Hypotheses

<p><b>IN BANKING SECTOR AND IN COOPS BANKS SECTOR</b></p>	<p><b>Academic research has also failed to demonstrate the existence of a clear link between gender diversity on boards and business performance</b></p>
<p>García-Meca et al. (2015)</p>	<p>Positive relationship between the variables; however, they justify that in contexts of poor regulation and weak investor protection, gender diversity on boards has less influence on the performance of <u>banks</u></p>
<p>Mateos et al (2006, 2010) Esteban et al (2010)</p>	<p><u>Cooperative organizations</u> are precisely those with a greater number of women on their governing bodies.</p> <p>This is justified by the greater ease of access as a result of the principle of free adhesion governing such entities, according to which there shall not be any discrimination based on gender, race, social class, position political or religious.</p>
<p>Mateos et al.(2009)</p>	<p>Greater <u>involvement</u> of women in the management of cooperatives</p>
<p>Fernández (2000) Freguidou (2004) Elio (2006) Esteban (2012) and Gómez (1998)</p>	<p><u>Scarcity of research</u> analysing the participation of women in social economy organizations</p>

## Theoretical Framework and Investigation Hypotheses

H1. Both the proportion of women and the gender diversity of Board are an important condition of the evolution of the economic profitability (RoA) of the Spanish coop-banks, either directly or indirectly through other variables.

H2. The impact of greater weight of female presence and gender diversity on profitability (RoA), both direct and indirect, has been subject to the financial crisis.

# Data, Empirical Analysis and Methodology

## DATA:

- Time period analyzed: 2000-2014.
- All the 78 credit unions / co-operative banks existing in Spain.
- Given that some of them are the result of **mergers in the time period**, regressive procedure has taken into account the aggregate resulting from the merged entities within the meaning of corresponding year, although the above involves the occasional creation of fictitious entities.
- Data have been deflated to work properly homogeneous series using two deflators (INE):

## Data, Empirical Analysis and Methodology

- Estimation of the **dynamic linear equation** through the use of panel data:

$$RoA_{it} = \beta_1 + \beta_2 Roa_{i,t-1} + \beta_3 RoA_{i,t-2} + \beta_3 X_{it} + \eta_{it} + \varepsilon_{it}$$

$RoA_{it}$  : economic performance indicator of the firm “i” over the period “t”.

$RoA_{i,t-1}$  and  $RoA_{i,t-2}$  : variable delayed by one and two periods, respectively.

$X_{it}$  : vector of the rest of the explanatory variables of the firm “i” over the period “t”.

$\eta_{it}$  is the non-observable individual effect.

$\varepsilon_{it}$  is the random error term.

- The individual effect of each explanatory gender variable on the variable of interest will be analysed taken into account if they are conditioned to the economic crisis, which will enable us to measure the robustness of the results obtained by using several measurements.
- Once we see the direct impact, the next step will be to evaluate whether two possible channels of indirect action of female representation and gender diversity on the RoA will materialize through the efficiency and the leveraging of the institutions analysed.

## Results and Analysis

- Low value of the arithmetic mean of the Blau index (0.12): boards are little diversified.
- RoA: average value achieved comes to 0.6%, maximum 3.24%
- On average, the sample comprises institutions 52 years old, 122 years the oldest.

## Results and Analysis (descriptive statistics)

<b>Variable</b>	<b>number</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Min</b>	<b>Max</b>
RoA	960	0,0060798	0,0068701	-0,086304	0,032394
Muj_cons	960	0,0772671	0,1014961	0	0,5
Blau	960	0,1220124	0,1477988	0	0,5
Eficiencia	960	0,6665299	0,7351526	0,207272	15,907
RoE	960	0,0737862	0,2604183	-1,209962	7,695464
Apalancamiento	960	0,0677065	0,2616014	-1,141423	7,781768
Brecha	960	0,8133633	0,387339	0,0590031	9,572314
Solvencia_atm	960	0,099008	0,0994342	-0,0112149	2,623194
Solvencia_cred	960	0,1782641	0,2875571	-0,014718	5,873595
Ce	960	0,4666667	0,4991477	0	1

Source: own elaboration from Stata 11.

**Table 1. Dependent variable: return on assets (RoA). Two-step System GMM estimation (Blundell y Bond, 1998).**

Independientes	1	2	3	4	Independientes	5	6	7	8
RoA_1	0,1637 L (1 1) **	0,1817 L (1 1) ***	0,2441 L (1 1)***	0,1699 L (1 1) ***	RoA_1	0,1689 L (1 1) ***	0,2368 L (1 1) ***	0,1989 L (1 1) ***	0,2242 L (1 1) ***
<u>Muj_cons</u>	-0,0055 L (2 2)				Apalancamiento	0,0613 L (2 2) ***			
<u>Ce*Muj_cons</u>	-0,0184 L (2 2) **				Ce*Apalancamiento	-0,0690 L (2 2) ***			
<u>Blau</u>		-0,0028 L (2 2)			Brecha		0,0034 L (2 2) **		
<u>Ce*Blau</u>		-0,0110 L (2 2) **			Ce*Brecha		-0,0041 L (2 2) *		
Eficiencia			0,00001 L (2 2) ***		<u>Solvencia_atm</u>			-0,0059 L (2 2) ***	
Ce* Eficiencia			0,0001 L (2 2)		Ce*Solvencia_atm			0,0113 L (2 2) *	
<u>RoE</u>				0,0591 L (2 2) ***	<u>Solvencia_cred</u>				0,0005 L (2 2) *
<u>Ce*RoE</u>				-0,0664 L (2 2) ***	Ce*Solvencia_cred				0,0018 L (2 2)
Obs.	896	896	896	896	Obs.	896	896	896	896
<u>P-Test Wald</u>	0,0000	0,0000	0,0000	0,0000	<u>P-Test F/Wald</u>	0,0000	0,0000	0,0000	0,0000
<u>P-Sargan</u>	0,2164	0,1972	0,1615	0,1748	<u>P-Sargan</u>	0,1807	0,1449	0,1490	0,1688
<u>Inst/Ind</u>	57/64	57/64	57/64	57/64	<u>Inst/Ind</u>	57/64	57/64	57/64	57/64
<u>AR(2)</u>	0,3917	0,5083	0,4840	0,8408	<u>AR(2)</u>	0,8163	0,5026	0,9261	0,6568

Source: Compiled by the authors using outputs from Stata 11. \*\*\*Significant at 1%, \*\*Significant at 5%, \*Significant at 10%. Observations: 832 (equations 1-10) and 813 (equations 11-14). L: lag range. P-F: P-values associated with the F test. P-Hansen: P-values associated with the Hansen test. AR(2): p-values associated with the second-order serial correlation test, AR(3): p-values associated with the third-order serial correlation test (Arellano y Bond, 1991). The results are based on Windmeijer-corrected standard errors



**Table 2. Dependent variable: return on assets (RoA). Two-step System GMM estimation (Blundell y Bond, 1998).**

Independientes	1	2	3	4	5	6
RoA_1	0.1775 L (1 1) **	0.1715 L (1 1) ***	0.1730 L (1 1) ***	0.1435 L (1 1) ***	0.1679 L (1 1)**	0.1948L (1 1)**
Muj_cons*Eficiencia	0.0019 L (2 2)					
Ce*Muj_cons*Eficiencia	-0.0020 L (2 2)					
Muj_cons*RoE		0.0683 L (2 2)***				
Ce*Muj_cons*RoE		-0.0754 L (2 2)				
Muj_cons*Apalancamiento			0.0720 L (2 2)***			
Ce*Muj_cons* Apalancamiento			-0.0893 L (2 2)			
Muj_cons*Brecha				-0.0069 L (2 2)		
Ce*Muj_cons*Brecha				-0.0251 L (2 2)**		
Muj_cons* Solvencia_atm					-0.0169 L (2 2)*	
Ce*Muj_cons* Solvencia_atm					-0.0130 L (2 2)	
Muj_cons* Solvencia_cred						-0.0047 L (2 2)
Ce*Muj_cons* Solvencia_cred						-0.0198 L (2 2)
Obs.	896	896	896	896	896	896
P-Test F/Wald	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
P-Sargan	0.1474	0.1592	0.1597	0.2507	0.1727	0.1649
Inst/Ind	57/64	57/64	57/64	57/64	57/64	57/64
AR(2)	0.7122	0.8570	0.9324	0.1914	0.9768	0.8466

Source: Compiled by the authors using outputs from Stata 11. \*\*\*Significant at 1%, \*\*Significant at 5%, \*Significant at 10%. Observations: 832 (equations 1-10) and 813 (equations 11-14). L: lag range. P-F: P-values associated with the F test. P-Hansen: P-values associated with the Hansen test. AR(2): p-values associated with the second-order serial correlation test, AR(3): p-values associated with the third-order serial correlation test (Arellano y Bond, 1991). The results are based on Windmeijer-corrected standard errors

**Table 3. Dependent variable: return on assets (RoA). Two-step System GMM estimation (Blundell y Bond, 1998).**

Independientes	7	8	9	10	11	12
RoA_1	0 .1923_L (1 1) ***	0 .1747_L (1 1) ***	0 .1749_L (1 1) ***	0 .1758_L (1 1)**	0 .1827_L (1 1)***	0 .2080_L (1 1)***
Blau*Eficiencia	0.0021_L (2 2)					
Ce*Blau*Eficiencia	-0.0009_L (2 2)					
Blau*RoE		0 .0482_L (2 2)***				
Ce*Blau*RoE		-0.0713_L (2 2)*				
Blau*Apalancamiento			0 .0515_L (2 2)***			
Ce*Blau* Apalancamiento			-0.0788_L (2 2)**			
Blau*Brecha				-0.0034_L (2 2)		
Ce*Blau*Brecha				-0.0147_L (2 2)**		
Blau* Solvencia_atm					-0.0101_L (2 2)*	
Ce*Blau* Solvencia_atm					0 .0120_L (2 2)	
Blau* Solvencia_cred						-0.0024_L (2 2)
Ce*Blau* Solvencia_cred						-0.0057_L (2 2)
Obs.	896	896	896	896	896	896
P-Test F/Wald	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
P-Sargan	0.1517	0.1616	0.1611	0.2637	0.1917	0.1605
Inst/Ind	57/64	57/64	57/64	57/64	57/64	57/64
AR(2)	0.8802	0.9051	0.8523	0.2558	0.8138	0.8118

Source: Compiled by the authors using outputs from Stata 11. \*\*\*Significant at 1%, \*\*Significant at 5%, \*Significant at 10%. Observations: 832 (equations 1-10) and 813 (equations 11-14). L: lag range. P-F: P-values associated with the F test. P-Hansen: P-values associated with the Hansen test. AR(2): p-values associated with the second-order serial correlation test, AR(3): p-values associated with the third-order serial correlation test (Arellano y Bond, 1991). The results are based on Windmeijer-corrected standard errors

## Results and Analysis

- The impact of most of the variables on the RoA has changed negatively since 2008.
- Since 2008, a greater proportion of female counselors has resulted in a decrease in the economic profitability of the entities analyzed. For each percentage point that increased the proportion of women in the Council, economic profitability has been reduced by 2.39% between 2008 and 2014, remaining the remaining variables constant.

The results confirm that the existence of a greater proportion of women at the head of these entities contributed positively to improving their economic profitability through the increase of financial and leverage before 2008, while, since then, has a negative effect.

The greater gender diversity reduces the positive impact of financial profitability on the economy in the years prior to 2008, as well as increasing the positive impact from this onwards.

## Conclusions

- This study has endeavoured to cover a gap in the literature that investigates the effect of gender on corporate performance, such as the study of a **sector of unlisted banks that are not subject to gender regulation, comprising the so-called Social Economy and practically unknown in gender studies.**
- A **panel of 78 Spanish credit unions over the 2000-2014** period was compiled, estimating a dynamic linear equation through MGM.
- The results obtained corroborate, for the two measures of gender used, that the direct effect in the RoA of a greater and more equitable feminine presence in the Councils was null in the expansive years, beginning to have a negative repercussion since the eruption of the crisis.
- However, by observing the indirect effect through other variables, the results confirm that, in times of economic boom, the increase in the proportion of women directors helps to increase both RoE and leverage by translating into greater RoA.

## Conclusions

- An indirect positive effect also occurs in the years of crisis, since a greater ratio of female counselors attenuates the negative consequences that RoA shows in a greater RoE and a more leveraged position.
- However, the indirect role of gender also shows negative consequences for RoA since both the increase in the number of female counselors and the improvement of gender diversity mean that the widening financial gap and solvency are translated into lesser RoA, regardless of economic cycle.
- It seems clear the existence of a relationship between the weighting of women in the Council and the gender diversity in them and the RoA in Spanish credit unions, although the direction varies according to whether it is of a direct or indirect effect, generally subordinated to the phase of the existing economic period, giving the second evidence both positive and negative.
- The role of women has influenced positively through some measures and negatively through others. So the net result of both influences in RoA will depend on the importance of each effect.

## Conclusions

- **Spanish credit unions have an even wider gap in terms of female representation on their boards than the listed companies**, both of Spain and Europe, which may be explained by the non-existing regulation on mandatory gender quotas on their boards.
- An essentially qualitative matter that could be added from another perspective in future studies, is to examine the capacity of influence and drag effect on the decisions that each director might have on the other board members when it comes to influencing the debates and adoption of board resolutions.
- *Then an analysis of the leadership of female directors could be approached as opposed to the numerical quantitative analysis discussed hereunder.*