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## ***Women on Boards in Banks Listed on Polish Stock Exchange***

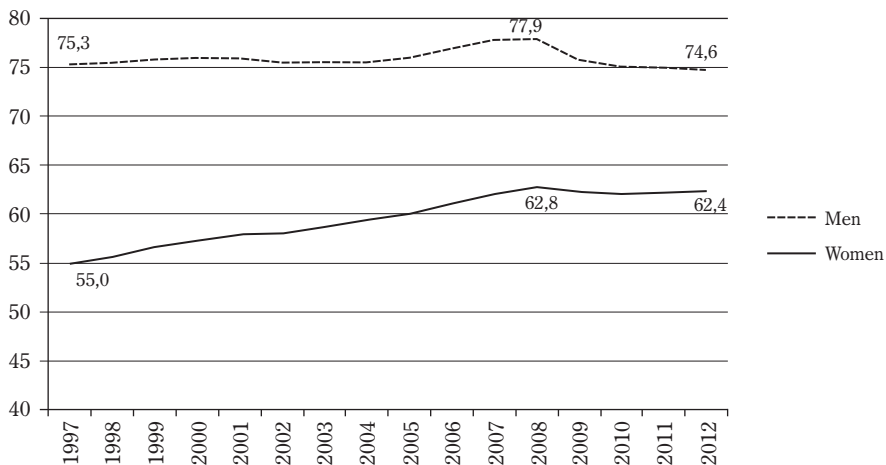
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## 1. Introduction

The gender gap in employment is levelling-down. Before the financial crisis in 2007, women were slowly catching up with men on the labor markets of all European countries: their employment rate increased from 55% in 1997 to 62.8% in 2007 while the male employment rate increased less: from 75.3% to 77.9%. After the crisis, both employment rates decreased. Male employment felt earlier and faster (as shown in Figure 1): dropped to 74.6% in 2012, while female employment went down only slightly to 62.4%.

Figure 1. Labour market diversity in all European countries



Source: Eurostat, Labour Force Survey (LFS).

The proportion of women on supervisory boards in Poland has risen from over 9% in 2004 to 12% in October 2012. This represents an average increase of 0.3 percentage points per year. At this rate of change, it would take almost 85 years to achieve balanced supervisory boards with at least 40% of each gender (European Commission's Database, 2013).

Because of change in the proportion of women on a labor market, the role of women on supervisory board positions is getting increased attention (Terjesen, Sealy and Singh, 2008). However, the absence of women at board level leads to different results, with some women determined to be the first female director, and others feeling that their gender is an inevitable barrier to the supervisory board (Singh, 2008).

The presence of women on the supervisory and management board in companies is very up to date topic and it falls within worldwide waged debate. In

Poland, this debate raises also a lot of emotions and interest. Moreover, not much research has been undertaken on this subject. The presence of women on boards in the banks listed on the Polish stock market has not yet been analyzed. I found the gap. I think, verifying whether women on bank board have got any influence on bank performance is very interesting topic.

The article is organized as follows: in the first section I review the literature on women on boards in three key areas: woman's way of management, woman's influence on company strategy, woman's influence on company financial performance. The second section shows four hypotheses. Section three presents data and empirical methodology. Section four provides empirical results. Section five summarizes all results.

## **2. Literature Review**

Literature suggests three main fields in which we can show the role of women on the board:

- I. Woman's way of management;
- II. Woman's influence on company strategy;
- III. Woman's influence on company financial performance.

No single theory directly predicts the nature of the relationship between women on board and performance but several theories from various fields provide insight into the issue (Terjesen et al., 2009). This section shows results of the previous research in this field and provides new outcomes, which may have important implications for corporate (especially bank) supervisory and management boards.

### **2.1. Woman's way of management**

Management is always about the people first, then is about planning, organizing, leading or directing, and controlling. Peter Drucker (1988) wrote that an organization's success depends on the people, how they can contribute.

Research on gender differences shows that there are no general differences in effectiveness between women and men but there are some gender-related differences in behavior (Yukl, 2002). Such differences in management styles may have an important hint for board performance.

Gender stereotypes, which means simplistic generalizations about the gender attributes, differences, and roles of individuals and/or groups, caused that women may be perceived as being a more risky investment than a man on board. It results from the roles that are defined masculinity or femininity and leading

is perceived as a male role. The bias against women is exacerbated in situations where women are perceived as violating gender-role expectations (Fiske and Taylor, 1991; Powell and Butterfield, 2002).

Some characteristics ascribe more to men than women, e.g. assertiveness, ambition, aggression, independence, self-confidence, bravery and competitiveness. Moreover, in the work environment, men speak assertively, compete for attention, influence others and make problem-focused suggestions. Characteristics, which are more strongly ascribed to women than men, describe primarily a concern with the welfare of other people and being affectionate, helpful, kind, sympathetic, interpersonally sensitive, nurturing and gentle. In the work environment, women might speak tentatively, not draw attention to one, accept others' positions, support and comfort others, and contribute to the solution of relational and interpersonal problems (Eagly and Johannesen-Schmidt, 2001). Furthermore, Eagly and Johnson (1990) found that men tend to be less democratic and participative and more directive compared to female leaders. Research has also showed that female leaders, compared with male leaders, are less hierarchical, more cooperative and collaborative, and more oriented towards enhancing the others' self-worth (Eagly et al., 2003). Moreover, research suggests that women leaders invest more time and energy in human capital accumulation compared to the men (Ward et al., 1992) and they are viewed as superior interpersonal managers and more capable of taking the blame for failure (Ryan et al., 2011). Women have also been considered as more dependent on others and that others depend on them, while "responsibility for a man is taking the blame, or the glory, as an individual; for a female, it is caring and providing for others" (Howden, 1994). Studies show that women are more likely than men to be community influential (Hillman et al., 2007; Singh et al., 2008). Rosener (1995) believes that female leaders are more flexible and better able to deal with ambiguity than males. These abilities help them create a team.

Moreover, women are presumed to be less competent than men (by both men and women) in a male dominated environment (Carli, 1990). When there are three or more females directors woman become more vocal and active as directors, also more frequently ask questions, meaning that decisions are less likely to be nodded through (Konrad, Kramer and Erkut, 2008).

## **2.2. Woman's influence on company strategy**

Kvint (2009) defines strategy as "a system of finding, formulating and developing a doctrine that will ensure long-term success if followed faithfully". Literature shows how women on a company board influence on company strategy.

Nielsen and Huse (2010) found empirical support for the positive association between the ratio of women directors and board strategic control which suggests that women directors have a significant positive effect on board development activities. In their research board development activities, in turn, were positively and significantly related to board effectiveness in strategic and operational control.

When a woman joins a firm's top management team, the team becomes more diverse (Van Knippenberg, De Dreu and Homan, 2004). This diversity should improve the information processing and decision-making of the team because women may thus have additional insight into important strategic questions, especially those that relate to female consumers, employees, and trading partners (Daily et al., 1999). Moreover, gender diversity should be particularly valuable for tasks requiring creative solutions (Van Knippenberg et al., 2004), such as the process of innovation. It means that female representation in top management should be especially beneficial for firms for which innovation is important to strategy (Ginsberg, 1994).

On another hand, Vandegrift and Brown (2005) found that females are more risk-averse than males and thus they normally adopt fewer strategies that could lead to tournament competition. Based on this study, for companies in which taking risk is the main point of strategy, especially risky investment, having women on the board does not help to improve profits.

It means that when the strategy of the company is innovation, women on board influence is positive, when the strategy is competition or investment then female leaders impact is negative.

### **2.3. Woman's influence on company financial performance**

Financial performance measures show results of a firm's policies and operations in monetary terms. These results are reflected in the firm's return on investment, return on assets, value added or return on equity (Business Dictionary, 2014).

Many researchers have tested a direct relationship between the ratio of women on boards and firm financial performance (Adams and Ferreira, 2004; Carter, Simkins and Simpson, 2003; Erhardt, Werbel and Shrader, 2003; Fields & Keys, 2003; Shrader, Blackburn and Iles, 1997). These studies provide mixed evidence as a direct relationship between various aspects of board composition and this performance is difficult to determine (Dalton, Daily, Ellstrand and Johnson, 1998). The literature review identified both positive and negative relationship between the ratio of women on boards and firm financial performance.

The indirect positive relation between the ratio of women on boards and firm financial performance were indicated in correlation with market orientation. The

results of Davis, et al. (2010) show that female-led firms were significantly more market-oriented than male-led firms. Harris and Wilkinson (2004) found that the extent that market orientation is “socially shaped,” particularly by gender, women’s concern with developing and maintaining customer relationships potentially could have a positive impact on market orientation. A study by Narver, Jacobson and Slater (1993) found that market orientation was directly and significantly related to sales growth, but not to ROI. Study of German business units by Homburg and Pflesser (2000), found a positive link between market performance and financial performance. It suggests that there may be a stronger connection between market orientation and market performance (market share), than financial performance (profitability). Finally, it means that CEO gender will have a significant indirect effect, mediated by market orientation, on the market and financial performance.

Another positive relation was found by Vieito’s (2012). His results show new knowledge about company performance. On average, companies managed by a female CEO perform better than companies managed by males in large, medium, and small sized companies, because, in companies managed by a female CEO, a small difference in the total compensation gap between CEO and company Vice Presidents will produce a higher increase in the company performance.

Moreover, positive correlation between revenues and woman on board was found by a firm Catalyst (1997) of the Fortune 500 firms, where the top 100 companies by revenue are twice as likely to have women on board compared to the bottom 100 companies. Burke (2000) also finds a similar correlation for top Canadian companies.

A negative relationship between gender diversity of the board and gross profits to sales for a sample of Danish firms were found by Smith and Verner (2006). Moreover, Zahra and Stanton (1988) had not found any relationship between the percentage of females plus ethnic minorities on the board and return on assets, profit margin, sales to equity, earnings per share, and dividends among a sample of US firms. 15 years later Erhardt, Werbel and Shrader (2003) discovered a significant positive link between the percentage of females plus ethnic minorities on the board and return on assets and return on equity for a sample of US firms. In 2010 Carter et. al indicated from the fixed effect regression equations a positive and significant link between the numbers of women on board and ROA.

Another negative aspect on women on board is their low willingness to invest. The literature describes males as being more overconfident and less risk-averse than females. Moreover, males are more likely to trade in financial markets than females. It can be seen when they invest in pension plans. There is a tendency for females to invest in pension plans and mutual funds that have a lower percentage

of stock when compared to males, implying that males are less risk-averse than females when making personal financial investments (Bernasek and Shwiff, 2001). It means that female representation in top management is not beneficial for firms for which financial investment is important to strategy

On the other hand, the relationship between the presence of women directors and higher market capitalization in Fortune 500 (Catalyst, 2004) and FTSE 100 firms is significant (Singh, Vinnicombe and Johnson, 2001; Singh and Vinnicombe, 2003). The larger the firm's market capitalization, the greater the likelihood is for multiple women directors. Firms with women directors are more likely to have larger boards (Burke, 2000; Singh et al., 2001). Company Catalyst (2004) also presented a positive relationship between gender diversity on boards and the bottom line as measured by return on investment and total return to shareholders in a sample of 353 Fortune 500 companies, with Return on Investment being 35 per cent and Total Shareholder Return being 34 per cent higher in the group of firms with higher female representation in the top management team.

In the literature, both positive and negative relationship between the ratio of women on boards and firm financial performance can be identified. It means that more studies are needed. Therefore, this topic is suitable for empirical research.

The proportion of women on supervisory boards in Poland has increased by 3% in the period from 2008 to 2013 (European Commission's Database, 2013). This change in the proportion of women on a labor market causes that the role of women on supervisory board positions is getting increased attention (Terjesen, Sealy and Singh, 2008). The aim of this section was to review the most actual and significant studies on women on corporate boards. I have identified what is known about how women influence corporate governance and firm performance.

First of all, it was found that women's style of management is different than men because they are less hierarchical, more cooperative, collaborative and more oriented towards enhancing the others' self-worth (Eagly et al., 2003). Moreover, they invest more time and energy in human capital accumulation compared to the men (Ward et al., 1992) and they are viewed as superior interpersonal managers and more capable of taking the blame for failure (Ryan et al., 2011).

The second field, in which I showed the role of women on board, is their influence on company strategy. The literature shows that when the strategy of the company is innovation, women on board influence positively when the strategy is competition or investment then female leaders' impact is negative.

Third, described aspect was women influence on company financial performance. The results show that female-led firms are significantly more market-oriented than male-led firms (Davis, et al. 2010) what affect positively on a market

and financial performance (Homburg and Pflesser, 2000). On the other hand, the literature describes women as being less overconfident and more risk-averse than men (Bernasek and Shwiff, 2001), which means that if company financial performance based on risky investment, it is better to have more male than female on board.

As it was presented, studies provide mixed evidence concerning the relationship between women of board and company performance (Dalton, Daily, Ellstrand and Johnson, 1998). Research into women on corporate boards is important to form the basis for change, for a more effective gender representation at the decision-making levels of the corporate world.

### 3. Hypotheses

European statistic shows that the gender gap in employment decrease. The proportion of women on supervisory boards in Poland has risen from over 9% in 2004 to 12% in 2012. This represents an average increase of 0.3 percentage points per year (European Commission's Database, 2013). So, it can be expected that the proportion of women on supervisory and management boards in banks in Poland has risen as well. It proposes the following hypothesis:

*H1. In last 5 years ratio of women on the banks management and supervisory boards increased;*

As Burke (2000) in his research shows, company size and board size are positively and significantly correlated with a number of women board members. In addition, industry sector also affected both company and board size. Moreover, he suggests that implications for increasing women's representation on corporate boards and future research suggestions are proposed. Verification of this hypothesis will show if increasing ratio of women on management and supervisory board is noticeable in the Polish banks. Moreover, it will indicate if the value of banks' assets has an influence on this ratio. It proposes the following hypothesis:

*H2. In larger and foreign banks there is a higher probability of the presence of women on management and supervisory board in banks.*

It was found that females are more risk-averse than males and thus they normally adopt fewer strategies that could lead to tournament competition (Vandegrift and Brown, 2005). In my study, I am going to check if it is true also in



the banking sector. If so, what is the impact on the investment policy? It proposes the following hypothesis:

*H3. Women are less willing to take risks; it has an effect on banks investment policy.*

Many researchers have shown that there is a relationship between share of women on management and supervisory board and stability of financial results. I am going to verify if it is true also in banking. It proposes the following hypothesis:

*H4. Banks, with a higher share of women on board, achieve more stable financial results.*

## **4. Data and variables definition**

The data used in this study includes information on financial results and a number of women on management and supervisory boards of 15 banks which are listed on the Warsaw Stock Exchange. These are Alior Bank, Bank Millennium, BGŻ, BNP Paribas Bank Polska, BOŚ SA, BPH, BZ WBK, Getin Holding, Getin Noble Bank, Handlowy, ING Bank Śląski, Mbank, Nordea Bank Polska, PEKAO SA, PKO BP. The period, which was taken into consideration spans from 2008 to 2013. All data were taken from banks' websites, annual reports and the website [www.infinancial.com](http://www.infinancial.com). All models were estimated in econometric programs – Gretl and PC Give.

### **4.1. Bank governance**

Corporate governance is usually defined as a system, by which companies are directed and managed. Moreover, it is a set of relationships between leadership, management and its shareholders and other stakeholders (European Commission, 2011). An important dimension of proper management is conscientiousness of decision process quality. One of the main actors who care of company success is a company board. According to the country in which company prospers, we can indicate two models of corporate governance: board of directors (one- unitary boards) and supervisory board (two-tiered board). The first one- unitary boards, governing body is comprised of a single board (board of directors), can be found in countries as the United States, England, Belgium, Switzerland, Sweden, and Italy. The two-tiered model can be found in countries such as Austria, Germany or Holland. Characteristic for the first system is the presence of executive

directors or/and financial directors who are directly involved into operating activities. Moreover, a member of the board of directors can be a member of the top management board. In the second model, a two-tier board, the managing and monitoring tasks are split among a management board and a supervisory board (Kołodkiewicz, 2013). In banks listed on Polish stock market exists two-tier board model (Kodeks Spółek Handlowych, 2010).

The power to determine the company's overall direction is given to the board of directors. The power to control the company's day-to-day operation is given to the managers. It is generally believed that managers have got at least four main functions: monitoring and controlling, providing information and counsel, monitoring compliance with applicable laws and regulations, and linking the company to the external environment (Mallin, 2004; Monks and Minow, 2004).

The main responsibility of the management board is the running of the business and (Art. 219 & Art. 382 of the Polish Commercial Companies Code, 2010) supervisory board is responsible for all company operations. The activity of the board is not limited only to control management board. An important platform for its activities is also the sphere of cooperation with it.

A variety of these tasks means in practice significant complexity of the challenges board must face (Kołodkiewicz, 2013).

## 4.2. Female representation

A set of variables used to describe female representation in banks consists of:

**WoB** – is a dummy variable which takes the value 0 or 1 to indicate the absence (0) or presence (1) of a woman on the management board.

**WoSB** – is a dummy variable which takes the value 0 or 1 to indicate the absence (0) or presence (1) of a woman on supervisory board.

**WoB&SB** – is a dummy variable which takes the value 0 or 1 to indicate the absence (0) or presence (1) of a woman on management or supervisory board.

**SoWMB** – share of women on bank's management board.

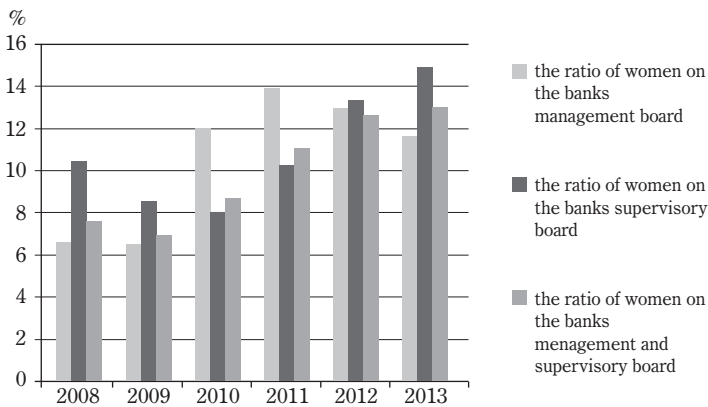
**SoWSB** – share of women on bank's supervisory board.

**SoWM&SB** – share of women on bank's supervisory and management boards.

In 2008, on average, women represented 6.7% of the bank management boards members, 10.6% of banks supervisory boards members and 7.7% of bank management and supervisory boards members in total. After 5 years, in 2013 ratio of women on the bank management boards increased to 11.8%, the share of women on the bank supervisory boards increased to 15.1% and the share of women on the bank management and supervisory boards in total increased to 13.3%.

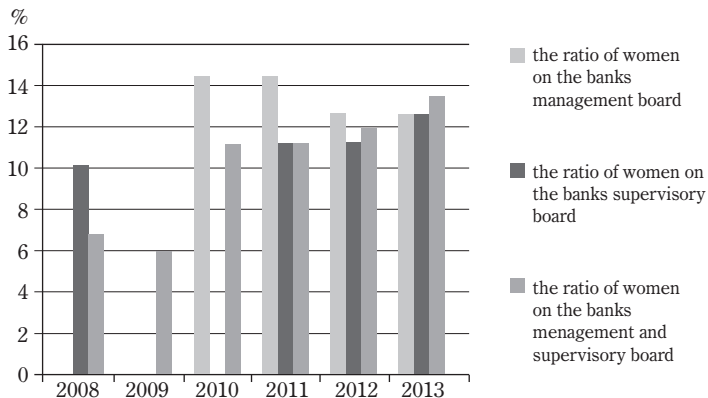
Therefore, the calculation showed that share of women on the bank management boards has been increasing on average by 1.1 percentage points per year, mean of share of women on the bank supervisory boards has been increasing on average by 1.7 percentage points per year and share of women on the bank management and supervisory boards in total has been increasing on average by 1.28 percentage points per year. These results provide some evidence supporting hypothesis H1 which suggests that in last 5 years ratio of women on the bank boards increased.

Figure 2. Ratios of women on the banks management and supervisory boards



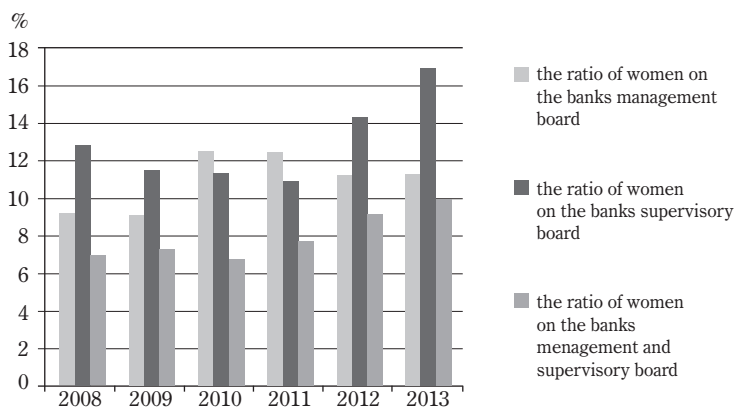
Additional evidence supporting H1 provides the analysis of medians. The median of the women shares on boards also increased during the period under study.

Figure 3. The median of ratio on management and supervisory boards



The median in 2008 was 0% for the ratio of women on the bank management boards, 7% for the ratio of women on the bank supervisory boards and 10% for the ratio of women on the bank management and supervisory boards. In 2013, all medians were higher. The median for the ratio of women on the bank management boards increased to 13%, the median for the ratio of women on the bank supervisory boards increase to 13% and median for the ratio of women on the bank management and supervisory boards were 13%. So if the median of all categories increased, it means that in last 5 years ratio of women on the bank boards increased as well.

Figure 4. Standard deviation of ratio on management and supervisory boards



Standard deviation is large which means that the values in the data set are farther away from the mean, on average. The highest spread in data was in 2013, the standard deviation was 16.7% for the ratio of women on the bank supervisory boards and the lowest was in 2010 – 6.7% for the ratio of women on the bank management and supervisory boards.

Table 1. Maximum number of women on bank boards during the period from 2008 to 2013

Maximum number of women on bank boards during the period from 2008 to 2013	0	1	2	3	4	5
Banks	BOŚ BZ WBK Getin Nobel	Getin Holding	BNP Paribas Handlowy Nordea PKO	BGŻ ING Millennium mBank	Alior BHP	PEKAO SA

Women representation in banks is differentiated. In some banks, there were no women during period 2008–2013. Table 1 presents a maximum number of women on boards in each bank.

On the one hand, Pekao SA has got the highest number of women on boards (5 members), Alior and BHP (4 members). On the other hand, BOŚ, BZ WBK, and Getin Nobel have got no women on boards during the analyzed period.

### 4.3. Banks performance

Financial measures which were taken into consideration are loans (L), equity (Eq), ROA, ROE, operating costs (OC), operating income (OI), debt securities (DS). All financial data are present in thousands of Polish zlotys.

In this study, I investigated banks' origin and size as a control variable. Bank's origin (FGN) is a dummy variable which says if the bank is Polish (0) or foreign (1). Only 3 of them are Polish (BOŚ, Getin Noble, PKO BP). The size of the bank is measured by total assets (A). Maximum, minimum, average, median of the financial variable are showed in Table 2.

Table 2. Maximum, minimum, average and median of the financial variable

	loans (L)	assets(A)	Total Investment Securities	Equity(E)	ROE	ROA	Operating Cost/ Operating Income
max	PKO PB (2013): 147372326	PKO BP (2013): 199231110	PEKAO SA (2013): 43132150	PKO PB (2013): 25111242	Getin Noble (2011): 30%	BGŻ (2013): 50%	BOŚ (2008): 16.51
min	BZ WBK (2008): 12916	Getin Noble (2008): 5602916	Getin Holding (2011): 472242	BZ WBK (2008): 88442	BHP (2008): -11%	BHP (2008): -6%	Getin Holding (2011): 0.35
average	33372515.05	57541355.71	12285932.75	6204883	11%	4%	1.89
st.dev	34026848.25	46719722.24	11384976.58	6421746	6%	9%	2.87
median	22090764	42550345	6506636	4227206	11%	1%	0.8

## 5. Econometric procedure

To investigate **hypothesis H1** I used figures which present “share of women on bank's management board” and “share of women on bank's supervisory board” to measure if gender diversity on banks' management and supervisory boards changes during the analyzed period.

To investigate **hypothesis H2** I used WoB, WoSB, WoB&SB as dependent variables and: ROA, the natural logarithm of assets (lnA), FGN and costs-to-income to find if there any connection between bank's size and origin and number of women on boards.

The econometrical models are built as follows:

- I.  $WoB = \alpha_1 \ln A + \alpha_2 ROA + \alpha_3 FGN + \alpha_4 (OC/IC) + \varepsilon i$
- II.  $WoSB = \alpha_1 \ln A + \alpha_2 ROA + \alpha_3 FGN + \alpha_4 (OC/IC) + \varepsilon i$
- III.  $WoB\&SB = \alpha_1 \ln A + \alpha_2 ROA + \alpha_3 FGN + \alpha_4 (OC/IC) + \varepsilon i$

To estimate these models I used maximum likelihood method.

To investigate **hypotheses H3** I used variable: loans to assets (L/A) as a dependent variable and SoWoMB, SoWoSB, SoWoM&SB, lnA, equity to assets (Eq/A) and FGN as independent variables.

The econometrical models are built as follows:

- I.  $L/A = \alpha_1 \ln A + \alpha_2 Eq + \alpha_3 FGN + \alpha_4 SoWoMB + \varepsilon i$
- II.  $L/A = \alpha_1 \ln A + \alpha_2 Eq + \alpha_3 FGN + \alpha_4 SoWoSB + \varepsilon i$
- III.  $L/A = \alpha_1 \ln A + \alpha_2 Eq + \alpha_3 FGN + \alpha_4 SoWoM\&SB + \varepsilon i$

To estimate these models I used the ordinary least squares method.

To **investigate 4<sup>th</sup>** hypothesis I used the standard deviation of ROE as a dependent variable and average of: SoWMB, SoWSB, SoWM&SB, Assets, Loans, Total Investment Securities and Debt Securities to Assets as independent variables.

Models are built as follows:

- $$St. Dev. ROE = \alpha_1 avr. A + \alpha_2 avr. L + \alpha_3 avr. TIS + \alpha_4 avr. SoWoSB + \alpha_5 avr. DS/A + \varepsilon i$$
- $$St. Dev. ROE = \alpha_1 avr. A + \alpha_2 avr. L + \alpha_3 avr. TIS + \alpha_4 avr. SoWoMB + \alpha_5 avr. DS/A + \varepsilon i$$
- $$St. Dev. ROE = \alpha_1 avr. A + \alpha_2 avr. L + \alpha_3 avr. TIS + \alpha_4 avr. SoWoS\&MB + \alpha_5 avr. DS/A + \varepsilon i$$

To estimate these models I used the ordinary least squares method.

Table 3. The determinants of women presence on management and supervisory boards in banks

Dependent Variable	WoMB		WoSB		WoM&SB	
	Model 1.		Model 2.		Model 3.	
	Coeff.	St.Dev	Coeff.	St.Dev	Coeff.	St.Dev
ROA	1,08	(1,72)	2,40	(1,67)	0,34	(1,59)
OC/OI	0,05	(0,08)	0,08*	(0,05)	0,06	(0,04)
FGN	7,53***	(1,15)	1,42***	(0,36)	2,12***	(0,39)
lnA	-0,07	(0,27)	0,62***	(0,21)	0,64***	(0,23)
McFaddens Pseudo-R <sup>2</sup>	0,28		0,16		0,31	
Chi Square test	33,60***		18,84***		32,03***	
AIC	96,72		110,84		82,33	

\* indicates statistical significance at 1% level

\*\* indicates statistical significance at 5% level

\*\*\* signifies statistical significance at 1% level

I verified H2 using probit model. Results are presented in Table 3. In all models, the explanatory variables are jointly statistically significant at the levels below 1%. The values of Pseudo R<sup>2</sup> are in line with those observed in the relevant literature. The Akaike information criterion suggests that model 3 has the highest quality. In the economic terms, all models demonstrate that the presence of women on boards is positively and statistically significantly affected by the foreign origins of a bank. The estimated coefficients for the variable "FGN" are all positive and different from zero at the 1% level. Additionally, in the case of supervisory boards and both boards (models 2 and 3) the frequency of women on board is positively affected by the size of a bank. Therefore, the result presented in Table 2 supports H2.

H3 was verified by a linear model, what is presented in Table 4. As in previous estimations, in all models, the explanatory variables are jointly statistically significant at the levels below 1%. Estimation showed that foreign banks are characterized by the smaller ratio of loans to assets. Moreover, models demonstrate that the banks loans activity is positively and statistically significantly affected by the presence of women on supervisory boards and by the presence of women on supervisory and management board in total, the latest findings are inconsistent with H3.

Table 4. Investment policy and women presence on boards in banks

Dependent Variable	L/A		L/A		L/A	
	Model 1.		Model 2.		Model 3.	
	Coeff.	St.Dev	Coeff.	St.Dev	Coeff.	St.Dev
E/A	2,42	(1,79)	2,32	(1,84)	2,29	(1,82)
OC/OI	-0,001	(0,01)	0,00	(0,01)	-0,001	(0,01)
FGN	-0,24***	(0,09)	-0,34***	(0,09)	-0,39***	(0,09)
lnA	-0,08	(0,05)	-0,08	(0,06)	-0,09	(0,05)
SoWoMB	-0,35	(0,27)	-	-	-	-
SoWoSB	-	-	0,62**	(0,26)	-	-
SoWoM&SB	-	-	-	-	0,99***	(0,33)
R <sup>2</sup>		0,24		0,28		0,28
F Statistic		3,58***		6,07***		6,15***

Table 5. Performance stability and women presence on boards in banks.

Dependent Variable	St.Dev. ROE		St.Dev. ROE		St.Dev. ROE	
	Model 1.		Model 2.		Model 3.	
	Coeff.	St.Dev	Coeff.	St.Dev	Coeff.	St.Dev
avr. A	0,00***	0,00	0,00	0,00	0,00	0,00
avr. L	0,00	0,00	0,00	0,00	0,00	0,00
avr. TIS	0,00*	0,00	0,00	0,00	0,00	0,00
avr. DS./A	0,09	0,07	-0,16**	0,07	-0,17**	0,07
avr. SoWoMB	0,03	0,06	-	-	-	-
avr. SoWoSB	-	-	-0,02	0,05	-	-
avr. SoWoM&SB	-	-	-	-	-0,05	0,10
R <sup>2</sup>		0,79		0,41		0,42
F Statistic		15,61***		4,55**		4,68**

H4 was verified by a linear model, what is presented in Table 5. As well as in previous estimations, in all models the explanatory variables are jointly statistically significant at the levels below 1%. Due to a limited observation, the statistical inference should be very careful. In general terms, the presence of women on boards does not impact on performance stability, since the relevant variable SoWMB, SoWSB, and SoWM&SB are insignificant. Surprisingly, models demonstrate that the debt security to assets affects negatively and statistically significantly on banks performance stability, so when the ratio of debt securities to assets is higher, the banks ROE is less stable.



## 6. Conclusions

Previous research showed that the proportion of women on management and supervisory boards in Poland is increasing (European Commission's Database, 2013). The main objective of this article was to check if the changes in the proportion of women on Polish banks board are significant and whether they have an influence on banks performance, result stability, and investment policy.

Literature review pointed out that men and women have got different styles of management, (Eagly et al., 2003), women are more likely to innovate (Davis et al., 2010) and less likely to make risky investments (Bernasek and Shwiff, 2001).

Based on literature review, I formulated four hypothesis. First, I checked if in last 5 years ratio of women on the banks management and supervisory boards increased. Research showed that in the over the period 2008 to 2013 the mean of share of women on the bank management boards has been increasing on average by 1.1 percentage points per year, mean of share of women on the bank supervisory boards has been increasing on average by 1.7 percentage points per year and mean of share of women on the bank management and supervisory boards in total has been increasing on average by 1.28 percentage points per year, so in last 5 years ratio of women on the bank boards increased. In my opinion, the share of women on board increase because of the rise of awareness towards women' competence and capabilities. The second reason is growing number of highly educated women with suitable professional background and experience. Besides, there are some legal regulations which encourage balanced construction of boards.

Second, I analyzed if in larger and foreign banks there is a higher probability of the presence of women on management and supervisory board in banks. Models estimation showed that the presence of women on boards is positively and statistically significantly affected by the foreign origins of a bank and size of banks assets. The second hypothesis was, thus, supported as well. There is one main reason behind this result. The bank size is positively correlated with board size and in bigger board there is a higher probability of women presence.

The third hypothesis was that women are less willing to take risks, so their presence has an effect on banks investment policy. Models estimation demonstrated that the bank investment policy is not affected by women on board in a negative way, so this hypothesis was rejected.

Last but not least, I analyzed if banks, with a higher share of women on board, achieve more stable financial results. Unfortunately, I could not find any relationship between share of women on board and stability of performance, most probably due to the limited number of observations, which is the main limit of

this study. The small number of observations makes the statistical inference more difficult. However, the significant increase in observations number would require resource extension.

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