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Boardroom Gender Diversity and Firm Financial Performance: Evidence from the Banking Sector in Georgia

By

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Biographical Note

Tornike Beridze was born in Tbilisi, Georgia in 1991. He received his bachelor degree in Georgia from the faculty of Business Administration at the International Black Sea University. In his last year of study he did internship at the auditing company PKF Georgia and later he started working at one of the wine making company as an assistant of financial manager. In 2014 he obtained Erasmus Mundus scholarship to continue his studies in Portugal. He is currently in his 2nd year of study in Master of Finance at Faculty of Economics of University of Porto.

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Abstract

After recent corporate scandals and financial crises, there has been a lot of discussion whether there should be more female representatives in top management and company boardrooms. The movement of women into management, including upper levels of management, has been an important research topic for many years.

The study contributes to the empirical literature by examining the relationship between board gender diversity and financial performance of banking sector in Georgia, a country which historically has a very masculine culture. It has been found that presence of just one woman on board has a negative and significant impact on the performance of banks. However, if there are two or more women on board the impact becomes positive and significant, which means gender diversity matters. This research gives new light on Georgia's boardroom dynamics, because it is the first to analyze Georgian reality and will contribute to the discussion about gender quotas, which has already started in politics.

Key words: Corporate governance, diversity, gender, board of directors, performance.

JEL-Codes: G34, M14, L25

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1. Introduction

The effective and successful work of a board of directors depends upon various factors, such as qualification and experience of each member of the board, their level of share ownership in the firm, their cultural background and among these factors is also the gender composition of a boardroom. Recent corporate scandals and financial crises drew much more attention to corporate boards and their composition. For example, after the bankruptcy of Lehman Brothers a lot of questions were raised by investors about the role and actions of the board of directors who are responsible for protecting shareholders' interests.[1]

One of the main motivations of the study is the current situation in terms of gender equality and to understand if there are financial benefits of gender diversity for a firm. Gender inequality is not only a moral and social issue but is also a critical economic challenge. Women account for half of the world's population and if their full economic potential is not achieved the global economy will suffer. Recent McKinsey Global Institute's report "The Power of Parity: How Advancing Women's Equality Can Add $12 Trillion to Global Growth" shows that narrowing the global gender gap in work could double the contribution of women to global GDP growth between 2014 and 2025. If all countries used their full potential in the progress of gender parity, that would mean women playing an identical role in labor markets as men and it is estimated that as much as $28 trillion could be added to annual global GDP in 2025 which is practically almost the size of the combined US and Chinese economies today. In the case of just a "best in region" rate of progress, meaning that countries would match their performance in terms of gender equality with the best performer in their region, still $12 trillion would be added which is also equivalent in size to the current GDP of Japan, Germany, and the United Kingdom all together.[2] However, to reach these results it is crucial for countries and their societies to

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[1] http://www.businessweek.com/investing/insights/blog/archives/2008/09/where_was_lehma.html
[2] http://www.mckinsey.com/insights/growth/how_advancing_womens_equality_can_add_12_trillion_to_global_growth

understand the importance of solving the gender gap at work. More broadly, businesses need to think about how they access different skill sets. Business growth is much depending on the diversity of opinion, which means thinking and acting differently from the competitors. Gender diversity can be the one of the ways; women need to be proportionally represented in all sectors of the economy and to have the same possibilities as men have. Correspondingly, they need to be promoted to the senior management positions and in corporate boards of companies. This study will be one of the contributions for Georgian society to understand the need for gender diversity in corporate boards and encourage discussion about gender parity in the economy.

Although universally recognized norms and principles of international law state that every human being has an equal right to employment regardless of sex and despite significant improvements in education and political participation, representation of women in decision making positions is still a challenge to the whole world, including Georgia. There is a lack of female representation in most of the decision-making positions whether it is politics or business. This is especially the case in Georgia because it is still a very masculine, patriarchal country where men occupy a dominant position.

However, if we look back to the recent history we will see that women were widely promoted in management during the Soviet Union times due to the Communist ideal of equality of opportunity. The consequence was that females were not only represented in those traditional industries such as healthcare and hospitality but they were well accepted in other service industries such as financial services and technology.[3] On the other hand, after the collapse of the Soviet Union, the process of transition from planned economy to the market economy was really painful for the country. The process of privatization created a big gap between the rich and poor layers in the society. Moreover, political instability of the new government led to huge unemployment in the early 1990s. Notably women were significantly affected due to the collapse of all the traditional women's fields such as food industry, textile, chemical production, etc. Even though they tried to adapt to the new market standards most of them were unable to find employment according to their

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[3] http://time.com/2861431/female-executives-gender-quotas/

qualifications and this situation forced them to move outside of the country as migrant workers. Most of them have been working in the Western countries as nannies and caretakers in order to help their families to survive (Kiria Lela, 2014).

A lot of improvements have been made however in gender equality over the past two decades. Since Georgia is following European values government tries a lot to adjust national laws and regulations according the recommendations of different European governing bodies. In March 2010, the Government of Georgia adopted the law "On Gender Equality" and developed a National Action Plan. It underlines equal rights of men and women and points out the importance of active participation of women in political, economic and social processes. However, in terms of female representatives in the parliament Georgia only takes a 109th place out of 145 countries with a ratio of 12% according to the United Nations Entity for Gender Equality and the Empowerment of Women (UN Women), which indicates that women's role in parliament is minimal from 150 seats only 18 are occupied by women. The same picture is observed for the executive body and these figures are quite law in comparison to Europe or the vast number of other countries around the globe.[4] Moreover, according to the 2014 data from GEOSTAT, 62 percent of businesses are headed by males and only 32 percent by females. Furthermore, on average the nominal monthly salary of employed men is 45.1 percent higher than that of employed women for past 16 years (1999-2014).[5]

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[4] http://forbes.ge/news/231/
[5] www.geostat.ge

Figure 1 - Average nominal monthly salary according to the gender in Georgian Lari(GEL)

Average Nominal Monthly Salary According to Gender In GEL

Women: 47.4, 52.1, 63.5, 75.7, 85.7, 108.3, 131.1, 177.6, 240.2, 367.7, 398.3, 426.6, 460.2, 517.9, 585.0, 617.9

Men: 90.9, 95.9, 125.2, 150.1, 163.0, 200.8, 267.9, 362.0, 475.6, 678.4, 690.8, 742.8, 771.1, 859.6, 920.3, 980.0

Years: 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014
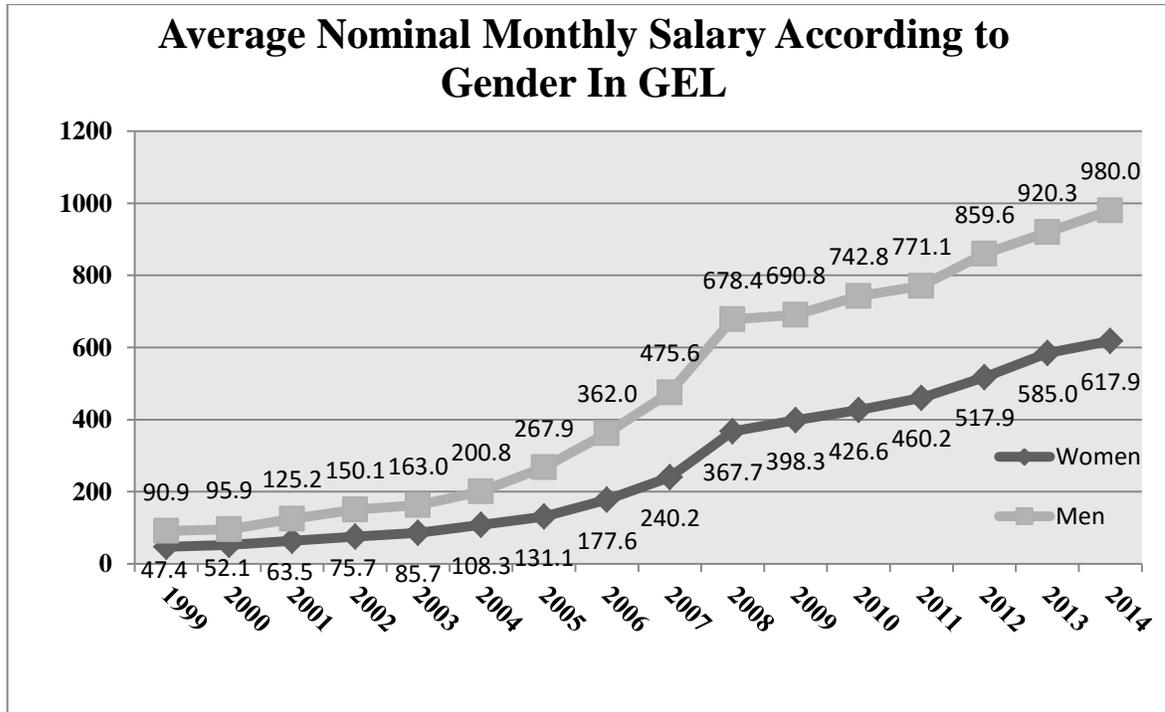
Source: National Statistic Office of Georgia - Women and Men in Georgia, 2015

This is not only the developing countries' dilemma. In its most recent attempt to promote gender equality in boardrooms, the European Union developed a proposal in 2012 and adopted mandatory corporate board quotas for women. This legislation seeks to ensure that for 2020 there would be 40% of women on the boards of listed companies in Europe.[6] On the examples of Norway, Iceland and Spain, after the introduction of quotas the number of women in the top positions has risen. In general, European policy initiatives had a positive effect on gender diversity on corporate boards, with 19% of European boards having 30% or more female directors, only 10%, having zero female representation, and over 50% of European companies possessing more than 20% of women on their boards (The CS Gender 3000: Women in Senior Management). However, the introduction of quotas has been a subject of deep discussions in some countries such as Great Britain,

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[6] http://ec.europa.eu/justice/gender-equality/files/gender_balance_decision_making/boardroom_factsheet_en.pdf

Czech Republic and others. It has often been seen as unwelcome instructions to free business practices.

Table 1 - Percentage of women on boards by region in 2013

	0	<10%	10 – 20%	20 – 30%	>30%
North America	24.7	11	39.6	18.6	6
Europe	10.3	6.3	31.4	32.8	19.2
EMEA	39.6	10.4	29.2	15.1	5.7
Latam	56	13.1	19	10.7	1.2
Developed Asia	54	11.1	24.3	8.7	1.9
Emerging Asia	49.5	17.2	23.3	6.7	3.3
Total	**33.7**	**11.1**	**31.4**	**16.9**	**6.9**

Source: Credit Suisse Research

There is a significant amount of literature about this issue. Some of this suggests that corporate boards benefit from greater gender diversity, while others have an opposing view. McKinsey and Catalyst favour the positive effects. Catalyst has shown that Fortune 500 companies with more women on their boards tend to be more profitable.[7] McKinsey displayed similar results as well: companies with a higher proportion of women at board of directors typically show a better degree of organization, above-average operating margins and higher valuations.[8] Other studies, which were conducted by Adams and Ferreira (2009) or Rose (2007), have shown that there is no relationship between greater gender diversity and improved profitability.

The main objective of this study is to examine the effect of women's presence in corporate boards on firm performance using evidence from Georgian financial firms over 10 years period. In addition, it will try to understand what the other gains from are, and obstacles for, the participation of female members of board of directors for a company. It will add to the scarce empirical evidence that is available about this topic in Georgia. Most of the studies are concentrated on the USA, Central and Western Europe or other large

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[7] http://www.catalyst.org/media/companies-more-women-board-directors-experience-higher-financial-performance-according-latest
[8] http://www.raeng.org.uk/publications/other/women-matter-oct-2007

countries. Increased female participation in society and economic activities is one of the important subjects that have been discussed in Georgia during recent years. So far, there are no gender quota requirements in Georgian corporate boards, however in politics this debate has already started and there are talks about introducing gender quotas in parliament. If this is introduced in parliament, afterwards there will probably be only a relatively short way from politics to economy, regardless of the degree of efficiency of these quotas (Teigen, 2012). Furthermore, the country is aspiring to integrate into European Union and in the near future it may face these requirements. Thus, our study will contribute to future discussions about this topic. Finally, it simply will be interesting to investigate this subject and to see what is the relationship between board gender diversity and company financial performance.

The remainder of the study is organized as follows. In chapter 2 a literature review is conducted. This begins with theoretical perspectives about gender diversity effect of boardroom and is followed by the economic aspects of diversity. In the third section of the literature review we will present some of arguments against gender diversity and the final section contains discussion of results of similar studies. Chapter 3 describes the research data and methodology used. This is followed by chapter 4 with a discussion of the results obtained while chapter 5 provides the main conclusions.

2. Literature Review

In most of the literature, board of directors are considered to have several functions such as supervising managers, providing with information and advices, monitoring compliance with necessary laws and regulations, and connecting the company with the external environment (Monks and Minow, 2004). Due to the complexity of the banking industry and the fact that it has a crucial role in the functioning of economic systems, corporate governance is an important tool for banks to monitor their performance continuously. Board diversity is believed to be one of the mechanisms to enhance board performance by improving its effectiveness, control and monitoring functions (van der Walt and Ingley, 2003). Gender diversity is an especially important issue for policy makers around the globe as these are trying to support the development of female talent. For example Norway and Spain have already introduced a rule, which requires public companies to have at least 40% of women in their boards; France will fully adopt this rule by 2017.[9]

2.1 Theoretical Perspectives

Arguments for diversity in corporate boards can be derived from several backgrounds, which are theoretical, economic and moral (ethical). In the existing literature, the main theoretical perspectives of corporate governance that are most often used to explain positive effect of diversity on firm performance are the agency, resource dependence and institutional theories.

Agency theory is more often used by researchers to understand the link between boardroom characteristics and firm value. As it is already well known corporate board plays a very important role in controlling and monitoring managers (Fama and Jensen, 1983). It

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[9] http://www.telegraph.co.uk/finance/newsbysector/banksandfinance/11341816/Proof-that-women-in-boardrooms-quotas-work.html

ensures shareholders that managers act in their best interests and create value for them. There are different characteristics which help board to execute its functions more effectively. One argument consistent with diversity increasing boardroom strength and independence is that people with different gender, cultural and education background might raise more questions which might not be asked by the directors with similar backgrounds (Carter, Simkins, and Simpson, 2003). However, over monitoring can cause some failures in communication between managers and directors. Moreover, the more diverse the directors are, the more conflicts can arise on the board because of opinion disagreement (Adams and Ferreira, 2009). Thus, agency theory doesn't give clear guidance to conclude that gender diversity has a positive effect on firm performance, thus increasing the importance of empirical examination (Carter et al., 2003).

The Resource dependence theory provides a much stronger support for the financial benefits of board diversity. This theory, developed by Pfeffer and Salancik (1978), says that firms operate in an open system and depend on external organizations that play an important role in the functioning and survival of businesses. The corporate board acts as an essential link between the firm and its environment and the external resources it depends on. As a result, when there are various types of directors in the corporate board they will bring different beneficial resources for the firm due to the unique information they hold. Thus, the existence of female directors in the corporate board may help the company to enlarge its access to critical resources through their skills, knowledge and experience, which are different from their opposite gender (Hillman, Shropshire, and Cannella, 2007).

Institutional theory can be another justification for gender diversity of a board of directors. Bilimoria (2006) examined the effect of female directors on the gender composition of a company and found out that they have a positive effect on promoting female workers on other corporate levels. As a result, the presence of women on the board can be a positive sign that a firm values the success of its female personnel. This can improve the reputation of a company in the eyes of future recruiters and customers as well (Hillman et al., 2007; Singh and Vinnicombe, 2004).

2.2 Economic arguments for gender diversity

There are several economic arguments for greater gender diversity. The first is that boardroom diversity can increase the competitive advantage of diversified firms compared to non-diversified ones (Campbell and Mínguez-Vera, 2008). This argument is based on empirical works developed by Robinson and Dechant (1997). In addition, markets are becoming more and more diverse and a similarly diversified board can have a better understanding of what customers and suppliers need. As a result, the firm can enjoy benefits from higher market penetration. Furthermore, based on their personal experience female directors may suggest new ways of introducing products to the market. Having women on their boardrooms can be especially critical for firms which operate in markets with high concentration of female buyers (Daily, Certo, and Dalton, 1999).

The second argument is that diversity increases creativity and innovation in the company. Like attitudes, beliefs and other characteristics are not randomly distributed in the population, but they tend to vary systematically by demographic variables such as gender, age or race (Robinson and Dechant, 1997). The third argument is effective decision making. Different ranges of experience and opinions can lead to better corporate governance (Fondas and Sassalos, 2000) and female directors are one of the sources who bring a different voice into the debates and decision making of the board (Zelechowski and Bilimoria, 2004).

Board meetings serve an important monitoring function (Vafeas, 1999). Carter (2003) finds evidence that firms that have more women on the board tend to have more board meetings in a year. Moreover, Singh (2008), who examined gendered boardroom culture in engineering, high technology and scientific organizations, reports that diversity leads to more effective and less macho working environment. He adds that homogeneous groups like all male or all female groups don't understand what they are missing and have a narrower view. One of the interviewed male executive director's comments was that "they bring a different way of working, you know, a different perspective, a different way of resolving issues and conflict and that helps the dynamics greatly".

In fact, the number of women on the board can make a difference. Konrad et al. (2006) reports, based on interviews with several CEOs and directors from Fortune 1000 companies, that when there are 3 or more female representatives on the board women are no longer considered outsiders and they influence the content and process of board discussions extensively. "One woman is the invisibility phase; two women is the conspiracy phase; three women is mainstream". This supports the critical mass theory, which says that when a certain limit is reached the impact of subgroup gets more obvious and significant (Kramer, Konrad, Erkut, and Hooper, 2006).

2.3 Arguments against gender diversity

On the other hand, there are some arguments that high gender diversity may not be the guarantee for a firm to perform better and function effectively. A different perspective coming from more diverse boards does not necessarily mean more effective monitoring because there is simply a risk that board members may be marginalized (Carter et al., 2003).

More diverse board may have a negative influence on effective problem solving. The argument is that the decision-making process may take longer, as there may arise various and conflicting opinions on a given subject in the boardroom. Thus, the board would be more divided and less coordinated than less heterogeneous board would be (Rose, 2007). Moreover, heterogeneous groups may result in emotional conflicts which may possibly make fulfillment of particular tasks more difficult (Williams and O'Reilly, 1998). Thus, ignoring these negative effects of diversity is not the right decision. Instead, understanding those negative effects can lead to better results.

2.4 Discussion of related studies

The arguments discussed above do not give a clear conclusion on the effect of boardroom diversity on company performance. As a result, a lot of empirical examination has been conducted all over the world to understand the relationship in the real world. Most empirical results are based on USA data but in recent years studies developed for European countries increased significantly. All these studies do not have consistent results. They show both positive and negative relationships or in some case no relationship at all between board diversity and firm performance. One of the reasons for the conflicting results is that studies are conducted in different countries and different moments in time. This can be an important aspect because timing and the legal and institutional systems of the country may have a serious influence on the results (Campbell and Mínguez-Vera, 2008).

One of the earliest studies, developed by Shrader, Blackburn and Iles (1997), finds a disproportional relationship between the percentage of women in the top management team or in the board of directors and firm financial performance (using only accounting measures such as ROE, ROA). On the other hand, Carter (2003) examined the impact gender and minority diversity on the company financial performance. They used a 638-firm full data sample from Fortune 1000 firms and after controlling for industry, size and other important variables, they found a significant positive relationship between the presence of women or minorities on the board and firm value. In this case instead of an accounting variable they used Tobin's Q as a proxy for firm value creation. This is one of the first and comprehensive studies which examine boardroom diversity effect.

There are more recent non-USA studies too. Campbell and Minguez-Vera (2008) investigated the link between gender diversity of the board as measured by several variables and firm financial performance as measured by a proxy for Tobin's Q. On the example of Spain they used panel data methodology and found that gender diversity has a positive effect on firm value. At the same time on a Danish firms' sample the study fails to find a significant relationship between the same variables (Rose, 2007). However, in contrast to those findings Ahern and Dittmar (2012) examined the impact on firm valuation

of mandated female board representation according using the Norwegian firms' example. They found that there is a substantial decrease in firm value after adopting gender quotas in corporate boards since 2003. Their result was consistent with the results of an earlier study on the same market by Bohren and Strom (2005).

Another study developed using 12 years of data (1999-2011) of a developing country such as China, supports the idea that gender diversity has, in contrast, a positive effect on firm performance as measured by the return on assets and return on sales. Their empirical study also supports the critical mass theory (Liu, Wei, and Xie, 2014). Contrarily, a study on another developing country shows that female board of directors lead to lower firm value, using evidence of Pakistani banks (Sajjad and Rashid, 2015).

Most of the studies exclude financial firms from their samples, and as a result the empirical literature is much more limited for the understanding of boardroom gender diversity in the banking sector, besides the fact that corporate boards play a core role for the successful operation of banks (Adams and Mehran, 2008). Some authors even say that board failure in corporate boards is a major cause of the financial crisis (Kirkpatrick, 2009). Using 34 years of data, Adams and Mehran (2008) document that board composition has little relationship with performance in the USA financial sector, which is consistent with some other studies for non-financial firms. However, board size and performance are positively related.

Table 2 - Summary of related studies

Authors	Year	Subject	Sample	Methods	Control variables	Results
Shrader et al.	1997	To explore the firm-level relationships of women in management with financial	200 USA firms with the largest market value for 1992 and	Performance measures: ROS, ROA, ROI, ROE. Statistical tests used:	-total number of managers -total number of top managers -total number of board members	Mixed relations among measures of women in management

		performance outcomes	1993	Hierarchical regression F-test		and firm financial performance
David A.Carter Betty J. Simkins W. Gary Simpson	2003	Relationship between board diversity (gender and minorities) and firm value	638 firms from *Fortune 1000 Firms (USA)*for one year (1997)	Performance measure: Tobin's Q. Statistical tests: Comparisons of means and 2SLS regression analysis.	-board size -number of meetings annually -CEO/ chair duality -weather directors receive stock compensation -insider ownership -% of insiders on the board -firm size -ROA -Industry	Statistically significant positive relationship between the presence of women or minorities on the board and firm value. Fraction of women and minority directors are depend on firm size and number of insiders
Kevin Campbell , Antonio Minguez-Vera	2008	To investigate link between the gender diversity of the board and firm financial performance in Spain	Panel data of non-financial firms listed on the continuous market in Madrid during 1995-2000	Measure of firm value: Tobin's Q. Statistical tests: Hausman test, 2SLS	-Total number of directors -Debt level -ROA -Size of the firm	Presence of women on the board of directors does not, in itself, effect firm value. However, diversity of the board has positive impact on firm value. Firm value has no influence on women's presence and on gender diversity
		The key issue is whether board	443 firms listed on Copenhag	Measure of firm's performance:	- The average payments to the board	Evidence showing that gender in

Caspar Rose	2007	diversity, especially in relation to gender or ethnic background, education, proportion of foreigners etc. could stimulate firm's performance.	en Stock Exchange during 1998-2001	Tobin's Q, Statistical method: cross-section regression	-the increase of book assets over the period -Cumulated ownership of all shareholders with more than 5% ownership -firm size -industry dummies -year dummies	relation to board composition does not influence firm performance
Yo Liu, Zuobao Wei, Feixue Xie	2014	The effect of board gender diversity on firm performance in China's listed firms, moreover they also examined if number of women make difference and where is the strong effect of gender diversity in state or private owned firms	Over 2000 listed firms in Shanghai and Shenzhen Stock Exchanges for period 1999-2011	Firm performance is measured by ROS, ROA. Statistical tests used lagged board variable method, 2SLS, Arellano-Bond method	-Percent of independent board directors -board size -ownership domestic or foreign -percent of shares owned by firm management -number of share holders -leverage -number of years firm is listed	-Percent of women directors has significant and positive effect on firm's performance -3 or more women have stronger effect of firm performance -Effect is significant in legal person owned firms and insignificant in firms controlled by state owner
Sumbal Sajjad and Kashif Rashid	2015	The relationship among board gender, national and age diversity and firm's performance in developing financial	20 commercial banks listed on Karachi Stock exchange in Pakistan for the	Firm performance measured by Tobin's Q, Generalized Method of Moments was used for the analysis as well as	-market capitalization -price-to-book ratio -firm size -board size	The results of the study suggest that in Pakistan, female and young board of directors negatively affect firm

		markets	years 2007-2012	robustness test		value, whereas proportion of foreign directors improves the performance of a firm.

It can be seen that even empirical data does not give clear predictions of the effect of women's presence on corporate boards. As there is no reported evidence about the Georgian reality this study will be interesting in order to understand what the situation looks like, because diversity is one important element of a corporate board. Little attention is paid to this issue in developing Eastern European countries such as Georgia, whereas its importance is increasing day by day around the globe. Thus, this study will also have a small contribution for the existing literature, as there is a lack of empirical evidence from developed Eastern European countries.

In summary, a set of theories and empirical evidence provided above provide a reasonable indication for the possibility that a link between board diversity and firm performance exists. However, it is not possible to say the nature of the link, i.e., whether it is positive or negative. As a result, our stated null hypothesis will be following:

H1: The presence of women on the board is not related to the financial performance of the firm.

Rejection of this hypothesis will imply that the presence of women directors in the board has an effect on firm financial performance. Moreover, it will be also tested if the number of women directors makes difference.

3. Research Data and Methodology

3.1. Sample and data analysis

As it was mentioned before, this study uses data from the Georgian market. The sample consists of Georgian commercial banks which have dominated position in domestic financial sector. According to data from the National Bank of Georgia (NBG) there are 19 banks which operate actively there and 3 more banks which do not operate under their name any more due to acquisitions or because they left the country already. Their financial data is obtained from annual financial reports and BankScope database. Corporate board sizes and their gender composition are taken from the annual reports, published on the website of NBG. All the banks are required to publish audited and detailed annual reports by NBG in order to maintain financial stability and transparency in the country. As a result, this study will use panel data with 174 observations for 10 years from 2005 until 2014.

Table 3 shows descriptive statistics for the variables included in the model. The main dependent variable is ROA which is used as the measure of performance of the bank and has a mean value of 0.48% which is close to the results obtained by Liu et al. (2013) for the Chinese banking sector. This percentage also shows that firms in the banking sector were financially successful throughout the 10-year period investigated; however there is a wide variation. The minimum value of ROA is -22.36% and the maximum 14.07%, while the mean value is 0.48%. The same situation is for ROE in this case variation is much more significant, the mean value is 2.98%, while -121.54% and 47.18% are the minimum and the maximum values, respectively.

Table 3 - Descriptive statistics

|	Mean	Median	St. deviation	Minimum	Maximum
Total Assets	626,966	204,306	1,193,053	4,715	7,537,300
LN Assets	12.20	12.23	1.58	8.46	15.84
Equity	114,670	38,495	219,398	852	1,461,100
Lever	71.88	80.84	21.15	4.44	97.91
ROA (%)	0.48	1.82	5.19	-22.36	14.07
ROE (%)	2.98	6.01	22.35	-121.54	47.18
Net Income	10,467	1,612	38,402	-98,900	246,000
Board size	5	5	2	2	9
LN Board	1.47	1.61	0.38	0.69	2.20
Number of women directors	1	0	1	0	3
% of women	13.41%	0.00%	18.13%	0.00%	66.67%
Dummy Woman	0.43	0	0.50	0	1.00
Age of the bank	12	13	6	1	25
LN Age	2.32	2.52	0.68	0	3.22
Foreign share ownership	71.36%	92.16%	36.76%	0.00%	100.00%
Blau's Index	0.17	0	0.20	0	0.50
Shanon index	0.25	0	0.29	0	0.69

Total assets, equity and net income are in thousands of Georgian Lari (GEL), LN means natural logarithm, ROA (net income divided by total assets), ROE (net income divided by total equity), Lever (total debt divided by total equity), Foreign share ownership (percentage of foreign investor's share ownership), Dummy Woman (binary variable that takes value of one when there is at least one woman on the board of directors and 0 otherwise), Blau's and Shannon index measure diversity.

The mean percentage of women in Georgian banks' corporate boards is 13.41% for the period used in the study. It is possible to take a look at the percentage changes over the past ten years from figure 2. It shows that the highest percentages (exceeding 17%) of board positions held by women were in 2012 and in 2013, while for 2014 it is a bit less, around 15%. However, in comparison to the situation in 2006 the progress is noticeable as the percentage almost doubled. An Egon Zehnder study about European Board Diversity

Analysis is used to compare this with the situation for European boards.[10] According to that study the European average is 20.3% for the year 2014 and Georgia has a better situation than Austria, Greece of Portugal, but its situation is worse than the UK, Sweden or Norway. The situation is however way better than some other Eastern European countries. For example, according to the same study the Czech Republic has only 3.8% of board positions held by women in 2014. Moreover, the figures are 9.3% for Hungary and 5.9% for Russia.

Finally, the means for the bank size (LN total assets), leverage variable (Lever), board size and bank age variables are, 12.20, 71.88, 5 and 12 respectively. While for the instrumental variable foreign share ownership the mean is 71.36%.

Figure 2 - Average percentage of women in the boards of Georgian banks

Average Percentage of Women in the Boards of Georgian Banks

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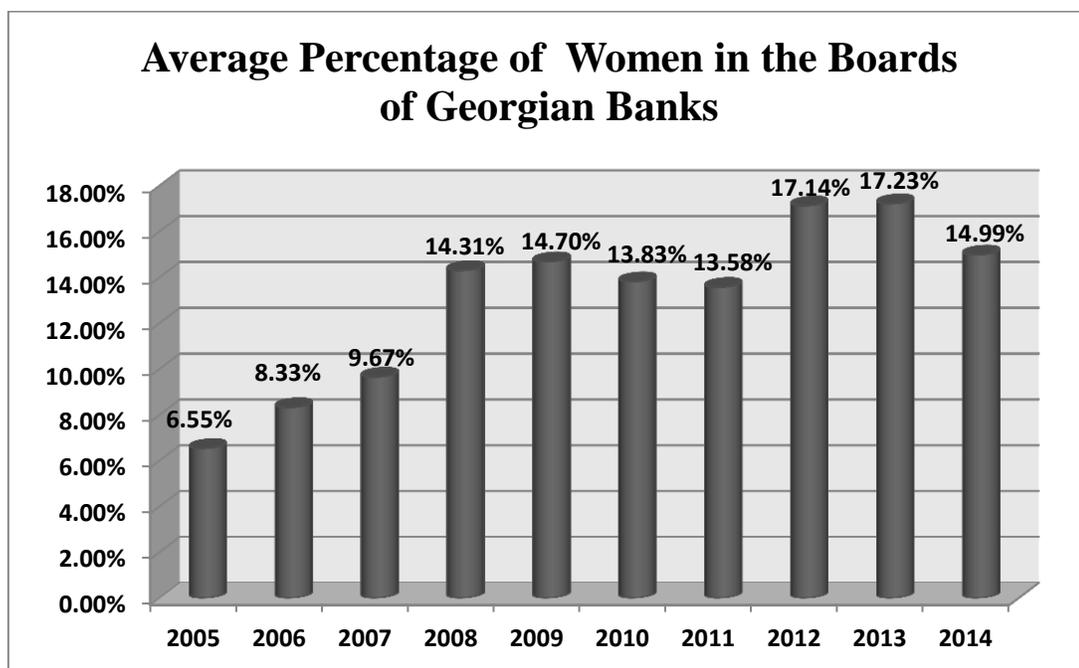
[10] http://www.egonzehnder.com/files/2014_egon_zehnder_european_board_diversity_analysis.pdf

Table 4 - European board gender diversity by country in 2014

Country	Company	% Board positions held by women
Austria	6	10.7%
Belgium	8	20.2%
Denmark	8	20.2%
Finland	6	32.1%
France	58	28.5%
Germany	44	16.6%
Greece	6	9.9%
Italy	19	20.2%
Luxembourg	7	8.9%
Netherlands	22	19.5%
Norway	7	38.9%
Portugal	6	5.2%
Republic of Ireland	14	16.3%
Spain	20	15.5%
Sweden	21	27.5%
Switzerland	34	13.9%
United Kingdom	70	22.6%
Europe Overall	**356**	**20.3%**

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Table 5 – The number and % of women on the boards of directors of Georgian banks

Number of women on board	0	1	2	3	Total
Number of firm/year observations	101	50	23	2	**176**
% of firm/year observations	57.39%	28.41%	13.07%	1.14%	**100%**

Table 5 provides detailed breakdown of women directors for the banking sector in Georgia over the period in our sample. As can be seen for the 10-year period more than half (57.39%) of the year/bank observations don't have a single woman on their boards of directors. Further, among 176 observations, 28.41% have only one woman and 14.21% 2 or more. The maximum number of women on the corporate board of Georgian banks is 3.

3.2 Empirical methodology

To determine the nature of the relationship between firm performance and female representation on the board a regression analysis is used. A measure of firm performance is regressed against a proxy for corporate board gender diversity according the following model:

$$Firm\ performance = \beta_0 + \beta_1 Diversity + \sum \beta_j CV_{jit} + \varepsilon_{it} \quad (3.1)$$

In the above model firm performance is measured by ROA; diversity is measured by the percentage of women in the board, a dummy variable that takes a value of 1 when there are one or more women in the board, 0 otherwise. Diversity is also measured by the Blau and Shannon indices of diversity; CV stands for a number of control variables which in this case are leverage, bank size (natural logarithm of total assets), board size (natural logarithm of number of directors) and bank age (natural logarithm of bank age).

As it is mentioned above an accounting-based measurements, return on assets (ROA), is used as the main indicator of firm performance. Most related studies use two methodologies to measure firm financial performance. The first is accounting- based measurements and the second is market-based measurements such as Tobin's q.   Even though Tobin's q is a widely used proxy to measure firm financial performance and it taking into account market expectations it is also not directly affected by the tax laws or accounting conventions (Wernerfelt et al.1988). In our case it won't be possible to use it due to the fact that most of the Georgian banks are not listed. Instead, our study follows Shrader et al. (1997) and Adams and Ferreira (2009), which use of returns on total assets (ROA) and other accounting indicators of firm performance. ROA indicates the ability of the company to produce accounting income for its shareholders within a given portfolio of assets for a particular time period.

As a proxy of gender diversity the total percentage of women in board and dummy variable is used similar to other studies. Moreover, according to Campbell and Vera (2007) two other indexes are used to measure diversity. The first is the Blau index which comes from 1977 but it is also known as Hirshman's index (1964) when it is used as the measurement of industrial concentrations. It is measured as $1 - \sum_{i=1}^{k} P_i^2$, where P_i represents the percentage of board members in each category and k is the total number of board members. The value of the index can vary from 0 to 0.5, which means there is only one category in case of 0 and board has an equal number of both gender representatives in the case of 0.5. The second index is the Shannon index which is sometimes known as Shannon-Wiener index due to the fact that it was independently developed by Wiener (1961) too. The calculation is according to the following equation $-\sum_{i=1}^{k} P_i \log P_i$, where P_i and k have the same meanings as in the previous equation. The range of values is from 0 to 0.69 and the logic is similar. However, the Shannon index is more sensitive to smaller differences in gender composition of boards, since it is a logarithmic measure of diversity.

To understand if unobservable heterogeneity is correlated with the independent variables or not, a Hausman test will be used. This test estimates weather coefficients of the fixed effects estimations and the random effects estimation are equal. If the hypothesis is

rejected the coefficients will be different which means that only fixed effects will be consistent. Furthermore, two-stage least squares (2SLS) will be used to avoid possible endogeneity problem. The problem arises because the presence of women could lead to a high performance of the firm or, the other way around, firms with high performance could be more willing to have more women in their boards. This means that board gender diversity could be correlated with the error terms (Adams and Ferreira, 2009). As a result, using a two-stage method will give unbiased and consistent coefficient estimates. Similar combination of control variables will be used as well which are discussed below.

To avoid biased results different control variables are used, which have some effect on board structure and bank performance already found in related studies.

One of the control variables is the natural log of board size which represents the total number of directors. Lipton and Lorsch (1992) and Jensen (1993) in their studies criticized the performance of large boards. The main arguments were that large boards face the problems of poor communication and decision-making that decreases their effectiveness. A negative effect was also found by David Yermack (1996). He used a different regression model with data from 1984-91 for 452 large public corporations and found an inverse association between board size and firm value. He also showed that financial ratios, measuring profitability and operating efficiency, appear to decrease as board size expands. For European countries similar results were found, consistent with the benefits of increased monitoring from bigger boards being outweighed by problems related with informational asymmetries between the CEO and the board, communication issues and decision-making difficulties (Martin J. Conyon and Simon I. Peck, 1998). However, contrary to theories predicting that smaller boards of directors are more effective, Belkhir (2009) suggests that banks with larger boards seem to achieve higher market value, as well as adding more directors to the board increases the return on assets of a bank. He used regression models with data from 1995-2002 for 174 bank and savings-and-loan holding companies and found no evidence of a negative relationship between board size and performance. The results even push towards a conclusion supporting a positive relationship.

Dalton et al. (1999) explains this fact by the argument that large boards increase the pool of expertise and access to external resources for a company.

In addition, bigger boards are more likely to have more female representatives. Brammer et al. (2007) conducted a study for the UK market and find that bigger boards with larger numbers of non-executive directorships were more diverse, which is consistent with findings in earlier literature such as by Carter et al. (2003).

Another control variable which is used for this study is bank size, represented by the natural logarithm of total assets. The size of a firm can affect performance in different ways. Larger firms can enjoy diverse capabilities and ability to achieve economies of scale which allow larger firms to perform better than smaller ones (Penrose, 1959). Moreover, Lee (2009) examined more than 7,000 US publicly-held firms observed over a recent period between 1987 and 2006 and found that larger firms tend to be more profitable than their smaller counterparts, either due to efficiency gains or higher market power. In the case of banks, De Andres and Vallelado (2008) suggest that growth potential is the main element in determining profitability rather than lower costs or strong market power.

The third control variable is the debt ratio, which is calculated as total debt divided by total assets. Some researchers assume that if a bank operates in a risky environment or if it bears more risk due to its capital policy, there can be a low presence of women in boards because of women's known risk aversion characteristic. They are less trusted to make riskier decisions than man that can be nonetheless an important source for the success of bank (Jianakoplos and Bernasek 1998; De Cabo et al. 2012).

Bank age is used as another control variable. A number of researchers suggest that older firms are more experienced, enjoy the benefits of learning and thus are already expertized in the business (Stinchcombe, 1965). Hence as a result these firms enjoy a superior performance. On the other hand, another stream of research suggests that older firms are more inertial, and with age they could be getting less flexible to make fast adjustments to a changing environment being therefore more likely to lose out in the performance to much younger firms (Marshall, 1920). Moreover, Loderer and Waelchli

(2009), in their large-scale study to address the issue of corporate aging, suggest that, with aging, firm's COGS and overhead expenses go up, growth slows down, and R&D expenses and capital expenditures fall behind the industry median.

Foreign share ownership was also introduced as an instrumental variable for the reason that 2SLS regression model requires one more variable of this kind. The intuition is that foreign shareholders could demand more women on the board to follow internationally recognized norms. Bianco et al. (2011) in their research found the evidence that women were more common in firms owned by a foreign shareholder.

3.3 Correlation among variables

Table 6 shows a simple check for multicollinearity, the purpose of which is to understand if independent variables used in the regression are highly correlated. A usual rule of thumb is the following: if a correlation between two independent variables is 0.7 or more it may indicate multicollinearity. The results presented in table 6 shows that the highest correlation coefficients are (in bold) those (a) the percentage of women on the board and either the woman dummy variable, the Shannon index and the Blau's index and (b) between the woman dummy and both the Shannon and Blau indexes. Since these 4 variables are not used simultaneously but only alternatively in each regression model, the high correlation among them is not an issue. No other correlation coefficient has a value greater than 0.7 in absolute terms.

Table 6 - Correlation Matrix

		1	2	3	4	5	6	7	8	9	10
1	ROA	1.00									
2	% of WOMEN	0.16	1.00								
3	DUMMY WOMAN	0.18	**0.86**	1.00							
4	BLAU'S INDEX	0.17	**0.94**	**0.96**	1.00						
5	SHANON INDEX	0.17	**0.93**	**0.98**	1.00	1.00					
6	LEVER	0.16	0.16	0.27	0.26	0.26	1.00				
7	LNAGE	0.24	0.24	0.26	0.25	0.25	0.47	1.00			
8	LNASSETS	0.19	0.19	0.28	0.22	0.24	0.62	0.58	1.00		
9	LNBOARD	0.12	-0.12	0.05	-0.04	-0.02	-0.00	0.17	0.18	1.00	
10	FORAGNE SHARE OWNERSHIP	-0.00	-0.17	-0.08	-0.12	-0.11	-0.02	-0.15	0.02	0.35	1.00

The table shows the correlation matrix between all the independent variables used in the study.

4. Results

In this chapter the empirical results of our investigation are presented concerning the relationship between gender diversity of corporate boards of Georgian banks and their performance, and according to the methodology discussed in the previous chapter.

The results of the testing of the regression models with different diversity characteristics are presented in tables 7, 8, 9 and 10. The relationship between the percentage of women on the board and ROA is shown in table 7, while table 8 displays the effect of gender diversity on firm performance when gender diversity is defined as a situation where there is at least one woman on the board of directors. Finally, the results when either the Shannon index or the Blau Indexes are used as proxies for board gender diversity are presented in tables 9 and 10. After performing Hausman tests the results showed that unobservable heterogeneity is correlated with the independent variables and that coefficients with fixed affects and random effects are different, thus only fixed effects were used for estimating coefficients in all of the models. Furthermore, all the results take into account possible endogeneity issues by using a 2SLS estimation procedure.

All the models, with different measures of gender diversity in corporate boards, show that there is a negative and significant impact of gender diversity on the performance of banks in Georgia. Overall, it can be said that all the positive aspects of gender diversity are outweighed by the negative sides. These results may be explained by the fact that women are still under-represented in high corporate positions at Georgian banks and thus have a position that can be seen as that of outsiders, and as a result their impact is still not positive. In the majority of the cases boards only have one woman among five to seven members, which means they have the status of a minority presence and thus in most of the cases a critical mass is not reached in females. This fact could lead to tokenism as explained by Kanter (1977). When there is less than 15% of representatives of one particular community in society they are seen as tokens - just representatives of a category rather than being there as an individual. As a result, tokens are assumed to have very little impact over the group or its culture (Jackson et al, 1995). In addition, another possible

explanation could be the existence of a glass ceiling. This argues that women can be promoted until only up to some point after which it's hard for them to move on as they face twice more barriers than man at the same level (Akpinar-Sposito, 2013). Lastly, a negative impact of women on firm performance could be caused simply due to lack of training and experience of female representatives throughout their career path. The financial sector is very specific and complex in comparison to other more female-oriented sectors and it demands a continuous self-development which sometimes is not possible for women due to the maternity leave and other household problems.

With respect to women's role on boards, the results are similar to those obtained by Ahern and Dittmar (2012), Sajjad and Rashid (2015) and Shrader et al. (1997). Their evidence suggests that female members of board of directors negatively impact on firm value. Even though Shrader et al (1997) didn't use only the banking industry the results are similar. Ahern and Dittmar (2012) examined the effect of introducing gender quotas in Norway after 2003 and found that the quota system led to a substantial decline in Tobin's Q. Sajjad and Rashid (2015) used the banking sector in Pakistan for their study and found evidence that a higher proportion of female and young board of directors leads to lower firm value.

Regarding control variables it can be noticed that bank age has a positive and significant impact performance. Hence, the evidence supports the idea that older firms enjoy better performance (Stinchcombe, 1965; Marshall, 1920). Moreover, leverage has a negative effect on ROA in all the models, a similar impact to that of board size in all three models except the second one when a dummy variable is used as a mesure of gender diversity. Finally, bank size, which is defined as the logarithm of total assets, has a positive impact on the performance of banks, a result is in accordance with the empirical evidence from Lee (2009) but which in our results is not statistically significant.

Table 7 – 2SLS panel data regression of bank performance according to the percentage of women used as the main measure of diversity

Dependent Variable: ROA
Method: Panel Two-Stage Least Squares
Sample: 2005-2014
Periods included: 10
Number of the firms: 22
Total panel observations: 176
Instrument specification: C LEVER LNAGE LNASSETS LNBOARD FOREIGN_SHARE_OWNERSHIP

Variable	Coefficient	Prob.
C	-27.10033	0.1389
% OF WOMEN	-74.83829*	0.0703
LEVER	-0.166174	0.1701
LNAGE	8.013611*	0.0952
LNASSETS	2.912741	0.1477
LNBOARD	-3.033334	0.3815

Notes: * Significance at the 10% level, ** Significance at the 5% level, *** Significance at the 1% level.
Variables: ROA (return on assets, approximation of bank performance), % OF WOMEN (percentage of women on the board of directors), LEVER (total debt over total assets), LNAGE (natural logarithm of bank age), LNASSETS (natural logarithm of total assets of bank), LNBOARD (natural logarithm of board size), FOREIGN_SHARE_OWNERSHIP (percentage of foreign investor's share ownership).

Table 8 – 2SLS panel data regression of bank performance according to binary variable that takes the value of 1 when there is at least one woman on the corporate board and 0 otherwise

Dependent Variable: ROA
Method: Panel Two-Stage Least Squares
Sample: 2005-2014
Periods included: 10
Number of the firms: 22
Total panel observations: 176
Instrument specification: C LEVER LN_AGE LNASSETS LNBOARD FOREIGN_SHARE_OWNERSHIP

Variable	Coefficient	Prob.
Constant	-56.6618**	0.0395
DUMMY WOMAN	-34.4423**	0.0243
LEVER	-0.11596	0.3678
LNAGE	8.890707**	0.0458
LNASSETS	4.783936	0.12
LNBOARD	0.871582	0.789

Notes: * Significance at the 10% level, ** Significance at the 5% level, *** Significance at the 1% level.

Variables: ROA (return on assets, approximation of bank performance), DUMMY WOMAN (binary variable that takes value of 1 when there is at least on women one board of directors and 0 otherwise), LEVER (total debt over total assets), LNAGE (natural logarithm of bank age), LNASSETS (natural logarithm of total assets of bank), LNBOARD (natural logarithm of board size), FOREIGN_SHARE_OWNERSHIP (percentage of foreign investor's share ownership).

Table 9 – 2SLS panel data regression of bank performance according to Blau's index used as the main measure of diversity

Dependent Variable: ROA
Method: Panel Two-Stage Least Squares
Sample: 2005-2014
Periods included: 10
Number of the firms: 22
Total panel observations: 176
Instrument specification: C LEVER LN_AGE LNASSETS LNBOARD FOREIGN_SHARE_OWNERSHIP

Variable	Coefficient	Prob.
Constant	-57.8748*	0.0673
BLAU'S INDEX	-109.421**	0.0202
LEVER	-0.1389	0.3689
LNAGE	13.3135**	0.0248
LNASSETS	4.888319	0.1949
LNBOARD	-2.52949	0.5254

Notes: * Significance at the 10% level, ** Significance at the 5% level, *** Significance at the 1% level

Variables: ROA (return on assets, approximation of bank performance), BLAU'S INDEX (Blau index of diversity), LEVER (total debt over total assets), LNAGE (natural logarithm of bank age), LNASSETS (natural logarithm of total assets of bank), LNBOARD (natural logarithm of board size), FOREIGN_SHARE_OWNERSHIP (percentage of foreign investor's share ownership).

Table 10 – 2SLS panel data regression of bank performance according to Shennon index used as the main measure of diversity

Dependent Variable: ROA		
Method: Panel Two-Stage Least Squares		
Sample: 2005-2014		
Periods included: 10		
Number of the firms: 22		
Total panel observations: 176		
Instrument specification: C LEVER LN_AGE LNASSETS LNBOARD FOREIGN_SHARE_OWNERSHIP		
Variable	Coefficient	Prob.
C	-56.46756*	0.0573
SHANNON INDEX	-69.5113**	0.0196
LEVER	-0.130947	0.3677
LNAGE	11.96015**	0.0261
LNASSETS	4.777932	0.1747
LNBOARD	-1.634265	0.6639

Notes:* Significance at the 10% level, ** Significance at the 5% level, *** Significance at the 1% level
Variables: ROA (return on assets, approximation of bank performance), SHANNON INDEX (Shannon index of diversity), LEVER (total debt over total assets), LNAGE (natural logarithm of bank age), LNASSETS (natural logarithm of total assets of bank), LNBOARD (natural logarithm of board size), FOREIGN_SHARE_OWNERSHIP (percentage of foreign investor's share ownership).

As mentioned in literature review number of women on board could make difference. For robustness check we ran another regression with the second dummy variable, which tests if presence of two and more women has the same impact on firm performance as a single woman. The results presented in table 11 shows that the number of women directors matter. In this case results are different from earlier observations. Two and more women on corporate board have positive and significant effect on the performance of Georgian banks. The results obtained support to critical mass theory and shows that when women don't have the status of a minority presence boardroom is more diverse and it can lead to better performance for firm.

Table 11 – 2SLS panel data regression of bank performance according to binary variable that takes the value of 1 when there are two or more women on the corporate board and 0 otherwise

Dependent Variable: ROA
Method: Panel Two-Stage Least Squares
Sample: 2005 2014
Periods included: 10
Number of the firms: 22
Total panel (unbalanced) observations: 176
Instrument specification: C LEVER LN_AGE LNASSETS LNBOARD FORAGNE_SHARE_OWNERSHIP

Variable	Coefficient	Prob.
C	34.2456	0.2241
DUMMY WOMAN2	31.78646*	0.0677
LEVER	0.122864	0.221
LNAGE	-3.951875	0.2809
LNASSETS	-1.639814	0.4746
LNBOARD	-12.22965*	0.0828

Notes: * Significance at the 10% level, ** Significance at the 5% level, *** Significance at the 1% level.
Variables: ROA (return on assets, approximation of bank performance), DUMMY WOMAN2 (binary variable that takes value of 1 when there are two and more women on board of directors and 0 otherwise), LEVER (total debt over total assets), LNAGE (natural logarithm of bank age), LNASSETS (natural logarithm of total assets of bank), LNBOARD (natural logarithm of board size), FOREIGN_SHARE_OWNERSHIP (percentage of foreign investor's share ownership).

5. Conclusions

This study started by analysing the existing literature on board diversity and then provided, to our knowledge, the first empirical evidence on the relationship between board gender diversity and company performance in the Georgian banking sector. In particular, it provides new insights about the Georgian reality by using a 10-year period sample from 2005 until 2015. Our research uses different proxies of gender diversity such as the percentage of women in the board, a binary variable which takes the value of 1 when there is at least one woman on the board and 0 otherwise, and two additional indexes of diversity – Blau and Shannon's indexes. By using panel data methodology and controlling for endogeneity the results show that corporate board gender diversity has a negative and significant impact on the accounting performance of banks measured by return on assets. However, if critical mass is reached gender diversity impact becomes positive and significant. This study will contribute to the scarce empirical evidence in the region and should encourage further discussion inside the country.

Overall, results show that there is still much that needs to be done towards the goal of gender equality in Georgian corporate boards. Their role needs to be empowered in society and top management positions as well by overcoming glass ceiling phenomenon and changing their status from being tokens into the real decision maker to becoming influencers and shapers.

One of the limitations of the study is that it covers only the banking sector in Georgia If other sectors are added, the observed results on board diversity and firm performance may vary. Moreover, it could be interesting to incorporate other control variables which at this time were not available due to the lack of corporate information. For future research it would also be interesting to investigate this topic for a larger-regional scale and comparing countries in the Caucasus region in terms of the characteristics of gender diversity in corporate boards and its impact.

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