Law and Economics Investigation of Boards of Directors and Performance of Companies

The case of female directors in Poland

"I HEREBY DECLARE AND CONFIRM THAT THIS THESIS IS ENTIRELY THE RESULT OF MY OWN WORK EXCEPT WHERE OTHERWISE INDICATED. I ACKNOWLEDGE THE SUPERVISION AND GUIDANCE I HAVE RECEIVED FROM... THIS THESIS IS NOT USED AS PART OF ANY OTHER EXAMINATION AND HAS NOT YET BEEN PUBLISHED."

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1. Introduction

The influence of the corporate board composition on performance of the company has attracted a considerable amount of attention from the law and economics as well as management literature. A large body of literature focuses on the impact of outside directors (MacAvoy et al. 1983; Hermalin and Weisbach, 1991), the size of the board of directors (Jensen, 1993) and directors’ age (Hermalin and Weisbach, 1991), to name just a few examples.¹ In the recent years there has been a growing interest in the issue of board diversity, widely defined as “the varied combination of attributes, characteristics and expertise contributed by individual board members” (Walt and Ingley, 2003, p. 219). This paper deals with the problem of gender diversity of the corporate board and its influence on the firm value.

The existing literature on the role of female directors in the effective functioning of the board is rather scarce and inconclusive. There is some empirical evidence that gender diversity improves the decision making process of the group. On the other hand, the appointment of a female director could have a negative effect if women were treated merely as “tokens” and were not appointed to the board on merits of their candidacy. Overall, the empirical evidence fails to provide a clear answer to the question of correlation between female directorships and firm performance.

The purpose of this paper is to analyse the short term effect female directors have on performance of the largest companies in Poland. In order to achieve this goal, the paper utilises the event study methodology to examine the stock return changes caused by the appointment of a female director. This method was

¹ For a survey of the literature see Hermalin and Weisbach (2003).
first used in the context of boards of directors and their impact on firm performance by Rosenstein and Wyatt (1990) to analyse the market reaction to an outside director’s appointment.

This paper attempts to make a few contributions to the existing literature. Firstly, it deals with the situation of female directors on boards of large Polish companies – the issue that has not been adequately researched so far. Most empirical studies devoted to gender diversity of the board and firm performance have been conducted based on data from common law countries and states with Anglo-Saxon corporate governance models. This paper examines the problem in the context of a country with a civil law system and a very young, fast-developing capital market. Secondly, it may cast some light over the political debate regarding the potential introduction of gender quotas on boards of publicly listed companies. Such proposal has emerged very recently, in the context of the 2010 presidential elections. Although at the moment the projects are very far from becoming the law, the experience of other European countries where such quotas were introduced makes it an interesting research topic also from the perspective of Poland. This paper tries to examine how the Polish financial market reacts to the increased gender diversity among the board members, which may be an important argument in the political dispute whether the country is ready for corporate quotas.

The results of the event study conducted for the purpose of this paper lead to the conclusion that female directors have an insignificant positive impact on the short term performance of companies. The announcement of a female board member’s appointment is linked to positive abnormal returns. Therefore, an important finding of this work is that greater gender diversity is, on average, viewed positively by Polish investors.
The structure of this paper is following. Section 2 discusses the percentage of female directors across different countries, with special attention being paid to the situation in Poland. Section 3 contains a brief review of theoretical models of discrimination against women in the labour market. In Section 4 the potential impact of female directorships is explained in relation to principal models of corporate governance. Section 5 provides a survey of the existing empirical research relevant to this paper. Sections 6 and 7 describe the event study conducted. The final section contains conclusions and suggestions as to potential policies that could be implemented in order to optimise women’s impact on company governance.

2. Women in the boardroom – basic facts

Despite the unquestionable progress that has been made in the field of women’s professional empowerment since the second half of the twentieth century, the position of women in boardrooms of the largest companies in the world is still unsatisfactory.

In the United States, the fraction of women board directors is relatively high. The steady growth in the number of female directors on boards of Fortune 500 companies has been closely observed since 1995 by the Catalyst – a think tank that monitors the position of women in the workplace. The organisation regularly publishes reports (Census of Women Board Directors of the Fortune 500), according to which the proportion of female board members in the largest American firms has grown from 9.6 per cent in 1995 to 15.2 per cent in 2009 (Catalyst, 2006, 2008, 2009). The Censuses reveal that the percentage of female directors
has been increasing very slowly – on average, 0.5 percentage points per year. The proportion of women in boardrooms of surveyed companies has not increased since 2008. The number of companies with no female representation has decreased from 13.2 per cent in 2008 to 12.3 per cent in 2009. However, at the same time, the number of companies with two female directors has slightly decreased from 36.6 per cent to 36.5 per cent (Catalyst, 2009).

In Europe, the percentage of female directors is visibly lower than in the US and, on average, oscillates around 10 per cent. According to the European Professional Women’s Network, 9.7 per cent of directors on boards of the 300 largest companies in Europe are female.\(^2\) The previous EPWN reports document a slow growth from 8.0 per cent in 2004 and 8.5 percent in 2006 (EPWN, 2006). Nevertheless, the data reveals that despite the increase in the proportion of women in the boardrooms, the number of companies with no female directorships remains relatively high, at 25 per cent (EPWN, 2008). The report also illustrates a very high degree of variation across European countries. The proportion of female directors ranges from as few as 0.8 per cent in Portugal to a record proportion of 44.2 per cent in Norway. The results from other countries are summarised in Figure 1.

\(^2\) The study only includes companies from Norway, Switzerland and the 15 countries of the EU before 2004 enlargement.
From Figure 1 it can be observed that the top of the list of European states with the highest fraction of female directors is occupied by four Scandinavian countries. Those results are reinforced by the fact that all the companies in Finland, Norway and Sweden have at least one woman on their boards. In Denmark the percentage of such firms, although lower than in the rest of Nordic states (83%), is still higher than in any other European country (EPWN, 2008).

The outstanding result of Norwegian boards of directors is the consequence of the recent legislation, which requires that all publicly held companies must abide by the 40 per cent gender quota for female board members. Despite the fact that the law was received with much criticism from the business community, the full compliance was achieved by April 2008. The opponents of the Norwegian model of gender quotas point out that the new regulations have forced many firms to resign their status as “public” companies in order to avoid being bound by the
quota requirement. Another consequence of the new law was the development of small elite of female board members who held multiple directorships. This could have a negative effect on firm performance as female directors may be distracted by having too many responsibilities.

Somewhat less radical steps were taken in Sweden, where the government has recommended that listed companies voluntarily increase the women’s participation on boards of directors to 25 per cent. Otherwise, the Cabinet in Stockholm would introduce legislation similar to gender quotas model in Norway.

The gender equality regulations were recently introduced also in Spain, where the proportion of female directors on boards of listed companies has traditionally been among the lowest in Europe. In 2006 only 4.1 per cent of Spanish directorships were held by women; in 2008 the number of female board members increased to 6.6 per cent. The new regulations, although focused on increasing women’s representation on political party election ballots, also contain requirements for companies bidding for public contracts. They provide that companies with higher female share of the total workforce should be given preferential treatment. The new legislation also recommends that such firms abide by the 40 per cent gender quota for women on boards of directors by 2015 (Campbell and Minguez Vera, 2010).

The problem of insufficient representation of women on corporate boards has also been acknowledged in the United Kingdom. The 2003 Higgs Report, prepared for the Department of Trade and Industry, proposes governance reforms that would focus on, *inter alia*, increasing the board diversity. The report calls for

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3 The number of “public” companies decreased from 6000 to merely 450 after the regulation came into life (Walat, 2010).
more transparent procedures for board members appointment and recommends that directors are elected from a wider pool of candidates, for example, from the non-commercial sector, were women are better represented on high level positions (Higgs, 2003, Art. 10.24 and 10.32). Regarding the reasons for the current under-representation of female directors, the report suggests that women are discriminated because of the lack of personal contacts with board members, who are mostly male.

The recommendations contained in the Higgs Report were analysed in more details in the following Tyson Report on the Recruitment and Development of Non-Executive Directors (Tyson, 2003). The report stresses the importance of fair gender composition of the board on performance of companies and reinforced the recommendations of the prior report. The Tyson review also proposes the creation of a high-visibility initiative that provides regular and reliable measures of board composition for individual companies, that monitors both progress on achieving rigorous and transparent processes for [non-executive directors] appointments and progress on building more diverse boards (p. 20). Tyson explains that the “initiative” could be similar to the American Catalyst, whose work has been quoted above. She believes that such an organisation, combined with media attention, could encourage the British companies to draw directors from a broader talent pool. Neither the Higgs report, nor Tyson consider the quota system as a possible solution to the problem of female under-representation on corporate boards.

2.1 Gender diversity in Polish boardrooms

Women have been very active in the Polish workforce since the end of the Second World War. Similarly to other countries of the Soviet Bloc, the fraction of
women in the workers pool was very high due to the industrialisation and the extensive growth model characteristic for the centrally planned socialist economies. The women employment rates in the 1960s and ‘70s were substantially higher in Poland, Czechoslovakia and the German Democratic Republic than in the Western European countries (Lisowska and Sawicka, 2009). Unlike in the Western World, where female employees increased their representation in the workforce on the wave of women’s rights movement, in Central and Eastern Europe women were encouraged by the government to work even in sectors that were traditionally considered to be “male,” particularly in the light industry sector. The state implemented policies that were meant to facilitate women’s vocational activity – free child care facilities, state-supported maternity leave schemes and parenting leaves (up to three years).

The economic transformations that followed the fall of communism in 1989 have resulted in the sudden rise of unemployment, a phenomenon unknown to the socialist society. The side effects of the market economy development were more severe for female workers than men. The light industry plants, where the majority of employees were female, were the first ones to go out of business in the new economic system (Lisowska and Sawicka, 2009). As a consequence, the unemployment rate among women rose faster and to higher levels than among men. It reached its apogee in 2003, when 20.3 per cent of women were unemployed, compared to 18.4 per cent of men. At that time only 38.4 per cent of the adult female population had work and women constituted 45.4 per cent of the workforce (GUS, 2010). The percentage of women in the total workers pool has not increased significantly since then; in 2010 (data for the first quarter) 45.8 per cent of all employees were women.
The participation of women in top management and boards of directors in Poland has not yet been a subject of thorough research. Moreover, there is no data regarding the proportion of female directors on boards of the largest companies listed on the Warsaw Stock Exchange (WSE). The results of the survey conducted by Adamska, Jarosz and Lisowska (2009) on the group of 100 medium and small companies (out of which only 65 were listed on the WSE) suggest that the rates of female representation on corporate boards in Poland may be above to the European average. The authors find that among the publicly held companies in the sample, the top and medium-level management is in 39 per cent comprised of women. The percentage of women at the very top of the corporate ladder (the CEO, deputy CEOs, directors on supervisory and management boards) in those companies is 19 per cent. The surprisingly high result, however, might be the consequence of the quality and small size of the sample. The authors also point out that many companies refused to participate in the survey (p. 97). The results of the empirical research contained in this paper suggest that the above numbers are not representative for the entire capital market in Poland. Nevertheless, more complex studies need to be conducted in order to ascertain the actual rate of female presence in corporate boardrooms.

Despite the inadequacy of the existing research, the issue of female participation on boards of listed companies (and public life in general) has been recently raised by feminist organisations in Poland. One of the recommendations of the 2009 Women’s Congress (a large nation-wide discussion panel organised by a number of women’s rights NGOs and think tanks) stresses the need for “persuading private companies to introduce quotas for high level management positions, including top management, through informing about the economic benefits that
result from gender diversity” (Raport Kongres Kobiet Polskich 2009, p. 101). Thus, this paper may be important in the light of the above recommendations as it examines the short term market reaction to the appointment of female directors.

The proposal contained in the Women’s Congress report gained significance in the context of the 2010 presidential elections, when the candidate of the ruling party expressed his support for the implementation of gender quotas on party election ballots. This initiated a heated debate over the possibility of introducing regulations similar to the Spanish model, which recommends gender quotas also for corporate boards. Although the coalition government and the largest opposition party did not consider such regulations, the project has the support of the third largest party – the Democratic Left Alliance, who are gaining popularity in the party preference polls. Therefore, it is not unlikely that the legislation similar to Norwegian or Spanish quota systems will be introduced in the future also in Poland. Thus, the study conducted for the purpose of this paper is of particular importance for the political debate that has already begun in the country.

Although there is no parliamentary legislation that requires gender diversity on boards of publicly held companies, the necessity of promoting female directors was recognised by the Warsaw Stock Exchange. In the very recent amendment to the WSE’s Code of Best Practice for Listed Companies (May 2010), Article 9 was added, which states that

*The WSE recommends to public companies and their shareholders that they ensure a balanced proportion of women and men in management and supervisory functions in companies, thus reinforcing the creativity and innovation of the companies’ economic business.*
The Polish wording of Article 9 is very delicate and presented in the form of piece of advice rather than clear requirement. It is also important to notice that the Article contains no definition of “balanced proportion” of genders on the board. Nevertheless, the new Code of Best Practice is the step in the right direction. The authorities of the WSE, in order to set a good example for the listed companies, themselves increased the proportion of women on the supervisory board to 43 per cent (3 out of 7 directors are now female). Furthermore, women have been given an equal representation on the management board – 2 out of 4 managing directors are female. At the high level management, female directors constitute 47.8 per cent (Adamska, Jarosz and Lisowska, 2009).

Another method of promoting gender diversity on boards of Polish listed companies is the creation of the Respect Index on the WSE. The index measures the stock prices of companies that meet the highest standards of socially responsible business practice, as defined by the Code of Best Practice. Currently there are 16 companies listed in the Respect Index. 10 of those firms are included in the sample of the study conducted in this paper.

To sum up, the path to equal work opportunities was different for Polish women than for female employees in most of the Western World. The emancipation of women in the workplace in Poland occurred relatively early because of the Socialist model of extensive growth. Despite the socialist tradition of the “female udarnik of labour” the position of female workers in the modern day market economy is visibly worse than the situation of men in the labour market. Although there is no conclusive data, the media and feminist organisation report that women

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4 In order to be listed in the RESPECT Index, a company has to be rated A in the Respect Rating prepared by the WSE in cooperation with the Polish edition of Forbes Magazine.
are under-represented in top management of most companies. This under-representation is particularly visible on boards of directors. Certain steps have already been taken by the authorities to support fairer proportion of women among board members – the socially responsible employers are being promoted and set as a good example by mass media and market institutions. The empirical study in this paper examines whether the Polish capital market has also started to appreciate gender diversity on boards of directors.

3. Sources of discrimination of women

The law and economics literature on the subject of discrimination in labour market is predominantly of American origin and, therefore, mainly focuses on racial and ethnic discrimination. However, the theoretical models of discrimination in the workplace can be easily interpreted in the context of female representation. For the purpose of this paper, it will be helpful to examine the basic law and economics theories of discrimination from such perspective.

3.1 The Becker taste for discrimination model

Gary Becker (1957) introduced the first economic model of discrimination. It assumes that an employer holds a “taste for discrimination”. When hiring a new worker, the employer whose taste for discrimination is greater than zero faces not only the cost of the wage, \( w \), but also pays the discriminatory psychic penalty, \( d \). For the last discriminated worker, the following condition holds:

\[
mp = w + d,
\]

where \( mp \) is the marginal productivity and \( d \) can also be described as the discrimination coefficient.
According to the above model, an employer who has an aversion towards female workers incurs higher cost employing women. This, in turn, has a number of implications on the position of female employees in the market. The effects of the employer discrimination in the Becker model can be illustrated by the classic supply and demand graph (see Figure 2).

Point A illustrates the short-term equilibrium for female workers in the perfectly competitive labour market. In such conditions, Q₁ women would work at wage W₁. Because of the employer’s taste for discrimination, less women are sought for in the market and the demand curve shifts downwards, as illustrated by the curve D₂. The distance AC represents the employer’s discrimination coefficient, d. As a result, both the number of female employees and their wages decrease from Q₁ to Q₂ and from W₁ to W₂, respectively. Therefore, the Becker taste for discrimination theory explains not only the lower rate in female employment in industries

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5 Alternatively, one could assume that, as a result of higher costs (to the employer) of employing a disfavoured worker, the supply curve shifts upwards.
where a prejudice against female workers still exists, but also the disparity in wages received by the two sexes.

Becker examines the short-term effects discrimination has on the disfavoured group. According to his model the discriminating employers are actually harmed by their taste for discrimination. For instance, Donohue (1987) asserts that the employer’s net profit (monetary profit minus discrimination coefficient) is larger in case of no discrimination than in the discriminatory model. It is, thus, claimed that in the long run such employers would be eliminated by more efficient non-discriminating competitors and that discrimination can only be maintained in cases of market failure (Posner, 1989).

3.1.1 The equilibrium search model

The Becker model was further developed by Black (1995) in his equilibrium search model. The model confirms that victims of discrimination may earn lower wages than comparable favoured workers whenever any prejudiced firms exist in the market. Additionally, the model shows that since the disfavoured workers face higher search costs for non-discriminating employers, they are more poorly matched, on average, than workers who belong to the preferred group (Black, 1995, p. 311).

In the equilibrium search model the population of workers can be divided into men \( (m) \) in the number of \( \lambda \) and women \( (f) \) who constitute \( (1 - \lambda) \) portion of available workers. There are also two types of employers: prejudiced ones who will favour \( m \) workers and pay the wage of \( w^m_p \) and unprejudiced employers, who will hire both \( m \) and \( f \) workers hired at wages \( w^m_u \) and \( w^f_u \), respectively. The first type of employers constitutes \( \theta \) portion of the population; the second type is \( (1 - \theta) \) fraction. The reservation utility of each worker is \( U_j(f = m, f) \). The utili-
ty employees receive from work depends both on wages and job satisfaction parameter $\alpha_k^i (k = u, p)$. The latter is a random variable with the distribution function $F(\alpha)$ and probability density function $f(\alpha)$.

When searching for employment, a worker will accept the job offer whenever $w_k^i \geq U_j - \alpha_k^i$. Workers look for employment sequentially, if the match is not made they incur cost $C$. In equilibrium point, the marginal worker is indifferent between accepting an offer and looking for another employer. For male workers the equilibrium is reached when:

$$C = \theta \left[ w_p^m + \frac{1 + \alpha_p^m}{2} - U_m \right] + (1 - \theta) \left[ w_u^m + \frac{1 + \alpha_u^m}{2} - U_m \right]$$

Women, on the other hand receive no utility from applying for jobs at discriminating firms, because such companies simply refuse to employ them. Therefore, equilibrium for female workers is:

$$C = (1 - \theta) \left[ w_u^f + \frac{1 + \alpha_u^f}{2} - U_f \right]$$

The search costs for female workers increase with the number of discriminating employers because women have to apply to a larger number of firms or invest in research of employers that are unprejudiced. This, in turn, reduces female reservation utility. In the equilibrium search model the employers recognise that disfavoured workers suffer from higher search costs and, therefore, gain a degree of monopolistic power. Knowing that women have a lower reservation utility allows the non-discriminating employers to offer women lower wages than male employees. As a result, if there remain any discriminating employers in the market women will still be discriminated even if they are employed by the unprejudiced firms.
3.4 Statistical discrimination

The theory of statistical discrimination stems from the asymmetric information literature. The model premises on the assumption that employers are unable to observe the true quality of the workers. Instead, their decision to hire a worker is based on observable attributes of the available employees, such as gender, race or ethnicity. Such decision is influenced by prior experience and beliefs about the expected ability of a given group of workers. Unlike the taste model, statistical discrimination does not require any implicit bias towards the disfavoured group on the part of employer, customers or co-workers but is simply based on stereotypes regarding the effectiveness of different types of workers. In cases where it is costly to predict individual productivity of each applicant, the employer finds it cost-effective to consider certain observable attributes of the worker. For example, instead of spending resources on researching the objective quality of different applicants, he may assume that female applicants are more likely than their male counterparts to quit or take a lengthy maternity leave and, thus, are overall less productive.

There are two branches of the statistical discrimination theory. In the first model, the productivity of workers differs depending on the group. In the second model, group productivities are equal but the inequality between different types of employees occurs.

In the situation in which different groups have equal underlying productivity, statistical discrimination leads to a true injustice among the population of workers. However, the full assessment of this type of discrimination’s outcome is relatively complex. Judging an applicant based on the average expected productivity of her group has two effects: it harms workers with the above-average produc-
tivity but, at the same time, it increases the chances of finding employment for workers below average. Therefore, the statistical discrimination model in its pure form fails to explain the occurrence of unequal pay for men and women.

The second branch of statistical discrimination differs from the above model in that there is a disparity in the mean productivity of favoured and disfavoured groups. Such differences can arise as a result of poorer education of the “weaker” group or because of certain physical characteristics of the workers. It may be that in some industries women are, on the average, less productive than men (for example in the case of hard physical labour in factories, mines, etc.).

Similarly to the first type of statistical discrimination, in this model the problem of underinvestment in training occurs. Workers have very little incentive to invest *ex ante* in human capital if they realise that *ex post* the employer will consider them to be merely average representatives of their group. Another negative outcome of this type of statistical discrimination model is so-called “stereotype threat”. Once employers begin to associate members of a given group with lower productivity, the performance of such workers may in fact worsen (Steele and Arronson, 1995). This functions like a vicious circle, in which employees conform to the negative stereotype. With time employers may develop a strong bias against such employees and then the situation conforms to the taste for discrimination model.

Schwab (1986) describes the model, where the victims of statistical discrimination can move to different labour markets which recognise their true individual productivity. The author uses self-employment as the most obvious example of such market. In the model, the most productive workers in the individual-
ised market would also be the most productive employees in a workplace that recognises only the average productivity. In such a case, some workers choose inefficiently to remain self-employed even if they could be more productive in the other job simply because the average wage is insufficient to compensate their performance. Schwab complicates the model by introducing the state of the world, in which the employers recognise types of the workers and the employee productivity differs between types. The employer will try to encourage the preferred applicants and reject the disfavoured ones. This may have a negative effect on the overall efficiency if the discouraged workers outweigh the favoured ones. To illustrate, if companies have a bias against female workers because they are statistically more likely to quit or use the maternity leave, it may induce women to become self-employed. Given that the more productive men may find it more profitable to work in the outside labour markets rather than move to jobs offered by statistically discriminating firms, the losses associated with driving women out will outweigh the possible gains.

3.5 Female behaviour

Apart from the theoretical models discussed above, an explanation of the female under-representation in the corporate world is provided by the growing literature in behavioural economics. It provides a substantial amount of research that demonstrates different behavioural patterns between men and women.

The study undertaken by Catayst (2002) surveyed Fortune 1000 CEOs and female executives at the vice president level and above in order to find the reasons for the apparent discrimination of women in the American corporate world. According to the survey, the barriers that prevent women from advancing in the workplace are the result of both organisational problems and negative atti-
tudes towards female employees. The most common issues quoted by the female participants of the survey are following: exclusion from informal networks, stereotyping, lack of mentoring, shortage of role models, commitment to personal or family responsibilities, lack of accountability on the part of senior leadership, and limited opportunities for visibility. Among the 120 CEOs surveyed, most of whom were male, the answers were fairly similar. However, more emphasis was put on problems such as lack of experience necessary for gaining a senior position (this answer was given by 90 per cent of CEOs and 79 per cent of female executives) and ineffective leadership skills (31 per cent of CEOs but only 16 per cent of female managers).

Two comments made by the participants of the survey are of particular interest here, as they provide some evidence regarding different behavioural patterns between male and female worker. For 57 per cent of surveyed female executives, the lack of awareness of organisational politics was a barrier. 51 per cent answered that different behavioural style was a crucial problem. Finally, 30 per cent of women (and the same fraction of CEOs) claimed that female employees simply lack desire to reach top levels of management. The above comments suggest that women have different approach towards their jobs. They also do not perfectly conform to the “traditional” organisational pattern, in which personal connections and competitive drive play important roles.

The recent developments in behavioural economics seem to confirm the above hypothesis. For example, Babcock and Laschever (2003) find that women, on average, earn less and do not advance as far as their male colleagues on the corporate ladder because they are unwilling to negotiate for higher pay or promotions. The authors place the blame for that situation on the Western corporate cul-
ture. They claim that women who are though negotiators are often perceived as too aggressive and difficult to work with and, therefore, disfavoured by employers. This, in turn, incentivises female employees to be more acquiescent in relations with employers and co-workers. Such trait, although allowing women to come across as more agreeable to employers at the early stage of employment, is considered inadvisable at top steps of the corporate ladder. Women simply seem to be too soft to assume roles in which negotiation skills and decisiveness are crucial.

Women also have different expectations from their careers. Although they appreciate the opportunities, they are much less likely than men to make work the number-one priority in their lives. Instead, women prefer to concentrate more on home life. This is evidenced by Hakim’s (2003) preference theory. According to Hakim, women, contrary to popular notion, do not value full-time employment more than their house-hold responsibilities. She quotes the results of the study, according to which women are three times less likely than male workers to consider themselves work-centred.

Hakim’s argument, although substantiated by reliable research, seems politically incorrect. The advocates of equal rights point out the fact that preferences of women are, to a considerable degree, shaped by years of anti-feminine bias in the labour market and misogynist culture in general. Nevertheless, many of Hakim’s results found confirmation in further social study researches.

That women are less competitive than men is confirmed by the series of studies conducted by Gneezy, Niederle and Rustichini.\(^6\) In the study conducted on

\(^6\) Gneezy, Niederle and Rustichini (2003), Gneezy, Rustichini (2004)
the group of over 300 university students, they established that the level of female competitiveness and performance depends on the gender composition of the group they were allocated to and the pay scheme. The participants of the experiment were divided into groups of six. Some of the groups consisted of three girls and three boys, others were single-sex. The experiment, in which students were supposed to solve maze puzzles, was divided into three different treatments:

Treatment one: piece rate payment – participant are anonymously paid for each puzzle solved.

Treatment two: competitive pay, mixed tournaments – only the participant who solved the most puzzles receives payment.

Treatment three: random pay – only the randomly chosen participant receives payment for each maze solved.

Based on the results of experiment, the authors observe that the performance of men and women is more-or-less equal in non-competitive environment (treatments one and three). However, in the mixed tournament the performance of men was significantly higher than the performance of women. Performance of men in treatment two was also higher than their results in the other two treatments. Women’s results remained constant despite the introduction of the competitive element.

In order to examine whether women are not competitive at all or they just refuse to compete with men, the authors compare the results achieved by female students in single-sex and mixed teams. They find that women perform better in single-sex competitive tournament than in non-competitive treatments. Also, the performance of girls in same-sex competitive teams is higher than in case of
same-sex non-competitive (piece rate) tournaments. Therefore, women do respond (significantly) to the competitive element. However, they can only compete against each other. In presence of male colleagues women have no competitive drive.

Another study by Gneezy and Rustichini (2004) was conducted on a group of school children, all 9-10 years old and sought to test whether the lower competitiveness of women is due to socialisation at the teenage years, or to earlier stage of personal development. The experiment was conducted during the physical education class, in which pupils were supposed to run twice over the distance of 40 metres. During the first run each student ran by him/herself and their times were measured. Then some of the students were matched in pairs, starting with the two fastest results and moving down the list, so that each pair consisted of more-or-less equally fast children. In the second run, some students ran competitively in the assigned pairs, each couple at a time. There was also another group of children that ran alone again.

The authors find that children in a non-competitive group (12 boys and 12 girls who ran alone twice) showed, on average, a slight improvement. The performance of boys did not improve significantly more than that of girls. In the competitive group there were 116 students: 63 boys and 53 girls. After the second run, boys improved their time slightly, while girls ran slower. The difference between the changes in performance by gender was significant. Gneezy and Rustichini also compare the change in times according to gender composition of the pairs. They find that in the same-sex pairs girls’ results were worse than in the first round; boys, on the other hand, improved significantly. In the mixed pairs, 73 per cent of boys who were classified lower than their girl rivals after the first
round managed to catch up in the second run. For girls this percentage was much lower – only 17 per cent.

Those results seem to reconfirm the finding of the previous study conducted by the authors. Again, competition turned out to improve performance relative to non-competitive environment for males but not for women. On the contrary, this time the performance of girls deteriorated after introducing the competitive element. Gneezy and Rustichini claim that it might have been an effect of other boys and girls in the class observing the competition (p. 380).

The insights from behavioural economics may provide a new perspective on the problem of female under-representation in the business community. On the one hand, it may prove that the “unfair” representation of women on board of companies is a result of different expectations women have from their career. On the other hand, it unveils that the mechanisms of business and company organisation discriminate women, as they fail to accommodate their different behavioural patterns.

**4. Female impact – theoretical approach**

Before conducting the event study, it is appropriate to predict the impact female appointments to boards of directors could have on performance of companies. To do so, it will be useful to discuss the potential outcomes in the context of leading theories of corporate governance, namely the agency theory and resource dependence theory.⁷

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⁷ Francoeur et al. (2008) discuss agency model and stakeholder theory. However the resource dependence model is more accurate as it covers links that female directors establish with other resources.
4.1 Agency theory

Agency model is the classic theoretical paradigm that dominated corporate governance research and understanding. The theory stems from the famous work of Adam Smith, who as early as 1776, described the problem of conflicting interests that arise as a result of separation of ownership and control. The modern agency model was designed by Berle and Means (1932), who assert that the separation may allow managers to pursue their own interests at the expense of profit-maximisation. This creates agency costs. Drawing on the insights from the information asymmetry theory, Jensen and Meckling (1976) formalised the model and showed that agency costs are an inevitable effect of ownership-management separation.

One of the most obvious implications of agency theory is that efficient monitoring is necessary to ensure that the activity of management aligns with the interest of the owners. In the modern corporate setup, it is the board of directors that fulfils the role of the monitor. Boards control managers (“agents”) on the behalf of shareholders (“principals”). The specific monitoring activities available to boards of directors typically include: direct monitoring of the CEO (Daily, 1996), controlling the implementation of corporate policies (Rindova, 1999), appointing new CEOs (Pitcher, Chreim and Kisfalvi, 2000), evaluating the CEO and top management and setting the level of compensation for top management (Conyon and Peck, 1998).

In order to ensure that the board makes the best use of the monitoring instruments, it is crucial to ensure that directors have adequate incentives to hold management accountable. The majority of researchers agree that the above condition is satisfied if the board has a high proportion of independent and outside di-
rectors (Barnhart, Marr and Rosenstein, 1994; Weisbach, 1988). It is argued that independent and outside directors (i.e. the ones that have no prior personal or business relationship with the CEO or the company), are better incentivised to control the activity of top management. Since better monitoring leads to lower agency costs, increasing the fraction of independent directors in the boardroom may have positive effects on the financial performance of the firm. The above hypothesis is confirmed by some empirical studies, which establish a positive relation between the proportion of independent directors and economic performance of companies.8

The predictions regarding the impact of independent directors on the performance of companies are important in the context of this paper because women are more likely to fit the description of “independent” members of the board (Carter, Simkins and Simpson, 2003). Women bring to the boardroom non-traditional experience and characteristic, thus, they can be considered the “ultimate outsiders” (p. 37). They are inclined to ask questions that would not have been asked by male colleagues, which makes them more activist directors.

Whether there exists any correlation between female directors and the level of monitoring activity of the board was examined recently by Adams and Ferreira (2009). They find that women have positive influence on observable board inputs: attendance and committee assignments. Based on the large sample of American companies, the authors report that female directors are 30 per cent less likely than men to have attendance problems.9 Furthermore, they find that women

8 See Hermalin and Weisbach (2000) and Bhagat and Black (1999) for a survey of the evidence on corporate boards.
9 They control for other director characteristics: independence, age, tenure, number of directorships – females simply behave differently than men.
have a positive impact on attendance of male directors. The more females sit on the board, the smaller number of male attendance problems. This is very crucial for effective functioning of boards because high attendance rates guarantee that directors obtain the information necessary to monitor the management. Adams and Ferreira also examine whether female directors are more likely to sit on committees that are crucial for monitoring. They discover that women are 5.2 percentage points more likely than men to be members of audit committees. Female directors also have higher membership rates at nominating and corporate governance committees (2.0 and 5.1 percentage points, respectively). Men are more likely than women (3.3 percentage points) to sit only on compensation committees (p. 300).

In order to check whether the above findings translate into observable governance actions, Adams and Ferreira examine the potential correlation between female directors and boards’ decisions to dismiss CEOs. According to Weisbach (1988), the sensitivity of CEO turnover to stock return performance is a measure of the level of monitoring by the board. The authors also test gender diversity’s impact on the fraction of equity-based compensation for directors and the CEO because such scheme provides more performance-based incentives. The results show that the fraction of female directors considerably increases the sensitivity of CEO turnover to fall in stock performance. This effect is more robust for women than independent directors. Having controlled for the fraction of female directors, the authors discover that director independence has almost no impact on the performance-turnover sensitivity. Thus, women appear to be stricter monitors than men. They are also found to force more equity-based pay for directors. However, the authors failed to establish the correlation between female directors and
equity-based compensation for CEOs. This may be explained by the fact that women, as mentioned above, are less likely to sit on compensation committees, which are responsible for determining CEO compensation. The director pay is usually designed by corporate governance or nominating committees. This explains why the fraction of women is correlated to director (but not CEO) pay (pp. 303-304).

4.2 Resource Dependence Theory

The resource dependence theory maintains that the board of directors is the link between the company and the essential resources that are necessary to maximise performance. There is no single definition of what constitutes “essential resource.” The broadest definition of the concept was given by Wernerfelt (1984, p. 172), who described it as “anything that could be thought of as a strength or weakness of a given firm.” This functional approach was followed by the literature. Specific resources studied due to their potential value to the company included, inter alia, finance and capital, information, access to crucial suppliers, customers and competitors (Hillman and Dalziel, 2003). Although the specific value of a given resource varies depending on the firm and market situation, the resource dependence theory predicts that the board with a larger number of connections to the outside environments is more effective in providing the company with necessary resources. This, in turn, has a positive effect on firm performance as the access to resources reduces company’s dependency from external actors and lowers transaction costs (Williamson, 1984).

Pfeffer and Salancik (1978) categorise the board’s provision of resources into specific functions of the corporate board. In their model there exist four pri-
mary benefits that the board can provide to its company: advice and counsel, legitimacy (here discussed in terms of company reputation), channels for communications with external organisations and access to strategically important resources outside the company.

The resource dependence theory predicts that greater gender diversity of the board can improve the provision of the above benefits and, consequently, positively impact firm performance. Women have a positive influence on board’s human and relational capital. Human capital of the board encompasses directors’ experience, reputation and knowledge (Coleman, 1988). Relational capital is the value of “resources embedded within, available through and derived from the network of relationships possessed” by the directors (Hillman and Dalziel, 2003, p. 386).

Board capital is crucial for effective functioning of resource provision by directors. More gender diverse boards bring wider experience and a fresh perspective to the boardroom (Tyson, 2003), which allows directors to provide more high-quality solutions to problems than homogenous groups (Milliken and Martins, 1996). Research suggests that the above relationship is true. In the study conducted by Hoffman and Meier (1961) it was discovered that heterogeneous groups are much more likely to generate new, modified or integrative approaches to a given problem than homogeneous teams. The authors suggest that mixing sexes in a group helps its members to free themselves from “the restraints of the solutions given in the problem” (p. 404).

Diverse groups were also found to be more creative in the research of Nemeth (1986). Her study is based on the experiment in which participants were
presented with a string of 10 letters and were supposed to create as many words as possible. Individual strategies of dealing with the task were observed and the participants were divided into two types of teams: homogeneous (in which all members followed the same strategy) and heterogeneous (in which some minority participants were present). Nemeth finds evidence that minority members bring more alternative views to the attention of the team. Groups that were heterogeneous made higher-quality decisions because “non-traditional” views allowed for a thorough examination of potential scenarios (Nemeth, 1986). Therefore, it is not necessary for alternative views to prevail for the quality of team decision to increase. The mere exposure to minority opinions improves the decision-making process.

There also exist some arguments to suggest that increased diversity of a group can negatively affect communication between its members. Earley and Mosakowski (2000) argue that members of homogeneous teams maintain more frequent communications and are more cohesive. Williamson and O’Reilly (1998) claim that less diverse groups have less emotional conflicts and, as a result, tend to be more cooperative. Lau and Murnighan (1998) conclude that if gender diversity increases the number of conflicting opinions, the decision-making process becomes more costly and time-taking.

The above line of argumentation can be dismissed on two grounds. First, the counterarguments relate to group dynamics rather than decision-making ability of the group. It is not unlikely that female representation on boards improves group decision-making at the expense of group dynamics (Erhardt, Werbel, Shrader, 2003). Second, the arguments quoted in the paragraph above relate to groups that are excessively heterogeneous. There exists, however, a considerable amount of research that deals with the negative effects of complete homogeneity
of the group. It is suggested that excessive preoccupation with team cohesiveness may lead to the emergence of the “groupthink” phenomenon – the absence of critical thinking (Cox and Blake, 1991).

Eisenhardt, Kahwajy and Bourgeois (1997) confirm that in order to exploit the advantages of diversity, the group needs to be able to discuss problems in a meaningful way. This would suggest that it is not enough to simply introduce more gender diverse boards to increase firm performance; it is also necessary to make sure that women sitting on boards are able to express their opinions and share experience freely. If female directors were marginalised and treated merely as “tokens,” there would be no reason to assume that increasing female representation on corporate boards would enhance the quality of decision-making.

Overall, gender diversity can positively impact the creativity of the board and generate more high-quality solutions to problems. However, the need for heterogeneity of corporate boards has to be balanced with the need for group coherence and unity. The full use of women’s ability to improve decision-making process also requires that female directors are allowed use their unique experience in practice. Therefore, skilful management is necessary for diverse board’s potential not to be wasted.

Another prediction made under resource dependence theory is that more diverse boards may improve firm performance by providing legitimacy and good reputation. Bazerman and Schoorman (1983) argue that firm’s reputation “can be affected by who serves on the board of directors and to whom the organisation is seen to be linked” (p. 211). This on its own may enhance company’s performance (Hillman and Dalziel, 2003, p. 387).
Good reputation resulting from higher board diversity can also increase company’s attractiveness among the most productive employees. To use resource dependence nomenclature, female directors function as the link between the company and human resources. This is especially important in the context of modern labour markets, in which women have been systematically increasing their proportional representation in the workers pool over the last decades (Higgs, 2003, 10.22). It is crucial for companies to attempt to attract and retain the most skilful employees in order to be successful. The societal and media pressure for more equality also plays a role. It becomes more and more common for newspapers in many countries to publish ranking of “best workplaces” for female employees.¹⁰ Such accounts usually contain the information regarding the number of female directors. By having women in the boardroom, a company may increase its reputation and trust amongst ambitious female workers. The impact of this growing awareness has already been recognised by major companies in America, such as Xerox, Syntex, Hoffman-La Roche and Hewlett-Packard. Those firms started to use favourable publicity to recruit high-quality female applicants (Cox and Blake, 1991).

Another aspect of female directors’ impact on the quality of workforce is the creation of role models for women. In the Catalyst (2002) study quoted in the previous section, the lack of role models was indicated by female employees as one of the most important barriers to career development of women. Many participants of the survey claimed that women do not progress as far as men up the corporate ladder because they are unaware of the opportunities that are available to them. Having more female directors on boards could change the situation. As

¹⁰ In Poland such account is compiled every year by Hewitt Associates and receives a large amount of attention from the press.
mentioned above, many female employees are diverted into areas such as human resources and public relations, from which it is much more difficult to climb the ladder to the very top. Perhaps having more women as directors would raise awareness of female employees as to possible career tracks and induce career-oriented women to take up employment in less “traditionally female” fields.

More diversity in the boardroom could help not only attract new employees but also retain already employed workers. According to Cox and Nkomo (1991), women most often quit jobs out of frustration over finding adequate career opportunities and advancing to higher positions. This finding relates to the aforementioned problem of insufficient role models for female employees. Another explanation for this problem is the lack of appropriate counselling and feedback for women. It is estimated that feedback given to male workers is up to three times lengthier than that received by women (Robinson and Dechant, 1997, p. 25). Gender diverse boards are more likely to attempt to remedy the situation because female directors are more aware of the scale of the problem in a given company. Therefore, the gender diverse board is more plausible to force the implementation of counselling and feedback schemes that will be equally helpful for men and women.

Apart from providing access to high-quality human capital, women on boards can provide a company with the link to a wider spectrum of consumers. The reputational bonus from having gender diverse board may be used by the company to market itself as a socially responsible organisation. Some consumers, especially but not exclusively, women, may find such information an important factor when deciding about a purchase of products or services. Alternatively, they may prefer not to buy from firms that are known to discriminate.
Gender diversity also increases board’s understanding of the consumer market. Female directors are more likely to possess the experience and knowledge necessary to fully comprehend certain specific aspects of market for products and services addressed to women. Robinson and Dechant (1997) argue that successful companies might find it necessary to make sure that their workforce reflects the consumer base (p. 26). Thus, a fairer representation of women seems to be inevitable, especially for companies that depend on female consumers.

Female directors can also be responsible for the improvement in company’s relations with external environments, in particular, the government. Hillman, Zardkoohi and Bierman (1999) find that shareholder value is positively affected when company’s board develops connections to the U.S. government. In their study, they examine personal relations between directors and administration officials. It is suggested that such connections allow better information exchange and a potential influence with the government. Female directors would have more indirect impact on the improvement in company’s relations with the authorities. Having gender diverse board would increase company’s legitimacy in the eyes of the government. Such hypothesis finds confirmation in the recent reforms in Spain, where the cabinet proposed the preferential treatment in public offerings for companies with fair female representation on the board. Similar steps were taken by the Swedish government. Of course, this effect of gender diverse boards would only occur in countries where the government supports the fair representation policy. It would also be of importance to companies that possess gender diverse boards during the transition period. Once all the companies meet the requirement for gender diverse boards, there is no reason to suspect that the above hypothesis would hold.
To sum up, the resource dependence theory predicts that the increased representation of women in boardrooms can affect performance of companies in a number of ways. Firm performance is improved by gender diverse boards due to improved decision-making and problem-solving processes. Female directors also allow the company to establish the link with high-quality human capital and consumers. Thanks to that, the company can sustain competitive advantage.

4.3 Other predictions

Another powerful theoretical argument in support of higher female representation in the boardroom was supplied by Cox and Blake (1991). The authors suggest that companies which are more successful in managing diversity are simply more cost-effective. They point out that so far firms have not been managing female workers as well as their male colleagues. The data reveals that turnover and absenteeism rates are, on average, much higher for women than men (p. 48). Although it is common to ascribe higher employee turnover rates among women to pregnancy and family matters, the research shows that those rates are higher for female employees at all ages.

Cox and Blake quote results of the research that examined the effects of “accommodation schemes” designed by some companies to support pregnant workers. The analysis proves that such policy lowers the level of absenteeism among female employees. Furthermore, accommodating pregnant women in the workplace increases the number of overtime hours taken those workers (1991, p. 47). Similar results can be found in the study by Youngblood and Chambers-Cook (1984), who find that the absenteeism of mothers is reduced by 38 per cent in comparison with male workers if the company provides child care facilities.
The accommodation of female employees is not costless for a company. It may be too expensive for small and medium-sized firms to run child care centres for their employees. Thus, the solutions suggested by the studies quoted above are more appropriate for large companies. However, even for those firms cost savings from organisational changes need to be balanced with investment costs. Cox and Blake insist that, given the reduction in absenteeism and employee turnover rates and the increase in productivity due to higher levels of workers’ satisfaction, large companies will usually find it profitable to accommodate female workers’ needs (1991, p. 48).

Female directors can benefit the company because they are potentially more likely to realise the existence of the problems described in this section. They are, therefore, more prone to push for organisational changes that amend the situation of women working in the company. This argument also relates to the issue of appropriate female role models and gender diverse boards’ ability to retain employees, which were mentioned in the previous subsection.

To conclude, female directors may positively impact the performance of companies in a number of ways. Both the agency model and resource dependence theory predict that women improve the quality of corporate governance through tougher monitoring of management and ability to provide key resources. Female directors improve firm performance indirectly – by increasing the reputation of their organisation. The presence of female directors created positive externalities by stimulating the productivity of others and, in some cases, allowing for better
relations with the government. Women in the boardroom can also lead to substantial cost savings as they are more aware of problems faced by female employees.

The insights from theoretical models reviewed in this section suggest that the markets should reward companies with higher proportion of female directors. Such firms should, at least in light of the above, perform better in terms of financial outputs and investors should value them more. The following section deals with the empirical research of boards of directors and performance of companies.

5. Prior empirical research

The research of boards of directors and firm performance has so far focused on numerous board characteristic including the size of the board, the number of independent or outside directors, the level of inside director ownership, the frequency and structure of board meetings and the board committee setup. The investigation into gender diversity of the board and performance is sparse. Most attention in the empirical literature is devoted to the role of independent and outside directors in relation to firm value. As mentioned in the previous sections, those studies can be of some relevance to the analysis of female directors’ role because women in the boardroom tend to behave similarly to outside or independent members.

The results of investigations of independent directors’ influence are inconclusive. There is some evidence to support the hypothesis that independent board members improve firm performance. In one of the first studies devoted to the subject, Baysinger and Butler (1985) find that firms with a larger number of independent or outside directors tend to outperform companies with boards dominated
by insiders. However, they also discover that the excessive independence of the board may lead to opposite results, as too much monitoring is detrimental to effective functioning of the firm. Rosenstein and Wyatt (1990) use event study methodology to examine capital market’s reaction to increase in the number of independent directors on the board. They discover a small increase in stock price after the announcement of an outside or independent director’s appointment. On the other hand, Yermack (1996) and Bhagat and Black (1999) find a slight negative correlation between firm performance and the level of board independence. There also exist a number of studies that establish no such link. Hermalin and Weisbach (1991) compare the fraction of independent board members to a relative measure of Tobin’s $q$ and find no relationship between the two. Also Hermalin and Weisbach (2000) argue that, overall, there is no hard evidence to suggest that board composition has any relation with firm value.

MacAvoy and Millstein (1999) claim that the mixed results are caused by the fact that many of the above studies examine the period when board were passive and marginalised by the management. They also criticise the proxies for board independence that were used in the previous literature. The authors find positive correlation between the presence of outside directors and company’s financial value after conducting a sophisticated multivariate regression analysis.

A large amount of research addressing the issue of diversity and corporate performance is not limited to gender diversity but also includes age and ethnicity of employees. The majority of the studies analyse the impact of diversity on functioning of groups in general. The examples of such research on heterogeneous groups were cited in the previous section. This section concentrates on literature that deals specifically with the impact of diversity in the corporate context.
For example, Shrader, Blackburn and Iles (1997) examine the organisation-wide gender diversity and performance (as proxied by two accounting measures: return on assets and return on equity) for a sample of 200 large American firms. They discover a slight positive effect of the overall workforce diversity. However, the analysis of top-level management and boards was inconclusive on the issue. The impact of diverse workforce is also examined by Richard (2000), who researches the correlation between (widely defined) diversity and performance of companies in the American banking industry. He reports a positive relationship between diverse workforce and performance measured by return on equity.\footnote{11}

Recently, the empirical literature has experienced an increased interest in the research on general diversity of corporate boards and firm performance. The first evidence examining the relationship between board diversity and financial value of companies comes from Carter, Simkins and Simpson (2003) and Erhardt, Werbel and Shrader (2003). Based on the sample of 638 Fortune 1000 firms, Carter et al report a significant positive relationship between the number of female and minority board members and firm performance as measured by Tobin’s $q$. Similar results were achieved by Erhardt et al, who examine the correlation between board diversity and firm’s return on asset and investment.

The empirical literature on workforce diversity and firm performance outside the US is very thin and limited to Scandinavian companies. Du Rietz and Henrekson (2000) examine a large sample of 4200 Swedish entrepreneurs (small companies employing no more than 20 workers). They discover that women underperform relative to male entrepreneurs when the data is analysed at the most

\footnote{11 Only 25 Fortune 500 firms were considered in the study.}
aggregate level. However, the multivariate regression analysis with a large number of controls reveals that there is no underperformance in three out of four performance variables. The authors find no significant difference between male and female level of company profitability. Another study from Scandinavia was conducted by Smith et al. (2005), who analyse the influence of female directors and top executives on performance of 2500 largest companies in Denmark. Their results establish that performance increases with the proportion of women in top management. The authors also assert that the positive effect is only valid for female board members with university degrees. The correlation disappears when female directors have no higher education. Surprisingly, the authors find that the positive impact on performance is only observable for female directors who represent employees on the board. Other female board members are found to have negative influence on performance. The authors explain this finding by the fact that female directors who were not elected by the staff are usually inside dependent directors – they have family ties with company owners.

Thus, overall, their results are inconclusive.

The few studies that specifically explore female directors and firm performance are very recent and do not provide a conclusive answer to the question of female directors influence on firm performance either. Francoeur, Labelle and Sinclair-Desgagne (2008) examine the sample of 500 largest Canadian companies. They conduct a multivariate analysis based on Fama and French (1992, 1993) valuation framework to examine whether an increased number of female directors on the board brings any significant monthly abnormal returns. They find no such correlation. Similar results were shown in the study by Farrell and Hersch (2003). They conduct an event study of a sample of 309 Fortune 500 American companies to examine whether the appointment of a woman as the board director is re-
flected by occurrence of abnormal returns. They find no significant stock market reaction.

Adams and Ferreira (2009), whose research on indirect impact of female directors on board performance has already been quoted above, test for both direct and indirect correlation between gender diversity and firm performance. Although they find that through indirect influence women improve monitoring and decision making, the multivariate regression with a large number of controls reveals a negative relationship between the fraction of female directors and Tobin’s $q$. The authors suggest that their findings show that increased monitoring achieved through higher women’s participation on the board can decrease shareholder value. In their prior paper, Adams and Ferreira (2007) show that greater activism of the board may worsen communication between directors and top management. Given that the predictions regarding women’s behaviour patterns are right, Adams and Ferreira’s line of argumentation may hold.

Bøhren and Strøm (2007) provide evidence from the research of companies listed on the Oslo Stock Exchange. They find that higher board diversity is negatively related to performance in a statistically significant way. The authors explain their findings by the deterioration in board’s decision-making process allegedly caused by higher diversity of board members. Rose (2007), who examines gender diversity on boards of all Danish firms listed on the Copenhagen Stock Exchange, finds, contrary to his own hypothesis, no correlation with company performance (as measures by Tobin’s $q$). As a potential explanation for his results, Rose argues that there might exist “a process of socialisation where the unconventional board members have adopted the behaviour and norms of the conventional board members/business leaders” (p. 411). Both Bøhren and Strøm and Rose’s
explanations do not seem convincing in the light of the literature discussed in the previous section. Perhaps a more plausible justification for the lack of positive results in Scandinavian research would be the argument proposed by Adams and Ferreira (2009) that female directors only increase the value of companies that need additional monitoring. It is possible that in the Scandinavian model of corporate governance, where shareholder rights are well protected, the appointment of more gender diverse board members leads to an excessive level of monitoring and, therefore, has a neutral or even negative effect on firm performance.

In a very recent study of female members of the board and performance of companies in Spain Campbell and Minguez Vera (2010) attempt to predict market reaction to the implementation of the 2007 Gender Equality Act by the Spanish parliament. They analyse both the short and long term effects of the appointment of female directors to boards of companies listed on the four stock exchanges in Spain. Short term effects are assessed through an event study; long term influence on firm value is examined in a multiple regression analysis. The authors find that the announcement of female director’s appointment causes a positive stock market reaction. The results are reconfirmed by the regression analysis, which reveals that women in the boardroom have a positive and significant impact on long term firm value.

To sum up, the existing empirical research does not provide a conclusive answer to the question of female directors’ influence on firm performance. The majority of studies have been conducted in countries with Anglo-Saxon corporate governance systems. Therefore, based on the prior empirical literature, it is impossible to predict the outcome of the investigation of women’s impact on per-
formance of Polish companies. The following section discusses data sources and the empirical methods applied in this work.

6. Data and methodology

6.1 Data

The initial sample for the empirical part of this paper consists of an unbalanced panel of companies listed on the Warsaw Stock Exchange WIG20 and mWIG40 Indices (the Index of 20 largest and 40 medium companies, respectively). The study also includes companies that between 1995 and 2010 issued Global or American Depositary Receipts (GDRs or ADRs) on stock exchanges outside of Poland, mostly in New York and London, but also in Frankfurt. Those companies tended to be the most internationalised ones. They were also the first ones to introduce good governance codes that were required from the foreign stock exchanges. In total, the sample consists of 68 companies, which represent approximately two-thirds of the market capitalisation of all companies listed on the WSE.

The data identifies all female directors on supervisory and management boards of the companies included in the sample. Because there is no database similar to the American ExecuComp available for the Polish stock market, the information regarding the composition of boards of directors for the years 2000-2010 was gathered based on the materials published by the companies on their websites. The gender of most directors was determined based on their names; for the remaining it was necessary to consult the additional information (biographical notes, photographs) provided by firm websites or the press. Through this research the total of 134 female directorships was identified. Out of that number, 65 wom-

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13 The corporate model in Poland assumes the operation of two-tier board system. Supervisory boards consist exclusively of non-executive directors, while top management of the company sits on the management board.
en held directorships in June 2010. The summary of the data collected is presented in the following section.

In order to carry out the event study the announcement dates of the female directors’ appointments that occurred from January 2000 to June 2010 were collected. The dates of appointments that took place after January 2007 were obtained from the Official Appointed Mechanism (OAM) database of the Polish Financial Supervision Authority (Komisja Nadzoru Finansowego). For earlier appointments, it was necessary to consult firm websites, financial newspaper archives and investor services available on the Internet.

Finally, daily stock price data was used to calculate stock returns for the companies in the sample. This data was obtained from the WSE online database. After matching the stock data with the announcement dates of female directors’ appointments, the sample was limited to 102 observations.¹⁴

The number of appointments of female directors in the final sample across years is presented in Figure 3. The data for 2010 includes all the appointments of women board members that were announced no later than June, 10th. The sample contains no female director appointments for years 2000-2001 – they were eliminated from the initial sample due to the lack of adequate stock price data or announcement information.

¹⁴ This is due to the fact that some women held directorships of companies before they went public. Also, the announcements which only renewed directorships already held by women were ignored.
6.2 Women in Polish boardrooms – descriptive statistics

Consistent with the findings from other countries, the data collected in this paper suggests that women are highly underrepresented on boards of publicly listed companies in Poland. Gender diversity across 68 firms in the sample is reported in Table 1. It shows that the average board consists of 10.5 men and 0.95 women. Thus, women constitute 8.3 per cent of directors in the sample. Among directors on supervisory board there is, on average, 0.63 women and 6.5 men (which translates into 8.8% of women on supervisory boards). On average, women constitute 0.32 executive directors, as compared to 4.0 directorships held by men (7.5%).

<p>| Table 1. Gender diversity on boards of Polish companies |
|---------------------------------------------|-----------|----------|
| | Total  | Male     | Female   |
| Average number of relevant directors       |          |          |
| Board total                                | 11.45    | 10.5     | 0.95     |</p>
<table>
<thead>
<tr>
<th></th>
<th>Supervisory board</th>
<th>Management board</th>
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<tbody>
<tr>
<td></td>
<td>7.13</td>
<td>6.5</td>
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<tr>
<td></td>
<td></td>
<td>0.63</td>
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<tr>
<td></td>
<td>4.32</td>
<td>4.0</td>
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<tr>
<td></td>
<td></td>
<td>0.32</td>
</tr>
</tbody>
</table>

### Number of firms with at least one relevant director (%)

<table>
<thead>
<tr>
<th>Board total</th>
<th>68 (100%)</th>
<th>68 (100%)</th>
<th>46 (67.6%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisory board</td>
<td>68 (100%)</td>
<td>68 (100%)</td>
<td>33 (48.5%)</td>
</tr>
<tr>
<td>Management board</td>
<td>68 (100%)</td>
<td>68 (100%)</td>
<td>20 (29.4%)</td>
</tr>
</tbody>
</table>

In June 2010 there were 31 firms (45.6%) in the sample that had one female director on the board, 11 companies (16.2%) had two women on the board and only in 4 companies (5.9%) there were three female directors. 22 firms (32.4%) from the sample had no female representation on the board of directors. The number of companies that had no history of female directorship between 2000 and 2010 is 12 (17.6%). The company with the highest fraction of female directors in June 2010 had 3 women on the board of 10 directors (2 female members of the supervisory board of 6 directors and 1 female executive director in a team of 4).

The variation of board diversity across sectors is presented in Table 2.\(^\text{15}\) It shows the variation in board size (total number of directors) and gender composition. The average number of female directors varies from 4.76 per cent in hotels and restaurants sector to 14.29 per cent in chemical and pharmaceutical sector. It seems surprising that the proportion of female directors is smaller in consumer

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\(^{15}\) The companies were assigned to sectors following the classification of the Warsaw Stock Exchange.
oriented sectors than in oil and gas or chemical and pharmaceutical sectors, where
the proximity to the customer is low. One possible explanation is that consumer
oriented industries are underrepresented in the sample. This paper focuses on the
examination of the largest companies listed on the WSE. Perhaps, the inclusion of
smaller firms (for example the ones listed in the sWIG80 Index) would increase
the sample of consumer oriented companies and cast more light over the problem
of gender diversity across sectors. Another explanation is that chemicals and
pharmaceuticals as well as oil and gas sectors studied here include companies that
are, at least to a certain degree, state owned. Therefore, the high proportion of fe-
male directors on board of those companies may have been achieved as a result of
governmental pressure for more equality.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number of women</th>
<th>Board size</th>
<th>Proportion of women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking</td>
<td>14</td>
<td>148</td>
<td>9.46%</td>
</tr>
<tr>
<td>Chemicals and Pharmaceuticals</td>
<td>6</td>
<td>42</td>
<td>14.29%</td>
</tr>
<tr>
<td>Construction</td>
<td>4</td>
<td>76</td>
<td>5.26%</td>
</tr>
<tr>
<td>Developers</td>
<td>5</td>
<td>64</td>
<td>7.81%</td>
</tr>
<tr>
<td>Energy</td>
<td>8</td>
<td>66</td>
<td>12.12%</td>
</tr>
<tr>
<td>Finance</td>
<td>5</td>
<td>48</td>
<td>10.42%</td>
</tr>
<tr>
<td>Hotels and Restaurants</td>
<td>1</td>
<td>21</td>
<td>4.76%</td>
</tr>
<tr>
<td>IT and Media</td>
<td>3</td>
<td>59</td>
<td>5.08%</td>
</tr>
<tr>
<td>Sector</td>
<td>Male</td>
<td>Female</td>
<td>Proportion</td>
</tr>
<tr>
<td>----------------------</td>
<td>------</td>
<td>--------</td>
<td>------------</td>
</tr>
<tr>
<td>Metals</td>
<td>65</td>
<td>5</td>
<td>7.69%</td>
</tr>
<tr>
<td>Oil and Gas</td>
<td>41</td>
<td>5</td>
<td>12.2%</td>
</tr>
<tr>
<td>Retail</td>
<td>50</td>
<td>3</td>
<td>6.0%</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>36</td>
<td>2</td>
<td>5.56%</td>
</tr>
<tr>
<td>Others¹</td>
<td>63</td>
<td>4</td>
<td>6.35%</td>
</tr>
</tbody>
</table>

¹ includes single companies classified by the WSE as belonging to: food, wood and paper, building materials, light industry and engineering sectors.

It is particularly interesting to compare the proportions of female to male directorships in companies that have issued GDRs and ADRs with the firms that have no tradition of activity on foreign stock markets. This comparison can provide a partial answer to the question of the attitude of Polish capital market towards female directors. The companies that since 1990 have issued depository receipts on stock exchanges in New York, London or Frankfurt were forced to comply with codes of best practice of those stock markets long before such rules were established on the WSE. Furthermore, the presence on stock exchanges abroad was meant to increase the reputation of firms and attract potential foreign investors, who at that time were unable or unwilling to invest directly through the WSE. This goal strengthened the pressure on Polish companies listed abroad to comply with recommendations for best governance rules. The recent development of the capital market in Poland increased the importance and attractiveness of the WSE and, as a result, undermined the necessity of national companies to fight for investors’ capital abroad. As the increasing number of foreign shareholder made transactions directly in Warsaw, the stock volume of Polish GDRs on markets abroad diminished. In 2009 the proportion of GDRs and ADRs in company capi-
tal was not larger than 5 per cent for any of the firms included in the sample. Therefore, most of the companies decided to withdraw from foreign stock exchanges and focused entirely on the WSE. As of January 2010 only 7 firms (out of initial group of 30 companies) still issued depository receipts abroad (Koper, 2009).

By contrasting the overall proportion of female directors on boards of companies included in the sample, it could be observed whether the fraction in firms active on stock exchanges abroad is substantially higher than in the remaining companies. Such comparison could indicate whether the appointment of a female director was dictated mostly by the “spread” of foreign codes of good governance or whether having more gender diverse boards was unaffectedly perceived in the positive light by Polish companies. The data is presented in Table 3.

Table 3. Female directors on boards of Polish companies in years 2000-2010

<table>
<thead>
<tr>
<th>Type of company</th>
<th>Number of companies</th>
<th>Number of females</th>
<th>Total number of directors</th>
<th>Proportion of female directors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firms active on foreign stock exchanges</td>
<td>30</td>
<td>60</td>
<td>654</td>
<td>9.17%</td>
</tr>
<tr>
<td>Companies that issued depository receipts in 2010</td>
<td>7</td>
<td>7</td>
<td>100</td>
<td>7%</td>
</tr>
<tr>
<td>Other companies</td>
<td>38</td>
<td>74</td>
<td>724</td>
<td>10.22%</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
<td>134</td>
<td>1378</td>
<td>9.72%</td>
</tr>
</tbody>
</table>

From Table 3 it can be observed that the proportion of female directors in years 2000 to 2010 was actually higher in companies that have only been listed on the WSE than in firms which issued GDRs and ADRs. Although one should be cautious about drawing too firm conclusions from the above comparison, the table may suggest that over the past decade women became more fairly represented on
boards of Polish companies, regardless of the level of company internationalisation.

6.3 Event study - methodology

Following Rosenstein and Wyatt (1990) and Campbell and Minguez Vera (2010), this paper utilises the event study methodology to analyse the stock market reaction to the appointment of a female director. Price reactions are represented by daily abnormal returns, $AR_{j,t}$, which are calculated as the actual stock returns, $R_{j,t}$, minus expected returns, $E(R_{j,t})$:

$$AR_{j,t} = R_{j,t} - E(R_{j,t}),$$

where $j$ represents a company and $t$ denotes a day. The expected returns are calculated using the Ordinary Least Square market model.

The estimation window used in this study is 100 days long. It opens 120 days and closes 21 day before a new female directorship is announced. There is a 15 day event window which covers a week before and a week after the date of announcement, with the announcement of a female director’s appointment being represented by day 0.

For a particular day $t$, the average abnormal return, $AAR_t$, is given by:

$$AAR_t = \frac{1}{N} \sum_{j=1}^{N} AR_{j,t},$$

where $N$ represents the total number of companies.

In order to examine the abnormal returns for the sample of companies on the given day in the event period, the average abnormal returns are summed and presented as the cumulative average abnormal returns, $CAAR_{(T_s,T_d)}$: 
\[ CAAR_{(T_1,T_2)} = \sum_{t=T_1}^{T_2} AAR_t, \]

where \( T_1 \) and \( T_2 \) are the actual days within the event window.

Both the parametric and nonparametric tests are used to examine the statistical significance of the abnormal returns. The parametric test is calculated using the Share Time Series methodology; the nonparametric test is the generalised sign test. The parametric test used in this study standardises the abnormal return of the shares by their standard error in the estimation window. For a day \( t \) the test statistic is given by:

\[
\frac{ASE_t}{s(SE)/\sqrt{N}} = \frac{\sum_{j=1}^{N} SE_{j,t}}{\sqrt{N}},
\]

where \( SE_{j,t} \) represents the standardised error of the abnormal return, \( ASE_t \) is the average standardised error for the day \( t \), \( s(SE) \) is the standard deviation of the standardised errors and \( N \) is the number of companies examined.

The generalised sign test is a nonparametric test that examines whether the number of stock with positive abnormal returns on the given day in the event window is higher than the number expected in the absence of abnormal returns. The number expected is determined on the basis of the fraction of positive abnormal returns in the estimation window. Therefore, the proportion of positive abnormal returns expected under the null hypothesis is following:

\[
p = \frac{1}{N} \sum_{j=1}^{N} \frac{1}{T_j} \sum_{t} \varphi_{j,t},
\]

where \( \varphi_{j,t} \) is equal to 1 if the stock abnormal return on day \( t \) is positive, or is equal to 0 if the abnormal return is negative. The generalised sign test statistic is:
\[ Z = \frac{w - np}{\sqrt{np(1-p)}} \]

where \( w \) represents the number of stocks for which there exist positive cumulative abnormal returns in the event window.

Both Rosenstein and Wyatt (1990) and Campbell and Minguez Vera (2010) use Corrado rank test\(^6\) as the nonparametric test. This study utilises the generalised sign test instead of the Corrado method because of two reasons. First, it is more appropriate than the rank test for examination of cumulative abnormal returns over longer event windows. Second, the generalised sign test performs better than the Corrado test when the sample includes thinly traded stocks (Cowan, 1992, p. 356). Because some of the companies in the sample examined in this paper are lesser known and have lower trading frequency than the average,\(^{17}\) the generalised sign test seems to be the most adequate.

7. Results

The results of the event study are presented in Table 4. It shows the average abnormal returns and cumulative average abnormal returns for each day in the event window.

<table>
<thead>
<tr>
<th>Day</th>
<th>AAR [%]</th>
<th>CAAR [%]</th>
<th>Statistical tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-7</td>
<td>0.023</td>
<td>0.023</td>
<td>0.0995</td>
</tr>
<tr>
<td>-6</td>
<td>0.012</td>
<td>0.035</td>
<td>0.0497</td>
</tr>
</tbody>
</table>


\(^{17}\) This includes companies that are not listed in either of the two WSE Indexes contained in the sample but, instead, belong to the firms that used to issue depository receipts on foreign stock exchanges.
<table>
<thead>
<tr>
<th></th>
<th>0.289</th>
<th>0.324</th>
<th>1.1336</th>
<th>1.2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-4</td>
<td>-0.419</td>
<td>-0.095</td>
<td>-1.4499</td>
<td>1.0007</td>
</tr>
<tr>
<td>-3</td>
<td>0.051</td>
<td>-0.044</td>
<td>0.1608</td>
<td>0.6018</td>
</tr>
<tr>
<td>-2</td>
<td>-0.090</td>
<td>-0.134</td>
<td>-0.3808</td>
<td>0.4024</td>
</tr>
<tr>
<td>-1</td>
<td>0.468</td>
<td>0.334</td>
<td>0.9397</td>
<td>0.8012</td>
</tr>
<tr>
<td>0</td>
<td>0.547</td>
<td>0.881</td>
<td>1.9754*</td>
<td>1.0007</td>
</tr>
<tr>
<td>1</td>
<td>-0.619</td>
<td>0.262</td>
<td>-1.6329</td>
<td>-0.1958</td>
</tr>
<tr>
<td>2</td>
<td>0.430</td>
<td>0.692</td>
<td>1.1922</td>
<td>0.2030</td>
</tr>
<tr>
<td>3</td>
<td>0.008</td>
<td>0.700</td>
<td>0.0301</td>
<td>0.4024</td>
</tr>
<tr>
<td>4</td>
<td>-0.377</td>
<td>0.323</td>
<td>-1.4634</td>
<td>0.4024</td>
</tr>
<tr>
<td>5</td>
<td>-0.103</td>
<td>0.220</td>
<td>-0.4097</td>
<td>0.4024</td>
</tr>
<tr>
<td>6</td>
<td>-0.021</td>
<td>0.200</td>
<td>-0.0783</td>
<td>0.4024</td>
</tr>
<tr>
<td>7</td>
<td>-0.035</td>
<td>0.165</td>
<td>-0.1261</td>
<td>0.6018</td>
</tr>
</tbody>
</table>

* Significance at the 2.5% level

From Table 4 one can observe positive abnormal returns on the day of announcement of female director’s appointment (Day 0) and on the day before (Day -1). Relatively high positive abnormal returns are also noticeable for Day 2. However, the day of announcement is followed by relatively high negative abnormal returns on the next day. Nevertheless, the cumulative average abnormal returns illustrate that overall positive excess returns are received by a company throughout the entire week following the announcement of female director’s appointment to the board.

The parametric statistical test applied in this study confirms the significance only of the positive abnormal returns on Day 0. The non-parametric generalised sign test does not confirm that any of the abnormal returns is significant. Therefore, despite the existence of positive average abnormal returns, one must be careful about judging the strength of female director’s influence on short term value of the company. At the very least, the evidence contained in Table 4 confirms that female directors do not have any negative impact on stock prices.
The low significance level of the average abnormal returns observed in the event study might be caused by the ineffectiveness of the Polish stock market. The stock prices might have been very slow to react, especially in the early part of the period examined in the study. Before 2007, when the announcements were not published in the OAM system online, the investors might have had more limited or delayed access to information regarding personal changes on boards. Another possible explanation is that some of the companies included in the sample are family owned and, as a result, some of the female directors appointed might have been family members of firm owners. The announcements of such directorships may have had an influence on the results of the event study. Perhaps a research of the larger sample of companies and focusing on a more recent study period would return more conclusive results.

8. Conclusions

This paper fills, at least to a certain extent, the gap in the empirical research of female directors and performance of listed companies. It provides evidence from the country that has not been previously studied. The results from Poland offer a new aspect to the existing literature, as they demonstrate a slight correlation between gender diversity and stock value in a market with highly concentrated ownership, relatively low legal protection for investors and a two-tier corporate board system.

Although the event study conducted for the purpose of this paper unveils some new evidence regarding perception of women directors by the investors, it is insufficient to draw definite conclusions about female board members’ influence
on corporate performance in Poland. Event studies are only capable of determining short-term reaction of the shareholders. In order to examine the effects of female presence on boards of Polish companies in the long run, more complex regression analysis will be necessary. This, however, will require the collection of data that is very difficult to obtain considering the fact that at the moment the information regarding the composition of boards of directors is not gathered by any institution.

As a consequence, the evidence provided by the event study conducted in this paper is insufficient to substantiate any firm recommendations for a reform in Polish corporate governance rules. However, this study confirms that, in the short run, women in the boardroom are considered to be a positive change by the investors on the Warsaw Stock Exchange. Therefore the continuing promotion of increased female participation on boards of listed companies would be an effective policy by the government and the WSE authorities. In the author's opinion, publicly held firms should be encouraged to draw from a more gender diverse pool of workers, as suggested by the Higgs and Tyson reports in the UK. This should be achieved through ample research and education.

At the moment there is no evidence to suggest that the introduction of binding gender quotas for female directors would have a positive impact on company performance. Until reliable and more complex research is conducted to examine the female board members’ influence on firm value, it would be unwise to support the quota system.

Perhaps also in the Polish context it would be useful to consider the development of an independent research institution, similar to the initiative proposed by
the Tyson Report. According to Tyson, such institution should be independent of the government and sponsored by the business community itself (Tyson, 2003, p. 20). Although she is probably right in assuming that under such conditions, the new institution would have more influence on business decisions, it is not clear whether such solution would be acceptable in case of Poland, where the capital market is still young and relatively undeveloped. Therefore, it is the author’s view that the initiative of this kind should be proposed and supported by the Warsaw Stock Exchange, which has already taken steps towards the dissemination of good corporate governance practices and gender equality in the Polish business environment.

The results of the event study conducted in this paper should be compared to other countries. It would be particularly interesting to observe the impact of female directors on performance of firms in other Central and Eastern European countries, which share similar to Polish experience of system transition from the centrally planned economy to the free market. Thus, the question of female board directors and company performance remains an area of promising future research.
BIBLIOGRAPHY


