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Gender discrimination before mandated quotas? Evidence from Norway: 1989—2002

R. Øystein Strøm [a,b,*]

[a] Oslo and Akershus University College, Oslo, Norway
[b] Telemark University College, Norway

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Abstract Is the low percentage of women on boards due to discrimination? Discrimination has a time dimension; it is repeated period after period and is thus highly *persistent*. This persistence is tested with data from Norway before quota regulations were instituted in 2003. The data consist of an unbalanced panel sample of all non-financial listed companies from 1989 to 2002. Persistence implies a serial correlation close to one. The main finding is low persistence, implying no discrimination in the sample period. The lack of significant estimates for managerial power supports the persistence result. The main result is also robust to varying the definition of female representation.

1. Introduction

In 2003 the Norwegian parliament mandated a minimum 40% representation of each gender on the boards of directors of public limited liability companies (PLCs). The law was implemented from 2006 to 2008. Ansgar Gabrielsen, the minister who proposed the law, announced the possibility of a quota law in a surprise newspaper interview in February 2002. He said he knew how boards are elected, implying male discrimination against women. In this article, we examine whether discrimination against women at the time was a valid rationale for state intervention in owners' appointment of directors. We do so by studying the time patterns of director appointments. The Norwegian experience is important because it has inspired similar developments in other countries. Teigen, 2012, Chap. 4, Adams and Kirchmaier (2013), and Terjesen, Aguilara, and Lorenz (2015) report that other countries have followed Norway's example and enacted similar laws or plan to do so. Teigen (2012) explains the quota law as an outgrowth of the *Norwegian state feminist tradition*, that is, the law was due to political pressure channelled through political parties. Terjesen et al. (2015) likewise stress political institutions when explaining the uptake of legislation to end gender inequality in the boardroom. The Norwegian experience provides a clean testing ground for detecting possible discriminatory practices. The first country to enact such policy is informative because it has no precedent on which to build.

* Correspondence to: Oslo and Akershus University College, Oslo, Norway. Telephone: +47 67238255.
E-mail address: oystein.strom@hioa.no.

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The data span the period 1989—2002, that is, immediately preceding the 2003 legislation, and consist of company-level data on all non-financial listed companies in Norway. This provides a panel data set with a large number of companies and few time periods (large *N*, small *T*). I use time dimension properties of the panel data to study if discrimination can explain the low number of female directors on Norwegian boards before the new law in 2003. Discrimination has a time dimension. Altonji and Blank (1999, Chap. 48, p. 3168) state that discrimination takes place in the labour market when 'persons who provide labour market services and who are equally productive in a physical or material sense are treated unequally in a way that is related to observable characteristics such as race, gender, or ethnicity'. When people are unfairly treated unequally, they experience this repeatedly, year after year. Discrimination is persistent. The persistence of discrimination should therefore be apparent in the autocorrelation of female directors. In this paper, I use the *system generalised method of moments (GMM)* methodology (Arellano & Bond, 1991; Arellano & Bover, 1995; Blundell & Bond, 1998) to systematically determine the level of persistence. This is an instrumental variables methodology employing variables in levels and in first differences. System GMM is suitable for large *N* (many companies), small *T* (few periods) panel data series with a dependent variable likely to change slowly.

Farrell and Hersch (2005) find persistence in the number of female directors. Typically, a new female director replaces a former female director. The fraction of female directors is upheld and is thus persistent. In this paper, I model persistence explicitly, a novel approach in the literature. For instance, Dobbin and Jung (2011) relate the fraction of female directors to background variables but do not consider temporal, dynamic aspects. The review of Terjesen, Sealy, and Singh (2009) shows that research on women on the board has mostly been concerned with outcomes of governance and company performance and the roles women play in the boardroom. Therefore, studies on determinants of gender diversity are lacking. This paper contributes to the literature on the role of discrimination and, more generally, to the empirical research on board composition (Baker & Gompers, 2003; Boone, Field, Karpoff, & Raheja, 2007; Coles, Daniel, & Naveen, 2008; Linck, Netter, & Yang, 2008).

There is no reason to assume that owners discriminate a priori against female directors. On the contrary, they should welcome a larger pool of candidates. The heavily gender segregated labour market in Norway at the time, with women predominantly finding employment in the government sector and working part-time Strøm, 2009, Chap. 6, restricted the pool of candidates for board positions. Furthermore, owners may favour new female directors because they are likely to be more independent than their male peers and thus more likely to actively monitor the chief executive officer (CEO) (Adams & Ferreira, 2009). On the other hand, a power elite of insiders — specifically the CEO, the chair, and directors — presumably has vested interests in not hiring female directors. If managers are strong relative to owners (Berle & Means, 1932), they should be able to exclude women from directorships. Thus, based on the *managerial power hypothesis* (Bebchuk, Fried, & Walker, 2002), I can either corroborate, refute, or moderate the results from persistence.

The fraction of female directors was low before the legislation of 2003. An implication of the rarity of women on boards in this period is that endogeneity is not a serious issue, a feature that often plagues studies in corporate governance (Hermalin & Weisbach, 2003). Specifically, the low percentage signifies that reverse causation cannot be a problem. There were simply too few women and their experience too new to induce high gender diversity on a typical board.

The government's proposal for the quota law states that 'increased board diversity, not only related to gender, but also age and background, can contribute to better strategic choices, more innovation, faster restructures, and through this to increased profitability' (Ot. prop. no. 97, 2003, p. 10, my translation). However, research on the effects of mandatory gender quotas in Norway has uncovered costs of regulation that challenge the realism of assumed benefits. Bøhren and Staubo (2014) document that a sizable fraction of PLCs switched incorporation to the unexposed limited liability (LTD) organisational form during the sample period. In fact, while the number of PLCs reached a maximum of 631 in 2001, in 2010 it was 339, 46% less, at a time when the number of PLCs had increased in two neighbouring countries, Denmark and Sweden. Due to this transition, some companies may have acquired a sub-optimal organisational form and those remaining incurred costs of compliance such as searching for and screening suitable candidates for the board. In a follow-up paper, Bøhren and Staubo (2015) show that board independence in Norwegian PLC companies increases at the expense of the board's advisory function (Adams & Ferreira, 2007) and, implicitly, deviates from the owners' perceived optimal board composition. Awareness of the costs of the regulation makes an analysis of discrimination before the legislation important. It is fair to ask whether the gains in gender equality in a dwindling number of companies are worth the costs.

Seierstad and Opsahl (2011) find that female directors have greater network *betweenness centrality* (Wasserman & Faust, 1994) compared to men but are seldom the board chair. Furthermore, Ahern and Dittmar (2012) find a negative reaction in the stock market to the 2002 Gabrielsen interview, especially among companies with few female directors. Likewise, Matsa and Miller (2013) find a lower return on assets in a comparison of company performance before and after 2006. On the other hand, Nygaard (2011) and Dale-Olsen, Schøne, and Verner (2013) find a positive or a neutral effect upon profitability. One reason for the conflicting results is that there is no clear break in the timeline between the period before regulation and the period after. Gabrielsen's interview gave a first warning, the legislation was drawn in 2003, with a clause that it would be implemented if companies did not comply voluntarily by the end of 2005, and then it was implemented from 2006 to 2008. The research is further complicated by the drop in the number of PLC companies from their peak in 2001. The ensuing sample survivorship bias is not trivial. These sample problems are not present in this paper, however, since I choose to investigate the extent of discrimination before the quota law.

The paper proceeds as follows. The next section presents the theoretical foundation and introduces the main variables. The subsequent section describes the data, followed