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Gender quotas and company financial performance: A systematic review

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Abstract

Several countries have mandated sex quotas on corporate boards of directors. We systematically reviewed empirical studies that compared company profitability and financial performance before and after introducing legislated quotas. The search yielded 348 unique hits and nine studies were retained, including 20 effects. Four were null, 11 were negative, and five were positive, all of the latter for Italian and French companies. We conclude that quotas for women on corporate boards have mainly decreased company performance and that several moderating factors must be taken into account when assessing causal effects of quotas on company performance.

KEYWORDS

company performance, company profitability, gender diversity, gender quotas

JEL CLASSIFICATION

J16, K38, L1

1 | INTRODUCTION

Women's participation in the labour force has steadily increased over the last century, and today their level of education surpasses that of men in many Western countries. Yet women remain conspicuously under-represented in some domains, such as Nobel laureates, tech entrepreneurs, billionaires, music composers, movie directors, and in the higher echelons of the business world. Indeed, there is a long-standing concern over the stark under-representation of

women amongst CEOs and on corporate boards. To achieve a higher proportion of women in boards of directors within a specified period of time, so-called gender quotas have been enacted. This term is misrepresentative because the selection it entails is apparently based on biological sex rather than gender, but we nevertheless employ it to conform to the common practice in this field. Norway became the first country to adopt mandatory quotas for corporate boards of listed companies in 2003, requiring at least 40 per cent female representation on boards by 2008. Similar legislation followed soon after in nine European Union countries, namely Spain, Iceland, France, Italy, Belgium, the Netherlands, Germany, Austria, and Portugal. Partly as a result of these interventions, the average proportion of women on the boards of the largest publicly listed companies in the EU-28 Member States reached 23.3 per cent in 2016, compared with 9 per cent in 2003 (Comi, Grasseni, Origo, & Pagani, 2020).

The main arguments stated for gender quotas are twofold. One stems from the moral principle of equity, which means that men and women should exercise equal amounts of power and influence. Companies influence society, and they should therefore be controlled by both sexes equally. Equity has motivated concern amongst scholars and policymakers, particularly in European countries, about women's representation in various positions in society and in the workplace. Fairness is a related principle, according to which women and men should have equal access to remuneration for service on company boards. This argument is typically advanced by politicians, governmental bodies, and commentators who subscribe to feminism, as reviewed in Madison (2019).

The other argument is that organisations perform better the more diverse they are. Given that the board of directors is the centrepiece of the governance system for companies and corporations, those with more equal numbers of men and women, and with a wider range of other demographic categories in general, should exhibit higher performance. This is by far the most common argument in public discourse, as well as in politicians' rhetoric, although it has so far been subject to very limited scientific scrutiny (Madison, 2019). For example, the Norwegian government's proposal for the quota law stated 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" (Strøm, 2015, p. 304). Likewise, according to a report from the Swedish Department of Justice, "It is ... in the interest of the companies to take advantage of the competence that women have. Sex-equal decision-making gives companies a diversity that can increase their competitiveness" (Justitiedepartementet, 2016, pp. 13–14). Here, we test the veracity of the second argument with regard to sex.

2 | THEORETICAL BACKGROUND

Research in this area is, naturally, limited to correlational, longitudinal, and cross-sectional study designs, which makes causal relations impossible to determine. There is a large number of variables that affect performance and that may also conceivably affect the sex ratio. These variables are constantly in flux, influenced by business cycles, attitudes, technological developments, trade rules, demography, migration, and so forth, many of which constitute confounding variables and endogeneity threats. When the effects of interest are also small in magnitude, as is the case with financial performance measures, weak correlations between variables are dubious indicators. Accordingly, individual studies can be opportunistically cited to support one conclusion or another (cf. Madison & Fahlman, forthcoming, pp. 14–15, regarding quotas in academe).

However, a quota law like Norway's constitutes a significant intervention that allows a direct comparison of the same companies before and after its adoption, and provides a unique

opportunity to assess the impact of quotas under more controlled conditions. It differs from a natural experiment in that, being a social phenomenon, it is likely associated with other social processes that led to it being policed in 2003 by a higher authority (the government). It is more important for the present study that it was preceded by years of discussion in public fora, and could therefore be anticipated by all affected parties. After the political decision was made, there were four full years before the quota became mandatory, during which time companies could take various actions to adjust to the exogenous impact on selection and composition of their boards of directors. Accordingly, the percentage of female board members amongst public limited companies in Norway rose from 10.7 per cent in 2003 to 14.3 per cent in 2004, 21.8 per cent in 2005, 30.8 per cent in 2006, 45.0 per cent in 2007, and 49.3 per cent in 2008 (Ahern & Dittmar, 2012). We conducted a systematic review of studies that provide business performance data for companies before and after constitutionally mandated gender quotas, as well as addressing endogeneity issues that can influence the relationship between board structure and company performance. This had not been done before, to the best of our knowledge.

The composition of a board of directors should reasonably play a key role in a company's performance, and it is widely assumed that diversity is beneficial (e.g. Mannix & Neale, 2005). While multiple diversity attributes, such as age, nationality, and race, have been debated in research and practice, by far the most studied is the impact of sex diversity in leadership positions, and how it relates to distinct financial advantages for companies (for reviews and meta-analyses, see Byron & Post, 2016; Kim & Starks, 2016; Křečková, Zadražilová, & Řezanková, 2016; Leszczyńska, 2018; Pletzer, Nikolova, Kedzior, & Voelpel, 2015; Post & Byron, 2015; Terjesen, Sealy, & Singh, 2009; Velte, 2017).

According to resource dependence theory, board members drawn from diverse backgrounds bring various resources, networks, expertise, experiences, and viewpoints into the boardroom and thus help reduce operational uncertainty, send positive signals to the labour and product markets, and ultimately contribute to improvements in the company's performance (Carter, D'Souza, Simkins, & Simpson, 2010; Hillman, Cannella, & Paetzold, 2000; Kim & Starks, 2016; Pfeffer & Salancik, 1978). From this positive perspective, mandatory quotas for female directors may help give the company access to more diverse resources, leading to beneficial effects on company performance. But if there are insufficient numbers of female candidates, there is a risk that underqualified women fill the required seats and that qualified women are required to occupy seats on multiple boards, a phenomenon known as the 'golden skirts' (Seierstad & Opsahl, 2011).

Similarly, human capital theory suggests that diverse board members' unique sets of human capital resources, such as the knowledge and skills that they bring to the workplace, play a significant role in shaping company strategy and performance. However, the effects could be either positive or negative depending on the level of social capital or a company's context or internal and external factors (Carter et al., 2010; Dimov & Shepherd, 2005; Terjesen et al., 2009).

Another perspective is offered by agency theory, which presumes that managers and shareholders pursue their own economic self-interest. A diverse board including more women is therefore likely to be more effective in monitoring management and more independent from management, thus bringing fresh or unconventional perspectives into different areas of the company's operations (Fama, 1980; Fama & Jensen, 1983; Zahra & Pearce, 1989). Agency theory therefore implies that boards with a higher proportion of independent and diverse directors improve company performance.

To turn to psychological theory, there is evidence that greater demographic heterogeneity leads to more conflict and less cohesion and collegiality (e.g. Putnam, 2007), but there is also

some support for the notion that it may encourage more divergent and creative thinking (Křečková et al., 2016; Westphal & Milton, 2000). The former effect should compromise board efficiency, and the latter should facilitate innovation. On the other hand, it has been suggested that board members who constitute a minority demographic group tend to assimilate to the majority board members, who thus effectively exercise a disproportionately powerful influence (Mateos de Cabo, Gimeno, & Nieto, 2012; Rose, 2007). Based on these theoretical perspectives, increased female representation on boards through quotas may have both positive and negative effects on company performance.

A number of psychological perspectives can be brought to bear on why these sex differences occur in the first place. One of the largest sex differences is that women prefer working with people, while men prefer to work with things. These preferences are commonly conceptualised respectively as empathising and systemising, and measured with the empathising and systemising quotient scales (Baron-Cohen, Richler, Bisarya, Gurunathan, & Wheelwright, 2003). Men are also more competitive and less risk averse than women (e.g. Sila, Gonzalez, & Hagendorff, 2016; Yang, Riepe, Moser, Pull, & Terjesen, 2019), and are consequently more numerous amongst entrepreneurs, soldiers, and those working in other unpleasant or dangerous occupations.[1] High risk and unpleasantness are clearly concomitants of higher corporate positions, as one has to shoulder the responsibility for financial losses that may affect thousands of investors and employees, and accept the risk of being fired without notice. In a large representative sample of the Finnish population Svedholm-Häkkinen and Lindeman (2016) document significant sex differences with effect sizes of 0.59 (medium) for the empathy quotient and 1.02 (large) for the systemising quotient.

More relevant in the present context is the fact that positions in the higher echelons of the business world require exceptional abilities and skills. The sub-population of individuals who qualify for such particularly demanding positions is already small, which means that even a modest mean group difference may have very strong effects on the proportion of each group in the tails of the distribution. For example, a mean group difference in empathising or systemising has little effect on occupations that fall in the middle of the people–things spectrum, such as being a vocational teacher. For occupations that approach the extremes of this spectrum, even small mean group differences have very large impacts on the proportion of men and women; relevant examples include hairdresser, nurse, psychotherapist, and social worker, versus bricklayer, carpenter, auto mechanic, and computer technician. This might explain why women's higher education attainment and greater work participation have not been accompanied by increased female representation on corporate boards.

3 | BOARD GENDER DIVERSITY AND COMPANY PERFORMANCE

Estimates of companies' financial performance could be categorised into accounting- and market-based measures (Rowe & Morrow, 1999; Velte, 2017). Accounting-based measurements are based on the company's self-reported, retrospective financial performance (Pletzer et al., 2015; Rowe & Morrow, 1999). Return on assets (ROA) is a common metric, corresponding to the annual net income divided by the book value of total assets over a fiscal year (Pletzer et al., 2015). Whereas accounting-based measures reflect managers' perspectives, with focus on short-term or current financial performance, market-based measures reveal shareholders' and potential investors' expectations, reflecting their assessment of a company's long-term or future

financial performance (Nakano & Purevdorj, 2014; Rowe & Morrow, 1999). The most common market-based metric is Tobin's Q. It is the sum of the market value of equity plus the book value of debt divided by the total book value of assets, and captures market expectations regarding a company's future profitability (Bennouri, Chtioui, Nagati, & Nekhili, 2018; Pletzer et al., 2015). While there tends to be a positive relation between accounting and market measures of financial performance (Dess & Robinson, 1984; Hoskisson, Hitt, Johnson, & Moesel, 1993), accounting measures are susceptible to managerial manipulation and underestimation of intangible assets, which highlights the importance of considering both accounting- and market-based performance measures (Bennouri et al., 2018; Rowe & Morrow, 1999).

While either accounting or market measures are commonly used to assess the performance of a company, subjective measures may be considered an appropriate alternative particularly when objective measures are insufficient or unavailable (Rowe & Morrow, 1999; Singh, Darwish, & Potočnik, 2016). Such measures include top management's perceptions of the current financial situations and company growth, which has been shown to be positively associated with objective measures (Dess & Robinson, 1984; Kunze et al., 2013). Despite the subjectivity of such measures, some researchers suggest that they are comparable to objective measures of company performance (Rowe & Morrow, 1999; Singh et al., 2016).

Extant empirical research on the proportion of women on boards of directors and company performance exhibits mixed and inconsistent findings. A meta-analysis covering 140 studies showed that a higher representation of women on the board was statistically significantly related to accounting returns, but not to market performance (Post & Byron, 2015). Both associations were weakly positive, with effect sizes of 0.047 and 0.014 respectively, and exhibited significant heterogeneity. The study further reported that the representation of women on boards was more positively linked to accounting returns in countries with stronger shareholder protections or to market performance in countries with greater sex equality. A subsequent meta-analysis with stricter criteria included 20 studies, and found no association between the percentage of women on boards of directors and company performance, regardless of countries' development status or gross national income per capita (Pletzer et al., 2015). Post and Byron's meta-analysis covers a full 120 more studies than that of Pletzer et al. partly because it includes unpublished results. Some studies report significant negative effects of higher percentages of female board directors on company performance; two of the studies are more recent (Kweh, Ahmad, Ting, Zhang, & Hassan, 2019; Solal & Snellman, 2019), and one was included in Post and Byron but not in Pletzer et al. (Adams & Ferreira, 2009).

Again, these kinds of cross-sectional or correlational designs are subject to several validity threats, and causal relations therefore cannot be determined. In the present study, we exploit the fact that the introduction of boardroom gender quotas constitutes a natural experiment, which shifts the potential influence of some confounding variables. The objective of this systematic review is to collate and summarise existing empirical evidence on compulsory quotas for female representation on boards and their effects on company performance, and to guide future researchers in their exploration of the topic.

4 | METHOD

Eligibility criteria included (*a*) empirical studies exploring the effect of gender quotas on financial performance that are (*b*) published in international peer-reviewed journals. To acquire a fair basis for comparison of empirical studies, we excluded commentaries, conference papers,

editorials, errata, reviews, as well as publications in languages other than English. Date restrictions were not used since quotas of women on corporate boards were relatively recently implemented. Search terms were initially piloted and refined to assess their relevance to the review. The following search terms were run in three electronic databases considered to be relevant to the topic – Business Source Premier, Scopus, and Web of Science – where each term was searched for in the title, abstract, and keywords fields: (gender OR sex) AND (quota*) AND (profit* OR revenue OR performance OR equity). The last systematic search was completed on 11 September 2020. In addition to studies identified through the above search process, cited references in the retrieved papers were all examined for possible inclusion in the review.

Figure 1 is a search flow diagram designed on PRISMA lines (Moher et al., 2009).

5 | RESULTS

Of 509 sources identified during the database search and the three sources identified through manual search, 348 remained after removing duplicates. Reading their titles and abstracts excluded 329 of these, leaving 19 articles that were read in full. Ten of these were excluded because they were not empirical studies or did not directly investigate gender quotas for

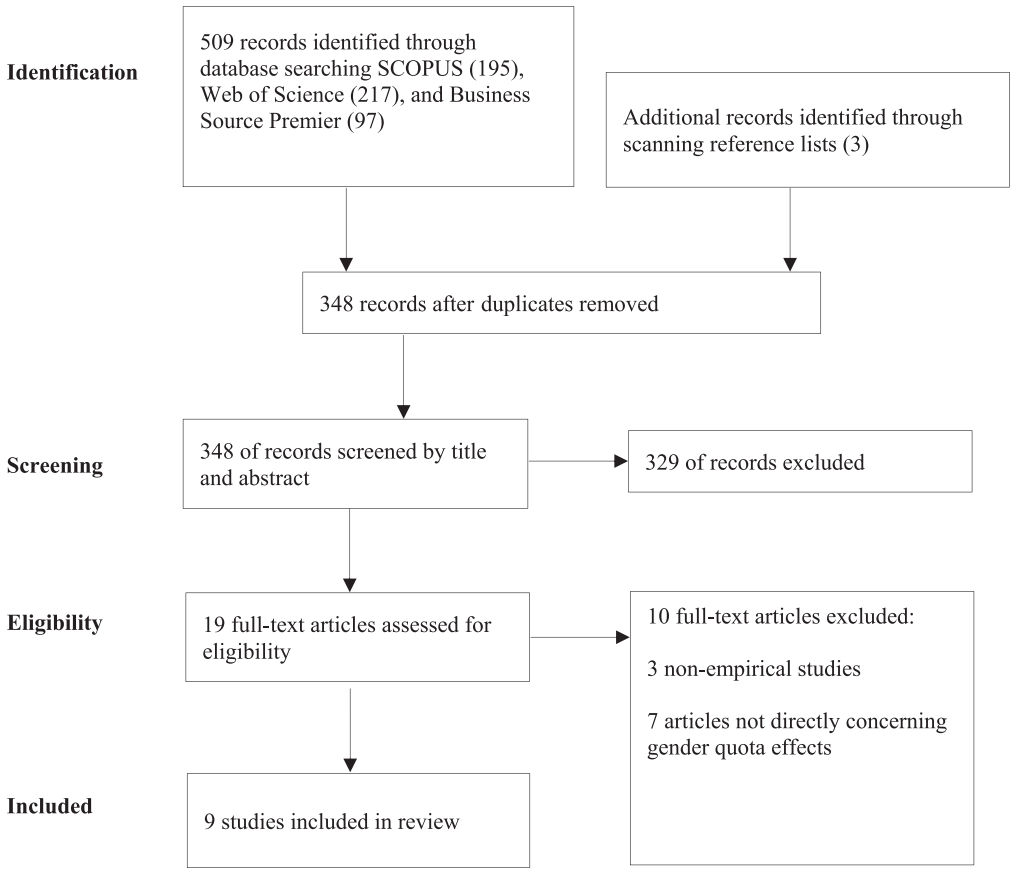

FIGURE 1 PRISMA flow diagram for selection of studies

corporate boards; and nine studies were thus retained for the systematic review. The effects on performance were grouped into the categories of accounting-based ($n = 8$) and market-based ($n = 5$) performance.

Seven out of nine studies adopted a difference-in-differences (DiD) methodology to estimate the effect of reforms on company performance (Ahern & Dittmar, 2012; Comi et al., 2020; Dale-Olsen, Schøne, & Verner, 2013; Magnanelli, Nasta, & Raoli, 2020; Matsa & Miller, 2013; Slama, Aymen, & Lakhal, 2019; Yang et al., 2019). Slama et al. (2019) used dose–response functions in addition to a DiD methodology to estimate an average treatment effect. The DiD method is often used to assess the causal effects of new policies by comparing the changes in outcomes before and after an intervention over time between treatment and control groups (Roberts & Whited, 2013). Although it relies on the parallel trend assumption, whereby differences between the treatment and control groups are constant prior to the reform (Roberts & Whited, 2013), the analyses of Matsa and Miller (2013) provide no support for the assumption that companies in Norway and those in other Nordic countries share the same time trends in the absence of treatment. While Matsa and Miller (2013), Comi et al. (2020), and Ahern and Dittmar (2012) all used only public companies as their treatment group, Ahern and Dittmar (2012) used the pre-quota percentage of female directors as a proxy for exogenous changes before the gender quota.

A close reading of the studies revealed that several different outcome measures were used, and that even the same measures were computed differently in one way or another. While ROA was the most common accounting-based performance measure, total factor productivity (TFP), labour productivity, and operating income divided by assets (OI/A) were also used. Likewise, market-to-book ratio (MTBR) was used in addition to the most common market-based measure, namely Tobin's Q. The studies are very heterogeneous in their methods, such as their choice of time periods, control variables, selections of companies, kinds of comparisons, and ways of computing. Most studies also report several alternative outcomes, based on different models with different assumptions. While it is possible to argue that some measures may be comparable across a few studies, no measure is meaningfully quantitatively comparable across all studies, in our estimation. For the purpose of the present study, we therefore find it most useful to describe the results qualitatively. We do, however, disclose one representative value per variable, when possible, as an example with which to provide a sense of the relative magnitude of the effect.

5.1 | Accounting-based company performance measures

Seven studies examined the impact of the quota on ROA, as listed in Table 1. To start with companies in Norway, four studies documented negative effects (Ahern & Dittmar, 2012; Bøhren & Staubo, 2016; Matsa & Miller, 2013; Yang et al., 2019) and one reported no effect (Dale-Olsen et al., 2013). Comi et al. (2020) found a deterioration in ROA for French and Spanish companies, but no general change for Italian companies, for which they instead noted a tendency for ROA to increase for well-performing companies and decrease for poorly performing companies. In contrast, Magnanelli et al. (2020) found an increase in ROA in Italy, in particular for family-owned businesses. Two studies documented a tendency for performance to decrease more when there were fewer women on the board prior to the quota in Norway (Bøhren & Staubo, 2016) and France (Slama et al., 2019), while two studies reported no such tendency (Dale-Olsen et al., 2013; Matsa & Miller, 2013).

TABLE 1 Summary of results for the included studies

Study	Sample characteristics	Outcome measure(s)	Findings/results
Accounting-based measures			
Ahern and Dittmar (2012)	414 Norwegian companies 2001–2009	ROA	Decrease
Bøhren and Staubo (2016)	696 Norwegian companies 2003–2008	ROA	Decrease (−1.4); lower percentage of female directors exacerbated an additional adverse effect
Matsa and Miller (2013)	1,620 Nordic companies 2003–2009	Operating profits/assets (revenue/assets, labour costs/assets, other costs/assets)	Decrease (∼ − 0.03) almost regardless of board age or CEO experience or turnover
Comi et al. (2020)	5,008 French, 1,125 Italian, and 7,608 Spanish companies 2004–2014	Labour productivity, TFP, and ROA	France: decrease in labour productivity (−0.020), TFP (−0.031) and ROA (−0.553) Italy: increase in labour productivity (0.045) and TFP (0.062) and no change in ROA (−0.584) Spain: decrease in ROA (−0.471) but no changes in labour productivity (0.008) or TFP (0.005)
Dale-Olsen et al. (2013)	128 public limited companies and 36,924 ordinary limited companies 2003–2007 in Norway	ROA	No significant change in ROA (∼ 0.02) regardless of board size
Magnanelli et al. (2020)	165 Italian companies 2011–2016	ROA	Increase in ROA (∼ 1.5), more for family-owned companies than for other companies
Slama et al. (2019)	89 French companies 2008–2011	ROA	Decrease in ROA (−1.159) when the proportion of women increased
Yang et al. (2019)	662 companies in Norway 2001–2008	OI/A and ROA	Decrease in OI/A (−0.038) and ROA (−0.026)
Market-based measures			
Ahern and Dittmar (2012)	248 Norwegian companies 2001–2009	Tobin's Q	Decrease (−0.19)
Greene et al. (2020)	602 Californian companies (US) 2018–2019	Abnormal return	Decrease in abnormal returns (∼ − 1%). Negative impact of the quota on abnormal return offset by the number of female directors, ease of replacement of existing directors, older companies, and connections to female venture capitals, but not by companies with employees accused of sexual

TABLE 1 (*continued*)

Study	Sample characteristics	Outcome measure(s)	Findings/results
			misconduct or incorporated in California or high-tech and STEM industries
Magnanelli et al. (2020)	165 Italian companies 2011–2016	Tobin's Q	Increase in Tobin's Q (∼ 0.3), more for family-owned companies than for other companies
Slama et al. (2019)	89 French companies 2008–2011	Tobin's Q	Decrease in Tobin's Q (−0.135) when the proportion of women increased
Yang et al. (2019)	662 companies in Norway 2001–2008	MTBR and Tobin's Q	No significant change in MTBR (−0.010) or Tobin's Q (−0.210)

Notes: MTBR, market-to-book ratio; OI/A, operating income divided by assets; ROA, return on assets; TFP, total factor productivity

Matsa and Miller (2013) reported a negative impact of the quota on profitability in Norwegian companies. Comi et al. (2020) found the quota to have negative effects on labour productivity and TFP in French companies, but positive effects on labour productivity and TFP in Italian companies. Yang et al. (2019) observed a decline in OI/A, but no significant change in MTBR in companies in Norway after the introduction of gender quotas.

5.2 | Market-based company performance measures

Four studies measured the effect of gender quotas on Tobin's Q, two of which documented negative effects (Ahern & Dittmar, 2012; Slama et al., 2019), one a positive effect (Magnanelli et al., 2020), and one no effect (Yang et al., 2019), as seen in Table 1. Ahern and Dittmar (2012, p. 140) reported that "a forced 10% increase in women representation on the board led to a 12.4% decline in Tobin's Q from the average". They also showed that the competence of board members declined during the implementation of the quota, strongly suggesting lower future profitability, and drew the conclusion that "boards are chosen to maximize shareholder value and that imposing a severe constraint on the choice of directors leads to economically large declines in value" (2012, p. 188). Yang et al. (2019) observed no such decline in Tobin's Q in companies in Norway, however. Magnanelli et al. (2020) found an increase in Tobin's Q for companies in Italy. Slama et al. (2019) reported that in France the quota led to an increase in Tobin's Q for well-performing companies but a decrease for poorly performing companies. In addition, Greene et al. (2020) reported a decline in abnormal returns in Californian companies after quotas were adopted.

5.3 | Confounding and moderating factors

The majority of the studies included in this analysis did also explore the influence of potential moderators. Matsa and Miller (2013) reported that the impact of the quota on company

profitability did not differ according to board age, CEO experience, or turnover. Comi et al. (2020) reported a moderating role of company size, based on both revenue and number of employees, upon the relationship between the implementation of the quota regulations and ROA. Dale-Olsen et al. (2013), however, found no moderating effect of board size on the association between the quota and ROA. Bøhren and Staubo (2016) found a moderating effect of the percentage of female directors on the association between the adoption of gender quotas and ROA. Greene et al. (2020) found the number of potential female directors, ease of replacement of directors, older companies, and venture capital to attract female directors to ameliorate the negative impact of the quota on abnormal return, but no such moderating effects of companies with employees facing allegations of sexual harassment, being incorporated in California, or in high-tech and science, technology, engineering, math (STEM) industries. Slama et al. (2019) compared poorly performing companies with well-performing ones in ROA and Tobin's Q after the adoption of gender quotas in France. With regard to country differences, the effects of gender quotas on company performance were not homogeneous across countries (Comi et al., 2020).

6 | DISCUSSION

This is the first study of company financial performance as a function of the sex composition of the board of directors to systematically compile empirical evidence on the economic consequences of implementing gender quotas for boards of directors. Given that gender quotas on corporate boards were implemented as recently as 2008 in Norway and later in EU countries, the nine studies included in this systematic review were published in 2012 or later. There is thus as yet a fairly small empirical base for evaluating gender quotas. It is nevertheless a pressing question, as such policies have profound and wide-ranging effects on the individuals concerned, and are likely to affect companies and, by extension, the societies that they operate in. If, for example, profitability is affected, so are living standards and potential tax revenues.

The majority of the studies in the present systematic review report that company performance deteriorated after the adoption of gender quotas. In terms of magnitude of the pre-quota versus post-quota performance measures, ROA ranges from minus 1.4 to plus 1.5, with most values hovering between minus 0.5 and zero. Again, these values are neither fully comparable nor representatively drawn from the studies, but provide a ballpark measure. It can be noted, however, that the 1.5 reported by Magnanelli et al. (2020) is a stark outlier in a corpus of small negative values. As for Tobin's Q, the negative effects seem to be considerably stronger, ranging from minus 1.0 to plus 0.3 and with a central tendency on the order of minus 0.2. Taken at face value, these findings contrast expectations derived from resource dependence theory and agency theory, but are consistent with social psychology theories that predict less cooperation and lower efficiency within demographically heterogeneous board members (Mateos de Cabo et al., 2012; Rose, 2007; Westphal & Milton, 2000).

It is of course notoriously difficult to assess causal effects of externally mandated gender quotas on company performance. The present level of analysis considers only two positions along a long causal chain, beginning perhaps with human and cultural values, as well as biological sex differences, and ending with overall societal and market efficiency, economic growth, and life satisfaction. The variables studied here, broadly sex board composition and company performance, are but two links separated by a chain of underlying mechanisms. How, and by which mechanisms, enforcing quotas for women influences board dynamics and company

performance remain largely unexplored, and therefore warrant further research. The outcomes reported and summarised here are, nevertheless, an empirical result.

Because the quotas have been recently implemented, they are also likely to have dynamic effects that will wither away over time. For example, the pattern of results suggests that quickly replacing older and more experienced males with younger and less experienced females has contributed to the negative effects (Ahern & Dittmar, 2012; Bøhren & Staubo, 2016; Greene et al., 2020; Matsa & Miller, 2013). Another pattern could be surmised from the fact that companies in Italy and well-performing companies in France experienced increased performance after implementing compulsory gender quotas (Comi et al., 2020; Magnanelli et al., 2020), unlike companies in other countries. This may suggest that the effects of mandated gender quotas for boards of directors on company performance interact with national and sociocultural factors, as well as with the way quotas are applied and enforced (Adams & Ferreira, 2009; Comi et al., 2020).

This points to important questions for future research, and to a variety of factors that should be considered in pursuing this line of enquiry. Some studies explored potential moderating variables in the hypothesised linkage between adoption of quotas for women on boards and company performance. For example, greater proportions of female directors seemed to mitigate the negative impact of gender quotas on ROA and on abnormal returns (Bøhren & Staubo, 2016; Greene et al., 2020), while board size, board age, or CEOs' experiences or turnover had no such moderating effect (Dale-Olsen et al., 2013; Matsa & Miller, 2013). Future research should explore further possible moderators that may serve to strengthen or weaken the relationship between gender quota laws and company performance. Relatedly, endogeneity issues, such as fulfilment of methodological assumptions and careful sample selection, need to be taken into account to make more valid causal inferences.

With regard to study limitations, first, the implementation of quotas is a fairly recent phenomenon, and the data therefore correspond only a relatively short follow-up period. Thus, long-term effects of gender quotas for corporate boards still await further research. Second, we included only anglophone studies, which might have excluded relevant studies written in other languages. Third, the current study presented only published research; thus, publication bias might significantly affect the results. Fourth, the heterogeneity of the multiple accounting- and market-based measures to gauge company financial performance made it difficult to compare across studies and to assess which are more appropriate for the question at hand. Finally, these measures may be insufficient to capture various aspects of company performance; thus, a wide variety of objective and subjective performance measures needs to be addressed (Dess & Robinson, 1984; Kunze et al., 2013; Rowe & Morrow, 1999; Singh et al., 2016). In doing so, the rationale for gender quotas for women on boards should not be grounded solely on companies' future economic performance (Adams & Ferreira, 2009; Carter et al., 2010; Leszczyńska, 2018).

This is the first systematic review exploring the impact of mandated gender quotas on subsequent company financial performance. Although still inconclusive due to the limited research on this topic, evidence from the present investigation casts doubt on the view that greater participation of women on boards of directors through adopting mandatory quotas for women on boards will contribute to better company performance.

NOTE

[1] A related issue concerns whether more gender-diverse boards lead to more risk-averse decision-making. The evidence for board gender diversity affecting company risk behaviour is mixed (Bruna, Dang, Scotto, & Ammari, 2019; Sila et al., 2016; Yang et al., 2019).

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