

DO FIRMS RESPOND TO THE MANDATED DISCLOSURE OF TARGET GENDER QUOTAS FOR TOP EXECUTIVE POSITIONS?*

Isabella Grabner[†]

Zoltán Novotny-Farkas

Mariana Sailer

Vienna University of Economics and Business

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We examine a unique regulatory intervention in Germany that (1) directly targets executive board positions and (2) aims to encourage firms to increase the female representation in firm management through the mandatory disclosure of a self-determined target quota. We document that affected firms respond by increasing female representation on their executive boards. This effect is primarily driven by firms with larger executive boards and state-owned firms, which plausibly face stronger public or governmental pressure. In addition, we find evidence indicating that the public debate around the subsequent tightening of the regulation accelerated affected firms' efforts to add female executives. We also examine the evolution and determinants of firms' target quota disclosures. Over time, a growing number of firms sets increasing target quotas for all affected management levels. Peer behavior is the primary driver of non-zero target quota and of its subsequent achievement. However, firms are more likely to commit to increase female participation if they have fitting talent pools at their disposal and are operating in family-friendly environment. These findings indicate that the regulation stimulates a broader rethinking of personnel management decisions and the attempt to seal leaky pipelines. Overall, firms seem to respond to the regulatory nudge.

Keywords disclosure of target quotas, glass ceiling, leaky pipeline, women in executive boards, talent management

JEL Classification M12, M14, M4

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[†] Corresponding author: isabella.grabner@wu.ac.at

1. INTRODUCTION

In response to societal pressure to promote a more socially responsible business conduct, Environmental, Social and Governance (ESG) related policies and regulations are on the rise. In our study, we assess the effectiveness of a unique regulatory action unique to the world, which relates to the social aspect of ESG policies. Specifically, we examine a regulation that for the first time explicitly targets executive boards and leaves the determination of a company-specific quota to the affected firms (“target quota”). The “glass ceiling” effect—allegedly keeping women from reaching highly-paid, high-status positions at the top of the labor market—has been subject to public debate for decades (e.g., Bertrand et al., 2019). As an intended remedy to the underrepresentation of women in positions of economic power, numerous countries have implemented mandatory gender quotas over the past years, such as Norway, Spain, or France (e.g., Terjesen and Sealy, 2016), and the US-state California (Greene et al., 2020). First, all these quotas addressed either nonexecutive boards specifically or the whole board of directors—none of them explicitly targeted only executive directors, which are essential for firm success (Edmans et al., 2017). Second, all of them mandated a pre-set uniform quota (e.g., a minimum of 40% female directors in affected Norwegian firms).

While such quotas specifically aimed at increasing the representation of females in nonexecutive board positions, they also had the hope attached to unfold spillover effects towards the share of females in top executive positions. However, these hopes have been disappointed. For example, Bertrand et al. (2019) show that despite the strict enforcement in Norway, newly appointed women on the board of directors did not pull more females into executive and middle management positions within the affected firms. Accordingly, while the share of women in

nonexecutive board positions is upward trending (e.g., on average 25% in the Europe in 2019), only 25% of European companies have at least one female member in the C-Suite. Furthermore, the share of female CEOs has remained at a low level of below 10% (European Women on Boards, 2021). Germany is no exception.

In this study, we exploit a recent governmental intervention in Germany specifically targeted at increasing the representation of females in executive positions that is different from the traditionally implemented gender quotas. Most notably, instead of mandating a uniform gender quota that is common to all affected firms and relies on varying degrees of sanctions for noncompliance as the key driver for change (e.g., Mateos de Cabo et al., 2019), the government followed a “nudging approach” with clear intentions (Ministry of Family Affairs and Ministry of Justice, 2015) to encourage firms’ self- and public commitment and “nudge” them into the societally desired direction (Thaler and Sunstein, 2008; Mertens et al., 2022). Precisely, in 2015, Germany introduced the “Law for Gender Equality in Leading Positions *FüPoG I*” (henceforth “Equality Law”)³, mandating firms to *self-determine* target gender quotas on a regular basis and commit to subsequently fulfill these quotas for high-level executives, i.e., executive board members and the managers at the following two senior management levels. The mandate of defining a target quota is intended to narrow firm’s action-value gap, i.e., the discrepancy between their actions and values (Thaler and Sunstein, 2008; Thaler et al., 2013). While firms already revealed their value to contribute to gender balance in management positions via a voluntary agreement to promote the careers of women and increase their share in high-level positions in

³ In German: “Gesetz für die gleichberechtigte Teilhabe von Frauen und Männern an Führungspositionen“ (FüPoG). <https://www.bundesregierung.de/breg-de/aktuelles/die-frauenquote-kommt-397642>, integrated in Section 289f IV, German Commercial Code (German Handelsgesetzbuch HGB).

2011,⁴ their actions were lagging behind. The Equality Law intends to change firm behavior by facilitating action through the mandated determination and disclosure of a quota, while preserving firms' freedom of choice through self-determining the level of the quota (Mertens et al., 2022).

Regarding the freedom of choice, the benefit of a self-determined quota is the possibility to calibrate the target quota based on industry and firm-specific factors—a key criticism of the mandatory uniform quota system, which does not consider supply side constraints for talent (Greene et al., 2020; Hwang et al., 2021). If individually determined target quotas worked as intended by the government, they would reflect firm-specific choices that are shaped by the talent pool for female managers at firms' disposal, but also firms' willingness or ability to make use of it. The introduction of the Equality Law was accompanied by increased media attention,⁵ attracting a lot of public interest and potentially creating social pressure, similar to other ESG issues (e.g., Fiechter et al., 2022; Freiberg et al., 2020; Rauter, 2020). However, the literature also cautions that nudges will be ineffective if previously proclaimed values were cheap talk and the incentives of keeping the status quo are too high (Sunstein, 2016). For the reform to succeed, it must encourage firms to adopt positive or even ambitious target quotas (target disclosure mechanism) *and* subsequently attain them (target achievement mechanism). However, the target quota disclosure might be ineffective for those firms that experience little stakeholder pressure or expect only little negative consequences (e.g., bad reputation) from disclosing a very low target quota, for example,

⁴ German newspaper Tagesspiegel (October 16, 2011): Selbstverpflichtung statt Frauenquote: Jeder macht seins („Voluntary obligation?“). <https://www.tagesspiegel.de/wirtschaft/jeder-macht-seins-6433411.html> [last accessed July 27, 2023].

⁵ The media interest is seemingly high all over the world: E.g., The Wallstreet Journal (March 16, 2021) “Germany Readies Quota for Women Board Members”. <https://www.wsj.com/articles/germany-readies-quota-for-women-board-members-11615887001> The New York Times (March 7, 2015): “Germany Sets Gender Quota in Boardrooms” <https://www.nytimes.com/2015/03/07/world/europe/german-law-requires-more-women-on-corporate-boards.html> [both last accessed July 27, 2023].

because peer behavior provides hideout for low targets. Relatedly, given the lack of penalties for the failure to meet to attain the self-set target quota within pre-determined periods (see Figure 1), also the commitment to the actual achievement of the disclosed targets might vary. Consequently, whether firms respond to the regulatory intervention is ultimately an empirical question.

The idea to let firms decide on their target quotas provides a unique opportunity to examine three interrelated research questions: (1) “Does the mandate to disclose a self-determined gender quota increase the proportion of women in high-level position in executive boards?”, (2) “Which factors determine firms’ likelihood to respond to the reform in terms of target disclosure?”, and (3) “Which factors determine the level of target achievement concerning the disclosed target quotas?”

To address the first research question, we use a difference-in-differences design and compare the growth in female executive directorships of affected German firms with that of unaffected firms from 24 European countries (including Germany) over the period from 2012 to 2022. Our findings document that the policy intervention resulted in a notable increase in the female representation on executive boards, especially when we use the share of firms with at least one female executive as the outcome variable (see also Figure 2 Panel A). Specifically, our baseline results suggest that in the period after the implementation of the Equality Law the likelihood of having at least one woman on the executive board increased by 7.3 percentage points, on average, for affected firms, which represents a 20.5% increase relative to the sample average. Upon closer examination of the yearly trends, we observe that treatment effect kicks in from 2017 and gradually increases over time. Our results are robust to the variation in the benchmark samples, to controlling for different regional trends, to using propensity score weighted regressions and to using a balanced panel.

In cross-sectional analyses, we find that firms with larger executive boards that potentially face higher pressure, but also have higher absorption capacity, and firms with state ownership show

significantly higher increases in female executive board representation. The latter result is consistent with the government pushing its social agenda in firms in which it holds a controlling ownership. Finally, we also report stronger treatment effects for the subset of firms subject to a stricter extension of the Equality Law (hereafter, FÜPoG II) that was passed in 2021. FÜPoG II mandated certain firms to appoint at least one woman in the next executive director replacement after August 1, 2022 (see Section 2 for details). Interestingly, this mandate affected primarily firms that, according to our findings, were among the first and strongest responders to the original Equality Law in terms of non-zero target disclosures and actual increases in executive board gender diversity. Nevertheless, the passage of FÜPoG II contributed to another incremental increase in female representation on the executive board already in 2021, i.e., before the mandate became effective, suggesting that the public debate around FÜPoG II increased the pressure on affected firms. Notably, FÜPoG II appears to have pushed firms with both zero and non-zero target quota disclosures to add women to their executive boards. Overall, the cross-sectional findings indicate that increased public pressure accelerates increases in executive board gender diversity.

To increase confidence in the interpretation of our empirical findings, we conducted a series of semi-structured interviews with representatives of affected firms that had all-male boards prior to the Equality Law. Regardless of the disclosed target quota, most of the interviewees emphasized the pivotal role of the Equality Law in shaping their strategic agenda and directing their attention towards the subject. Some firms affirmed that the law played a crucial role in pushing them to address the matter of executive board gender diversity and integrate it into their strategic agenda from early on. Other firms experienced a delayed impact of the law, which raised top management's awareness about the severity of the issue, eventually facilitating subsequent changes.

As a next step, we analyze treated firms' likelihood of responding to the governmental intervention in terms of target disclosure, that is, (1) committing to a target quota above zero, i.e., at least maintaining their positive status quo,⁶ and even more strictly, (2) committing to an ambitious target quota, i.e., improving the status quo. To do so, we compile a unique dataset allowing us to capture several variables related to the female talent pool that firms (and their industry peers) have at their disposal or related to constraints to the supply of female talents. For example, we collect data on state-offered childcare availabilities in the respective regions and make use of survey data capturing the industry averages of talent supply and demand, family-friendliness (e.g., work-family compatibility, flexible working hours), and business environment (e.g., competition, innovation intensity). We find that peer behavior, i.e., the response of peer firms in the same industry, is the most important determinant of firms' own decision to set target quotas above zero, while factors related to the available talent pool (i.e., share of high-skilled female workers or general talent demand) or workplace initiatives concerning family-work compatibility (e.g., flexible working hours) only have limited explanatory power. This finding implies that firms do not seem to expect negative consequences from a disclosure of low quotas when their individual decision is consistent with the majority decision of their peers. However, firms are more likely to set ambitious quotas for their executive boards if they have fitting talent pools at their disposal—regardless of their peers' behavior—and operate in a family-friendly environment. This insight suggests that the governmental intervention pushes firms in the desired direction to rethink their talent management and narrow their previous value-action gap.

⁶ The law (“Verschlechterungsverbot”) forbids setting target quotas that are lower than the current proportion of women on the respective management level if the proportion currently undercuts 30% (Ministry of Family Affairs and Ministry of Justice, 2015). However, regulatory compliance was so low between the introduction of the regulation in 2015 and 2020, that the German government started to enforce penalties in 2021 (FidAR 2022, page 44).

When introducing the Equality Law in 2015, the German government followed the goal to increase the proportion of women in top-level positions (Ministry of Family Affairs and Ministry of Justice, 2015). At the same time, the government expressed hopes the effort would also fix the “leaky pipeline”, meaning that the proportion of women decreased more in increasing hierarchical levels within the firms (Ministry of Family Affairs 2010; Ministry of Family Affairs & Ministry of Justice 2015). Indeed, affected German firms disclose higher target quotas for lower hierarchical management levels than for the top executive level in our evaluation period from 2015 to 2021. While the target quota for the executive board level is only 8.2% on average, it is 17.7% (21.2%) for the first (second) level below the executive board. Furthermore, all target quotas increase over time. Hence, the regulatory intervention triggered gradual but persistent changes, closing the gap between the share of women in society and in high-level management positions (Ministry of Family Affairs, 2014), as also underlined by our interview evidence. These insights suggest that firms try to build their internal talent pools step-by-step, and the talent pool plays an increasing role when determining the target quotas for the subsequent two levels below the executive board.

In a final step, we analyze firms’ level of target attainment between 2016 (first year after the reform) and 2021 for the executive board to evaluate the firms’ commitment to fulfilling their target quotas. Overall, a relatively constant average level of target attainment meets growing target quotas for a higher number of firms, thereby hinting at a high average commitment of firms that reacted to the governmental intervention. The supply of talent and management of talent pools, as well as a family-friendly surrounding are decisive in the level of target attainment. Consistent with our previous analyses, we see that peer behavior plays a major role in firms’ commitment, which again underlines the importance of complying with industry-wide benchmarks to remain competitive and meet investor requirements.

Our study contributes to the ongoing debate on whether gender quotas are an effective means of increasing the participation of females in positions of economic power. While the example of Norway shows that hard uniform quotas with severe sanctions for noncompliance seem to reach the primary goal of quota fulfilment, they also have undesired consequences (e.g., Ahern and Dittmar, 2012 for Norway; Greene et al., 2020; Meyernick et al., 2021 for California). In contrast, soft uniform quotas with little or no sanctions for noncompliance seem not strong enough motivators for compliance, as the Spanish case has shown (Mateos de Cabo et al., 2019). We explore the effectiveness of a novel policy instrument, the mandatory disclosure of self-determined target quotas, that triggers a rethinking of current personnel policies within companies. Our analyses also contribute to the broader discussion in economics regarding the effectiveness of choice architecture interventions, i.e., nudging, rooted in behavioral economics (Sunstein, 2016; Mertens et al., 2022) and can give impulses for recent reforms, e.g., the Corporate Sustainability Reporting Directive of the European Commission, which also addresses gender equality in positions of economic power.

2. INSTITUTIONAL SETTING

For more than a decade, the share of women in high-level management positions has been a topic of discussion in both German society and politics. In 2011, the minister of *Family Affairs, Senior Citizens, Women and Youth* expressed discontent with the low proportion of females in influential positions. However, the share of women in these positions did not notably change in the following years and was floating around 5% (German Government, 2014), as also Figure 2 illustrates. As a reaction, the introduction of a yet unspecified gender quota became part of the

coalition agreement between the newly elected parties by the end of 2013.⁷ On May 1, 2015, the government introduced it as part of the German Equality Law (FüPoG I).⁸ The law features a gender quota based on the idea in 2011 to have firms set target quotas themselves on a regular basis, disclose and fulfill them subsequently. The responsible ministries themselves claimed that they wanted to stimulate a rethinking of personnel policies within German firms through the mandatory determination of a quota, thereby tapping previously underused talent pools and increase societal equality (Ministry of Family Affairs and Ministry of Justice, 2015).

As German firms are governed in a two-tier system, in which executive and supervisory board are strictly separated (Block and Gerstner, 2016), the Equality Law can target both boards individually. According to the law, affected firms must meet different requirements depending on their respective sizes, legal forms, and codetermination rights.⁹ All affected firms had to determine and disclose target gender quotas for the executive management board and the subsequent two management levels. Hereby, the Equality Law reportedly aimed at (1) increasing the proportion of women in top-level positions and (2) fixing the “leaky pipeline”, which describes the decrease of females in the increase of hierarchal levels far below their 50%-share in society (Ministry of Family Affairs 2010; Ministry of Family Affairs & Ministry of Justice 2015). All affected firms had to disclose their target quotas until September 30, 2015. In general, the choice of quota levels is free.¹⁰

⁷ Deutschlandfunk (December 2014, 29): Der lange Weg zur Frauenquote (“The long path to the women’s quota”). https://www.deutschlandfunk.de/jahresrueckblick-2014-der-lange-weg-zur-frauenquote.769.de.html?dram:article_id=307401 [last accessed July 27, 2023].

⁸ German newspaper Zeit (March 6, 2015): Die Frauenquote ist beschlossen („The women’s quota is resolved“). <https://www.zeit.de/politik/deutschland/2015-03/frauenquote-bundestag-gleichberechtigung> [last accessed July 27, 2023].

⁹ Codetermination allows workers to codetermine the company for which they work via an elected representative in the supervisory board (see German Codetermination Act 1976).

¹⁰ As mentioned previously, the law (“Verschlechterungsverbot”) forbids setting target quotas that are lower than the current proportion of women on the respective level if the proportion currently undercuts 30% (Ministry of Family Affairs and Ministry of Justice, 2015). However, regulatory compliance was so low between the introduction of the

Then, the reform mandated to fulfil the self-chosen target levels until June 30, 2017. Following a *comply or explain* approach, firms that did not meet their disclosed quotas needed to provide a justification for missing their self-set target. Subsequently, firms had to determine new or affirm existing target quotas and, again, fulfill them within a maximum of five years (Ministry of Family Affairs and Ministry of Justice, 2015).

While all affected firms are mandated to disclose a target quota for executive and senior management, the requirements regarding female representation in supervisory boards differ according to their categorization. Firms that have more than 500 employees and are either co-determined *or* publicly listed must disclose target quotas for their respective supervisory boards additionally. Firms that have typically more than 2,000 employees, are co-determined *and* publicly listed must fulfil a mandatory 30% gender quota in their supervisory boards. If the current proportion of women in the supervisory board is lower, the firms must appoint women in any new election after January 1, 2016, to increase their proportion step-by-step. Otherwise, they would be left with an “empty seat” (Ministry of Family Affairs and Ministry of Justice, 2015).

On August 12, 2021, an extension to the Equality Law (FüPoG II) became active, after discussion in the German parliament in the beginning of 2021.¹¹ It introduced major changes. First, it aimed at increasing regulatory compliance in quota disclosure by finally enforcing sanctions. Actually, Section 334 of the German Commercial Code (German Handelsgesetzbuch HGB) would penalize non-disclosure of targets or non-explanation of zero-targets with fines of up to EUR

regulation in 2015 and 2020, that the German government started to enforce penalties in 2021 (FidAR 2022, page 44).

¹¹ Ministry of Family Affairs (August 12, 2021): Zweites Führungspositionen-Gesetz - FüPoG II (“Second Equality Law”). <https://www.bmfsfj.de/bmfsfj/service/gesetze/zweites-fuehrungspositionengesetz-fuepog-2-164226> [last accessed July 27, 2023].

2,000,000 or the financial equivalent to any unjustified advantages. However, regulatory compliance had been holey between 2015 and 2020 (FidAR 2022). Second, it mandated a smaller subgroup of already affected firms (codetermined and publicly listed with more than three executive board members) to have at least one woman on the executive board to publicly underline the importance of the efforts for gender equality (“Mindestbeteiligungsgebot”).¹² In case there is no woman on the executive boards of these firms, they have to appoint women in the next personnel replacement after August 1, 2022. Otherwise, they would be left with an “empty seat”. Figure 1 in the Appendix illustrates the timeline of the main events.

Both the German timeline and the penalties seem mild compared to those in California or Norway. The Californian law changes rushed firms into replacing members of the board of directors, which “can result in a costly disruption to board dynamics”, “even if the supply of female directors is large enough to satisfy demand” (Greene et al. 2020:3); Norway threatened firms with dissolution in case of non-compliance (Bertrand et al. 2019).

3. HOW MIGHT THE MANDATE OF TARGET QUOTA DISCLOSURE AFFECT THE SHARE OF FEMALE EXECUTIVES?

We now discuss the mechanism through which a mandated target quota disclosure might positively affect firm’s commitment to increase the share of female executives, as well as provide counterarguments for why this form of government intervention might not achieve this purpose.

¹² Welt (June 13, 2021): „Zielgröße null“ – wie Deutschlands Konzerne mit der Frauenquote kämpfen („Zero target quota—How German companies hustle“) <https://www.welt.de/wirtschaft/article231791379/Frauenquote-So-gehen-Deutschlands-Konzerne-mit-der-Regelung-um.html> [last accessed July 27, 2023].

Today's most pressing societal challenges call for substantial changes in individual and firm behavior. Given that such changes do not necessarily immediately benefit the decision makers (i.e., the individual person or firm), but society, it is often the role of governments to incentivize relevant measures. Traditional economics relies on regulatory and price-based solutions to deal with market failures stemming from the presence of externalities such as pollution (e.g., Bhargava and Loewenstein, 2015). A typical form of such government intervention are mandates that are accompanied by varying degrees of sanctions for non-compliance. A well-known example of such mandates that has been extensively studied in the literature are gender quotas for board representation (e.g., Bertrand et al., 2019; Greene et al., 2020; Terjesen and Sealy, 2016), sometimes described as the last response to an intractable problem that cannot be solved otherwise: Firms that do not intrinsically see value in complying with a standard are forced to do so by the government that is protecting the interests of society (e.g., Norway introduced the strict gender quota after voluntary compliance failed, as described in Ahern and Dittmar, 2012).

Alternatively, and the focus of our study, policy makers can rely on strategies and rationales for the use of policy to address the internalities that stem from the failure of individuals/firms to successfully pursue their own interests (Bhargava and Loewenstein, 2015). Such government interventions target firms' intrinsic motivation to contribute to an important societal goal through interventions in the "choice architecture", understood as the background against which choices are made (commonly known as "nudging") (Thaler et al., 2013, Sunstein, 2016). A nudge is defined as "any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler and Sunstein, 2008:6). That is, nudges aim to steer organizations in an intended direction, while allowing them to go their own way (Sunstein, 2016). In that sense, such choice architecture interventions aim to bridge the value-action gap by reinforcing self-regulation, i.e., action that is in line with values

(Mertens et al., 2022; Thaler and Sunstein, 2008). An example of a successful nudging intervention at the individual level is the *Save More Tomorrow* program in the US that nudged individuals into increasing their savings towards retirement (Benartzi and Thaler, 2013)—addressing the societal problem of pension poverty. Related to regulations pertaining to gender inequality, the mandated disclosure of gender pay gap information can be seen as a nudging mechanism, as the resulting transparency is intended to encourage firms to reduce their gender pay gap (Bennedsen et al. 2022; McKenna et al. 2022). For example, Bennedsen et al. (2022) study a 2006 legislation change in Denmark requiring firms that employ more than 35 workers to publicly disclose gender pay gap information. Comparing firms just below and above the treatment threshold, they show that the gender pay gap transparency indeed leads to a decline in the gap, which was mostly driven by a smaller growth of male wages. In contrast, Raghunandan and Rajgopal (2021) find that under the 2017 UK gender pay gap disclosure rule, which affects firms with more than 250 employees, the mandate only marginally decreased the pay gap of smaller employers, while having no impact on large employers above 500 employees. They conclude that the impact of the rule is modest at best, and at worst may even have had unintended consequences for firms and their employees.

Applied to our setting, the mandated disclosure of a target gender quota can be seen as a nudging mechanism introduced by the government that is intended to change firm behavior by redesigning the decision environment (that is, reinforcing self-regulation by *mandating the disclosure* of a quota), while preserving firms' freedom of choice (i.e., allowing *self-determination of the quota level*) (Mertens et al., 2022). If successful, this nudge would incentivize firms to tap broader talent pools for female managers and break boundaries of “old boys clubs or networks” in an attempt to increase the share of female executives (e.g., Adams and Ferreira, 2009; Agarwal, 2016) on upper managerial levels. By means of a self-determined gender quota, the German government reportedly aimed to incentive firms to make use of talent and skills of women that they

could have overlooked accidentally or intentionally before. The Minister of Justice at that time claimed that “meanwhile, an increasing number of firms recognizes that they caused harm to themselves [...]” by the underuse of female potential (Ministry of Family Affairs and Ministry of Justice 2015:3).

However, literature also cautions that nudges will be ineffective when the incentives to keep the status quo are too high. In deciding whether to reject nudges of any kind, decision makers need to make cost-benefit trade-offs regarding the cost of the decision and the consequences of that decision. When it is not especially costly to reject a nudge, and the expected cost of accepting the nudge are quite high, a nudge will be ineffective (Sunstein, 2016). Regarding variation in the cost of rejecting the nudge, the target quota disclosure will be ineffective for those firms that expect little negative (e.g., reputational) consequences from disclosing a very low target quota or from not achieving their self-set quota. For example, responses to the nudge might vary based on the level of public scrutiny in terms of media attention or stakeholder pressure that firms expect to face in that matter. Also, firms might simply benchmark themselves against the behavior of their main competitors, and condition their response to the nudge (i.e., their chosen target quota) accordingly. Regarding variation in the cost of accepting the nudge, the reform might be ineffective when finding female candidates is particularly effortful. The expected costs of finding female candidates highly depend on the available talent pools for females that likely vary substantially across industries or regions. For example, women obtained only a quarter of university engineering degrees and only 10% of engineering degrees from universities of applied sciences in 2019. However, more than half of medicine graduates were female.¹³

¹³ GovData (2021): Graduate data for German universities and universities of applied sciences. <https://www.datenportal.bmbf.de/portal/de/Tabelle-1.9.5.html> [last accessed July 27, 2023].

Consequently, we conclude that firms' responses to the nudge will likely not be uniform. While we expect that some firms will disclose an ambition to increase their share of female executives, others might be willing to commit to maintaining the status quo¹⁴. For yet other firms the costs of committing to any such ambitions will likely be too high. At the extreme, some firms might even choose to avoid committing to any kind of restriction on their succession planning. Overall, the extent to which this form of government intervention in Germany is successful in nudging firms towards a higher commitment regarding gender equality in executive positions is an open empirical question.

4. DATA AND SAMPLE

4.1 Data and Sample Description

Table 1 Panel A summarizes our sample selection procedure for the diff-in-diff analysis (research question 1) and for the cross-sectional analyses (research questions 2 and 3) of the treated firms. Our sample comprises all German firms with more than 500 employees that are co-determined and/or publicly listed. Hence, our sample comprises all German firms that are affected by the Equality Law. In a first step, we collect data on firm's target quotas for the proportion of women in their respective executive boards (EB) and the two levels directly below for all 465 affected firms from their audited financial reports. 437 (28) of these firms (do not) disclose their target quota for the executive board by the end of our sample period in 2022. In a second step, we collect data on corporate board composition and characteristics from BoardEx resulting in a sample of 328 firms, of which 311 disclose target quota for the executive board. The last two columns of

¹⁴ We note that a commitment to maintaining the status quo does not guarantee easy target achievement, as such commitment imposes significant restrictions on firms' responses to unexpected personnel-related changes in the executive board.

Table 1 Panel A show that somewhat less (more) than half of the disclosing firms choose a non-zero (zero) target. Table 1 Panel B further reveals that firms only gradually adopt positive targets over the sample period, raising questions over whether and when these disclosures would translate into an actual increase in female representation on the executive boards.

To answer our first research question (“Does the mandate to disclose a self-determined gender quota increase the proportion of women in executive boards?”), we use difference-in-differences analyses, in which we benchmark the development of female representation on the executive boards of German firms affected by the Equality Law against their European peers from 2012 to 2022. The European sample consists of an unbalanced panel of 4,176 listed and unlisted firms in 24 European countries, including Germany with 405 firms, of which 328 firms are affected by the reform (see Table 2). We include countries with at least 5 firms on BoardEx and require firms to have at least one observation before and after the implementation of the Equality Law in 2015. The overall number of observations in the multivariate analyses varies due to the availability of data on the control variables. The description of the control variables and data sources are detailed in Appendix A. Online Appendix A provides more details on the distribution of the treatment and control samples. We complement our quantitative analyses with qualitative interview data, which offers more direct evidence regarding the impact of the Equality Law on shaping a firm's strategic agenda concerning the representation of female executives.

To answer our second (“Which factors determine firms’ likelihood to respond to the reform?”) and third research question (“Which factors determine the level of target achievement concerning the disclosed target quotas?”), we run analyses within Germany between 2015 (reform year) and 2021 (latest available IAB data). For this purpose, we merge the previously described archival data with survey responses from the IAB Establishment Panel, which the Research Data Centre (FDZ) of the German Federal Employment Agency (BA) at the Institute for Employment

Research (IAB) provides (Fischer et al. 2009; Ellguth et al. 2014; Bellmann et al. 2022). The IAB Establishment Panel is an annual representative employer survey of employment parameters at individual establishments, such as the determinants of demand for personnel, status of developments in technology or training activities. For research purposes, the IAB provides the unique opportunity to access the survey data, typically in anonymized form. Given our need to merge the survey responses with firm-level data, the IAB provides de-anonymized data only at higher levels of aggregation (Bechmann et al., 2020). In particular, we were provided with industry specific averages¹⁵ of survey responses that we subsequently match to our sample of affected firms, resulting in a final sample of 258 firms (Table 1 and Table 3) with 1,539 firm-year observations used in the subsequent analyses.

4.2 Descriptive Statistics

In Table 2, we provide descriptive evidence on the representation of women on the executive and supervisory boards across European countries and over time for the sample used in the difference-in-differences analyses. Panel A shows that for the pooled sample the average share of women on executive boards is 8.4%, while the typical (median) European firm has no women on the executive board over the sample period. The average share of female executives ranges from 3.8% in Monaco to 14.7% in Finland. With an average female executive share of 6.1%, Germany ranks at the lower end of the European range. The female representation on European supervisory boards is significantly higher, reaching an average (median) share of 20.2% (18.2%) over the sample period. Countries that enacted mandatory gender quota regulations such as France, Italy,

¹⁵ We were also provided with region-industry specific averages. Talent pools could also vary across regions, as firms often work in regional connections to develop and manage talents (See, e.g., Technology Network North Rhine-Westphalia (<https://www.its-owl.de/home/>), Innovation Region Central Germany (<https://www.innovationsregion-mitteldeutschland.com/>), or Bavaria Innovativ (<https://www.bayern-innovativ.de/de>) [all last accessed July 27, 2023]. Using region-industry specific averages sheds qualitatively similar results regarding the major influence of peer behavior on firm-individual decisions.

and Norway (Terjesen and Sealy, 2016) exhibit the highest average share of female representatives on supervisory boards of 33 to 40%.

The share of women on executive boards potentially masks firms' efforts to increase female representation on executive boards, especially for firms with larger executive boards. Therefore, Panel B of Table 2 also includes the proportion of firms with at least one female executive director (ED). Panel B shows that female executive representation has been increasing in Europe, on average. Over the eleven-year sample period, the average female shares on executive boards almost doubled from 6.1% in 2012 to 11.3% in 2022 and the share of firms with at least one female ED increased from 16.8% to 25.9% for the pooled sample. Figure 2 Panel A further reveals that the share of treated German firms with at least one woman on the executive board runs roughly parallel to that of other European firms until 2015, the year of the passage of the Equality Law. However, from 2016 the share of treated firms with at least one female ED gradually increases, surpassing the European average in 2018 and reaching close to 40% in 2022. Figure 2 Panel B shows that it takes several years longer for the effect of increased female participation to materialize in the average female share on the executive boards of the treated firms, but it reaches and surpasses the European average of close to 12% by 2022. This descriptive evidence indicates that the reform might have nudged (some) firms to increase female representation on their executive boards.

For comparison, Panel C of Table 2 and Panels C and D of Figure 2 show that the evolution of female representation on the supervisory boards runs roughly parallel for European and treated firms over the entire sample period. Panel D of Table 2 reports the descriptive statistics for the control variables used in the difference-in-differences analyses, Panel E shows these descriptive statistics separately for the control and treated firms.

Tables 3, 4 and 5 provide detailed descriptive statistics for all 258 German firms in the sample that we use to answer our second and third research question. Roughly one third of the firms in this

sample is co-determined and publicly listed, i.e., have a fixed supervisory board quota of 30%.¹⁶ Four observations are particularly interesting. First, the average target quota for the executive board of 8.2% is slightly higher than the current share of women of 5.8% in executive boards between 2015 and 2021 (Table 3). Second, the Equality Law obliges all firms to disclose target quotas for the executive board and the two subsequent management levels. However, the regulatory compliance decreases with the hierarchical level (Table 4), hinting at the need of a stricter enforcement that came with the extension of the Equality Law in the second half of 2021. Third, the levels of the respective target quotas increase over time and forth the level of the target quotas is higher for lower hierarchical levels.

Tables 4 and 5 split the firm-year observations into two groups—those with a target quota for the executive board equal to zero (Panel A) and those with a quota above zero (Panel B). Table 4, Panel A shows that firms, which hardly have any women on their executive boards, opt to set their target quota to zero. However, on average, ambition regarding the target quotas for lower managerial levels increases on average (16.2% for the first level, 19.3% for the second level below the executive board).

Those firms, which set non-zero target quotas for the executive board, exhibit a target quota of 23.0% for the executive board on average over the years, corresponding to an actual share of females of 13.9%. Different to the firms that set their target quotas for the executive board to zero, they determine, on average, higher target quotas for the second level (24.1%) below the executive board than for the first level (20.3%) between 2015 and 2021. Compared to the group of firms that set a zero target quota for the executive board, the group of firms with target above zero benefits from significantly better talent pools and features executive boards with a significantly higher

¹⁶ We do not observe switches in legal structure of our sample firms in the period between 2015 and 2021.

number of members (4.32 vs. 2.97) over the years, but faces also a higher level of talent misfits and worse state support in childcare.

5. EMPIRICAL ANALYSIS OF RESEARCH QUESTION 1

5.1 Average Treatment Effects of the Equality Law (FüPoG I)

We start our empirical analysis by investigating whether the Equality Law has led to an increase in the female representation on the executive boards of affected German firms over and above the European trend. Specifically, we adapt the empirical design of Gormley et al. (2023) and estimate the following baseline difference-in-differences model to identify the average treatment effect on the treated firms:

$$\begin{aligned} ExecBoardFemaleRep_{f,t} = & \beta_0 + \beta_1 treated_f \times post_t + \beta_2 zero_{2015_f} \times post_t \\ & + \beta_3 one_{2015_f} \times post_t + \beta_4 listed_f \times post_t + \beta_5 SB\ female\ share\ pre - 2016_f \times post_t + \\ & \beta_6 EB\ size\ pre - 2016_f \times post_t + FixedEffects + \varepsilon \end{aligned} \quad (1)$$

where *ExecBoardFemaleRep* is the representation of women on the executive board in firm *f* in year *t* and is measured using one of the following two variables: *EB female share* is the proportion of women on the executive board. *at least one female ED* is an indicator variable taking the value of one in firm-year observations with at least one female executive director. *treated* is equal to one for German firms that are subject to the Equality Law, and zero otherwise. *post* is equal to one for 2016 onward, i.e., the years following the implementation of the reform, and zero otherwise. The interaction term *treated x post* captures the incremental impact of the Equality Law on affected German firms. To control for time-invariant differences in firms' commitment to board gender diversity and governance structures and industry-year specific trends in board diversity, we use firm- and sector-year fixed effects. We cluster standard errors at the firm level.

Even in the absence of the Equality Law, firms with zero female executive board representation are likely to experience greater pressure to add women (Farrell and Hersch, 2005; Gormley et al. 2023). To allow firms with different baseline levels of executive board gender diversity to have different trends, we include the interaction of *post* with *zero_2015* and *one_2015*, which are indicator variables for the firm having zero or one women on their executive board, respectively (Gormley et al. 2023). To capture firms' attitude towards female participation in the board of directors (or "female friendliness"), we include *SB female share pre-2016*, which measures the average share of female directors on the supervisory board before 2016. Firms with larger executive boards face greater pressure but will potentially also find it easier to add women. Therefore, we also control for the average executive board size before 2016 (*EB size pre-2016*). An advantage of the baseline specification of equation (1) is that we can use all firm-year observations for both listed and unlisted firms that have available data on BoardEx. In later analyses we include additional controls that reduce the sample size.

Table 6 Panel A presents the results for the baseline specification of equation (1) using all available firm-year observations. Column 1 shows a positive, but insignificant average treatment effect on the share of female executive directors (*EB female share*). This insignificant result might be attributable to the gradual addition of women to the executive board, which materializes in higher female executive shares later in the sample period, as shown in Figure 2. However, we find a significant treatment effect on the extensive margin: Column 2 shows that the likelihood of having at least one woman on the executive board increased by 7.3 percentage points, on average, for German firms affected by the Equality Law. Compared to the sample average of 20.5% (Table 2 Panel B), this represents a substantial increase of 36% in female executive board representation.

One concern with our international analysis is that our results might be affected by other unobserved regional trends. To address this concern, in columns 3 and 4, we include European

Union (EU)-year fixed effects, which does not affect our estimates of the treatment effects. In columns 5 and 6, we allow the Germanic region including Austria, Germany, and Switzerland to follow a different trend. These neighbouring countries have arguably comparable cultures, corporate governance and largely share the same executive labour market and are therefore also compared with each other in prior studies (e.g., Fiechter et al. 2022). Column 5 shows now a positive and significant treatment effect, suggesting that the share of female executives increased by 2.1 percentage points following the implementation of the Equality Law. This estimate corresponds to a 25% increase in the female executive share relative to the sample average of 8.4%. In column 6, the magnitude of the treatment effect on the extensive margin is slightly larger than in columns 2 and 4, and statistically significant, suggesting that following the adoption of the Equality Law the likelihood of having at least one woman on the executive board increased by 7.8 percentage points. Overall, the results indicate that the Equality Law was successful in nudging (some) firms to add women to the executive board.

To link these increases more directly to the implementation of the Equality Law and to examine the trends in the executive board gender diversity, we estimate a modified version of equation (1) in which we interact *treated* with a full set of year indicator variables instead of *post*. We exclude the indicator for the year 2015, in which the Equality Law was passed, making it the benchmark period. Table 6 Panel B presents the results. Across all specifications, we find that the treatment effect on the likelihood of at least one woman on the executive board kicks in from 2017 and gradually increases over time (columns 2, 4, and 6). Consistent with the pattern illustrated in Figure 2, the treatment effect on the share of female executives materializes several years later, i.e., in 2020 (in column 5) or 2021 (in columns 1 and 3). Importantly, none of the yearly interactions before 2015 are statistically significant, indicating that there was no positive pre-trend in the female executive board representation in the treated firms.

5.2 Robustness analyses

We conduct several robustness checks to increase our confidence that our baseline results capture the causal effect of the Equality Law. First, we rerun our baseline analyses of Table 6 by (1) also allowing Nordic countries (i.e., Denmark, Finland, Norway, and Sweden) to follow a different trend, (2) excluding the United Kingdom that has the largest number of sample observations, (3) restricting the sample to Austria and Germany and (4) to Germany only. These sensitivity analyses do not alter our inferences, although the magnitude of the treatment effects varies somewhat across the different specifications, especially for *EB female share*. Online Appendix B Panel A shows that the treatment effect on *EB female share* ranges from zero to 4.6 percentage points, while the treatment effect on the likelihood of at least one female executive ranges from 8.3 to 9.9 percentage points. Panel B of Online Appendix B shows that independent of the specification or benchmark sample, there are no positive pre-trends in executive board gender diversity in the treated firms.

Second, we include additional control variables that might be associated with firms' incentives to add women to the executive board. We include an indicator for state ownership (*state owned*) to control for the possibility that governments use their controlling equity stakes in firms to push their social agenda to increase board gender diversity. Gormley et al. (2023) report that, in 2017, *The Big Three* institutional investors (BlackRock, State Street, and Vanguard) initiated campaigns to increase board gender diversity, which resulted in a substantial increase in female representation on U.S. firms' boards. In recent years, other large institutional investors joined the *30percent Club Investor Groups* and pledged to push for more board gender diversity.¹⁷ Therefore, we control for *big3_2015*, the share of firms' equity held by the *The Big Three* in 2015 or for

¹⁷ See the website of the group here: <https://30percentclub.org/investor-groups/> [last accessed August 13, 2023].

topinst_2015, which adds the equity share of the Big Three and the equity share of twelve other large institutional investors in Europe that are members of the *30percent Club Investor Groups* (see Appendix A for more details). Finally, we include *size* to control for the possibility that larger firms face greater public pressure to increase board gender diversity. The Online Appendix C Panel A shows the results using firm and sector-year fixed effects, while Panel B also includes EU-year and Germanic region-year fixed effects. Despite the substantial reduction in sample sizes, the estimated treatment effects are comparable to those reported in Table 6. Furthermore, our inferences do not change when we use propensity score weighted regressions (see Online Appendix D) or when we use a balanced panel (Online Appendix E). Overall, although the estimates for *EB female share* are sensitive to the various specifications, our analyses consistently suggest that firms affected by the Equality Law increased the female representation on the executive boards, on average.

5.3 Cross-sectional analyses

Next, we examine cross-sectional variation in our treatment effects. The mandatory disclosure of targets likely increased public attention to firms' stance on board gender diversity. Increased publicity of firms' targets likely generates greater investor awareness, media scrutiny and more pressure from stakeholders like FiDAR (Christensen et al., 2017; Fiechter et al., 2022). We construct four measures to capture higher pressure on firms. First, *listed & zero_2015* is an indicator taking the value of one for listed firms that had no woman on the executive board in 2015, and zero otherwise. Listed firms with no woman on the executive board likely face greater public pressure due to their greater visibility. Second, *large EB & listed & zero_2015* combines *listed & zero_2015* with *large_EB*, which is an indicator taking the value of one for companies that have

an executive board with more than 3 members.¹⁸ As mentioned earlier, firms with larger executive boards likely face greater pressure and/or may find it easier to add women. Third, we use *large_EB* individually as a proxy for higher pressure. Fourth, we use the indicator variable *state owned* to proxy for the possibility that the government uses its controlling equity stakes to push its social agenda. We fully interact our baseline variables in equation (1) with our proxies for high pressure. The interaction term *treated x post x high* measures the incremental effect of the high-pressure variables.

Table 7 Panel A presents the results. Columns 1 and 2 do not suggest a stronger treatment effect for listed firms with all-male executive boards. In fact, these firms appear to exhibit a more muted increase in gender diversity on the executive board. For the combined proxy *large_EB & listed & zero_2015*, we find that higher pressure firms have more pronounced treatment effects for both measures of female representation on the board, suggesting that executive board size might be an important driver for adding women. Accordingly, when we use a simple sample split based on executive board size (*large_EB*), we find an even more pronounced treatment effect on the extensive margin. Specifically, the results in column 6 suggest that for *large_EB* firms the likelihood of having at least one female ED increased by 16.1 percentage points after the implementation of the Equality Law, representing a 78.6 percent increase relative to the sample average. Overall, the findings suggest that the increase in executive board gender diversity is driven by firms with large executive boards, which partially explains the more muted and delayed treatment effect on *EB female share* throughout our analyses. Finally, we find evidence consistent with the government as a firm owner pushing for higher female representation in executive boards.

¹⁸ The three-member cutoff is motivated by the German regulator's cutoff for the more restrictive female quota mandate in FÜPoG II.

Specifically, state ownership increases the likelihood of at least one female ED by 21.6 percentage points.¹⁹ Table 7 Panel B shows comparable results for listed firms and after including additional control variables (*state_owned*, *big3_2015* and *size*).

5.4 The effect of FÜPoG II

In Section 2, we mentioned that, in the years following the implementation of the Equality Law, the German regulator was dissatisfied with firms' compliance with target disclosures and with many companies disclosing zero target quota. Therefore, in 2021 it passed an extension of the Equality Law (hereafter, FÜPoG II) that increased fines for non-disclosure of target quota and, for a subsample of listed and codetermined firms with an executive board size of more than three members, it mandated the appointment of at least one woman in the next executive director replacement after August 1, 2022. In our sample, sixty-three firms are affected by FÜPoG II (hereafter, FÜPoG II firms).²⁰ In this subsection, we examine how FÜPoG II firms responded to the softer disclosure mandate (FÜPoG I) and to the tighter mandate of FÜPoG II.

Table 1 Panel B shows that by 2020, a year before the passage of FÜPoG II, 73% of the FÜPoG II firms had already disclosed a non-zero target quota for the executive board compared to only 33% of the Non-FÜPoG II firms. To examine whether the disclosed positive target quota also materialize in higher executive board gender diversity in FÜPoG II firms, in Table 8 Panel A, we use two non-overlapping treatment indicators for FÜPoG II and Non-FÜPoG II firms and rerun equation (1) with the baseline controls (columns 1 and 2) and with the additional controls (columns 3 and 4). We find that executive board gender diversity increased significantly for FÜPoG II firms. Specifically, based on the estimates in columns 1 and 2, the proportion of female executives

¹⁹ However, this latter evidence is limited by the small sample of 15 state owned treated firms.

²⁰ According to the official website of the government, 66 firms were affected by FÜPoG II (<https://www.bmfsfj.de/bmfsfj/service/gesetze/zweites-fuehrungspositionengesetz-fuepog-2-164226>).

increased by three percentage points (i.e., by 36% relative to the sample average), while the likelihood of having at least one female ED increased by 21.8 percentage points (i.e., by 106% relative to the sample average) in the years following the implementation of the disclosure mandate of FÜPoG I. In contrast, the estimated treatment effects for Non-FÜPoG II firms are much smaller, but still significant on the extensive margin. These results are consistent with our earlier cross-sectional findings showing that the increase in female executive participation is driven primarily by firms with larger executive board sizes.

In Table 8 Panel B, we investigate *when* FÜPoG II firms started to increase executive board gender diversity. We find that, on the extensive margin, FÜPoG II firms responded already in 2016, i.e., immediately after the implementation of disclosure mandate, with the likelihood of at least one female ED gradually increasing over the years. We also observe that the treatment effect on *EB female share* materializes only in 2021 (columns 1 and 3), when there is also a significant jump in the likelihood of at least one woman on the executive board by about 18 percentage points (columns 2 and 4). It is possible that, although the FÜPoG II mandate became effective only from August 2022, the public debate surrounding FÜPoG II increased pressure on affected firms to accelerate their efforts to fulfil their previously disclosed targets.

To investigate this further, Table 8 Panel C shows the evolution of executive board gender diversity of FÜPoG II firms, separately for firms that disclosed a zero versus non-zero target, over the sample period. Interestingly, a few zero target FÜPoG II firms started to add female executives from 2018. However, in 2021 female executive board representation more than doubles in zero target firms.²¹ For non-zero target firms, we observe a first jump in executive board gender diversity

²¹ Specifically, in 2020 three out of 15 zero target FÜPoG II firms had at least one woman on the executive boards, while in 2021 this number increased to seven out of 15.

in 2016, followed by gradual yearly increases, and another jump in 2021. This descriptive evidence suggests that the public debate surrounding the FÜPoG II might have accelerated the affected firms' efforts to increase female representation on their executive boards, even before the FÜPoG II mandate became effective.

Table 8 Panel D tests this claim more formally by replicating the analyses of Panel A but further splitting the treated FÜPoG II and Non-FÜPoG II firms based on their disclosed target type and by adding an interaction with an indicator variable *post2* that takes the value of 1 for the years 2021 and 2022. In this specification, the interaction with *post* captures the treatment effect of FÜPoG I, while the interaction with *post2* measures any incremental treatment effects surrounding the passage of FÜPoG II. The results in Panel D are consistent with the descriptive evidence. Specifically, while we do not observe an increase in executive board gender diversity for zero target FÜPoG II firms following FÜPoG I, these firms appear to have responded to the passage of FÜPoG II. In contrast, non-zero target FÜPoG II firms responded both following the implementation of FÜPoG I and FÜPoG II. While we cannot identify a causal effect in these analyses, the results indicate that the debate around FÜPoG II might have had an incremental effect on firms' incentives to add women. However, we also observe a positive and significant treatment effect in the *post2* period for Non-FÜPoG II firms (*Non-FÜPoGII_nonzerotarget x POST2*), indicating that some of the increases in executive board gender diversity might have had occurred even in the absence of FÜPoG II. Alternatively, increasing peer pressure might have contributed to accelerating the inclusion of women on executive boards in all firms. We explore this possibility in section 6.

5.5 Interview evidence

Although our findings across various specifications consistently support the idea that the Equality law had an impact on treated firms, we cannot offer direct evidence of a causal effect resulting from the regulatory change. To gain more direct insights into the impact of the Equality

Law on shaping a firm's strategic agenda regarding the representation of female executives, we complement our quantitative analyses with qualitative interview data. A particularly interesting group of companies consists of those that lacked any female Executive Directors (ED) before the reform. While such firms with all-male boards should face increased public pressure to add women, at the same time they inherently might be less inclined to prioritize gender equality in their strategic planning in the first place. To examine *if and how* these specific companies reacted to the reform, we reached out to all the firms in our sample that had all-male boards in 2015 (174 in total). To ensure we targeted the appropriate respondents familiar with the company's strategic agenda, we specifically requested to be directed to company representatives responsible for or involved in the gender equality agenda. Consequently, we engaged with respondents from HR, investor relations, or sustainability departments. Of these companies, 13 agreed to an interview.

Asking for a 30-minute interview, we disclosed to our interview partners that we were interested in the evolution of the female representation in executive and non-executive boards over time, and in particular in the driving forces of their strategic agenda regarding gender equality and the rationales behind their target setting policies. Online appendix F summarizes the key findings from these semi-structured interviews.

A few insights are noteworthy. While all responding companies had all-male EBs in 2015, the choice of their disclosed target levels following FÜPoG I is truly diverse. Out of the 13 companies, four immediately disclosed a non-zero target in 2015. Conversely, another four companies consistently maintained a zero target throughout the entire sample period. The remaining firms began disclosing non-zero targets either in the second round of reporting in 2017 (3 companies) or shortly thereafter (2 companies). Most importantly for the purpose of our study, regardless of the disclosed target levels, a majority of the interviewees (11 out of 13) acknowledged the pivotal role of the Equality Law in shaping their strategic agenda. Certain companies affirmed

that the law played a crucial role in pushing them to address the matter and integrate it into their strategic agenda from early on. They emphasized that the introduction of the law exerted external pressure that was previously absent. Furthermore, the regulation was perceived as a catalyst, enabling significant structural transformations within their organizations. Other firms experienced a delayed impact of the law. Although it did not elicit immediate responses, it did initiate meaningful discussions. This eventually convinced top management about the severity of the issue, facilitating subsequent changes. Lastly, even respondents from companies adhering to a zero target quota acknowledged that the law successfully directed attention towards the subject. Nevertheless, in such organizations, the execution of changes has been gradual due to several reasons, including challenges in the talent pool, limited strategic interest in the subject, and political considerations surrounding the decision to maintain a zero target for female representation. In general, the insights gathered from our interviews offer additional support of a direct impact of introduction of the Equality Law on the increased levels of female representation in EBs that we have observed within the treated companies in our quantitative analyses.

6. EMPIRICAL ANALYSIS OF RESEARCH QUESTIONS 2 AND 3

6.1 Research Question 2: Which factors determine firms' likelihood to respond to the reform?

Next, we turn to the second research question related to the factors determining firms' likelihood to respond to the reform, i.e., setting non-zero target quotas. All affected firms face the requirement to set and disclose target quotas for their executive boards and the two subsequent management levels in 2015 for the first time and either fulfil them or explain deviations (*comply or explain approach*) until 2017. After that, they must revise their target quotas for all management levels. In practice, firms adapt their quota targets on a regular, even yearly, basis. After five years, firms must, again, either fulfill their target quotas or explain any deviations (Ministry of Family

Affairs and Ministry of Justice, 2015). To capture the probability for a firm to adopt a target quota for the management level, we estimate the following logistic regression equation:

$$\log(\text{non-zero target}_{f,l,t}) = \alpha \text{peer}_{i,t-1} + \beta_1 \text{talent}_{i,t} + \beta_2 \text{family}_{i,t} + \beta_3 \text{bus_envi}_{i,t} + \beta_4 \text{statusquo}_{f,t} + \text{Controls}_{f,t} + \epsilon \quad (2)$$

All variables are described in detail in Appendix A. The variable *non-zero target* is a dummy variable that is one for every firm f , which adopted a non-zero target quota for the respective level l (executive board level, the subsequent two management levels or the supervisory board) in year t , and zero otherwise.

Further, we build variables to account for the size of female talent pools accessible to the firms in our sample. We assume that these pools are industry-specific, since employee skills tend to be industry-bound (e.g., Jung and Subramanian, 2017). The *talent*, *family*, and *business environment* (*bus_envi*) variables therefore capture the existence and building of talent pools within the industry i of the respective firm in year t . Only the variable *state support* (*childcare*) is measured on the level of German states r in year t . The talent variables depict the firm's female talent pools, their usage, development, and exploitation. Talent potential (students) measures the proportion of female graduates in the field of studies that are relevant to the firm's industry, based on data from GovData. Talent potential (industry) depicts the share of women with higher education, i.e., university degrees, in the total female work population in the firm's industry, in which the firm has its headquarter. The variable talent misfit captures a discrepancy between skills in demand and skills in the talent pool; talent demand depicts the need for additional personnel; talent building and talent management stand for the firms' effort to build, e.g., by training, and manage talent, e.g., by formal performance evaluation and promotion programs. The family variables assess the possibilities to combine family life and job ambitions—especially for females who take the major

part of the care work in Germany (German Institute for Economic Research, 2022). The variable family compatibility depicts the degree of compatibility between job and family, e.g., by the provision of company day care or consideration of care responsibilities; family-friendly working times captures the possibility to manage working times flexibly. The variable state support (*childcare*) is the percentage of children between age 0 and 3 in state childcare in the German state (“Bundesland”), in which the respective firm has its headquarter. After the age of 3, almost all children (above 96%) visit governmental day care. The business environment variables represent the circumstances, under which the firms are currently working within a specific industry. The variable business environment change shows the level of transitions that the firms currently are exposed to; business environment innovation comprises improvements in production processes; business environment competitive pressure discloses the degree of rivalry, which generates competitive pressure.

statusquo is a vector of control variables that accounts for a firm’s starting position regarding female representation in top-rank positions in year t . It comprises the dummy variables *high share of female executive members* and *high share of female supervisory board members*. They take the value one if the share of women on the respective board is above the median value for all firms, and zero otherwise, to capture the firm’s relative initial position and potentially related societal perception (e.g., FidAR, 2023, Germany-wide ranking of female participation in management). Similar information for actual female participation on the other management levels is not disclosed and therefore not available. Furthermore, *statusquo* contains the variable *executive board size* that depicts the absolute number of executive board members to capture the absolute capacity of top-level management positions of a firm in the respective year t .

The *peer* dummy variable captures the outside pressure to act in a socially desirable manner. It is one if the majority of firms within the industry i (peer group) has adopted a non-zero target in the previous year $t-1$ for the respective management level (executive board (EB) and other management levels and supervisory board (SB)), zero otherwise. The *peer* variable is lagged one year to allow for information to distribute through public disclosure and, hence, to account for *bellwether effects*. If the majority of peer firms within the same industry discloses non-zero target quotas, industry benchmarks reach a tipping point and the nudge can unfold its full momentum.²² Due to the time-lag, the examination period starts in 2016, which incorporates first-time target disclosures. We use heteroscedasticity-robust standard errors (Abadie et al. 2023).

As for the previous analyses, the control variables include *topinst_2015* and *big3_2015* as defined in Section 5.2., an indicator variable that captures decreases in the respective target quota (*switch_target*), and firm size (see Appendix A).

Table 9 shows the probability to adopt non-zero target quotas for the different levels, i.e., a commitment to maintain the status quo at least. Column (1) concerns the executive board, columns (2) and (3) the first and second level below the executive board. To interpret the results, Table 9 also displays marginal *effects* for changes of the respective variable from the 10th percentile to the 90th percentile for all non-dummy variables, i.e., the factor variables, *talent potential(s)* and *state support (childcare)*, to allow for economic interpretations. The analyses show that peer behavior—and therefore benchmarks within an industry—is decisive in a firm’s decision to disclose a non-zero target quota, making peer behavior the driver of non-zero target adoption.

²² Untabulated tests show that using the percentage share of firms that adopted a target quota for the respective management level in the previous year within the peer group as the *peer* variable sheds qualitative similar and equally significant results, but with much smaller effect sizes.

Regarding talent pools, the marginal effect of an increase in *talent management* on the adoption probability of a target quota for the second management level below the executive board is 14.6%; a similar change in the *talent misfit* variable decreases the probability by 8.84%. Moreover, the probability of adopting a non-zero target quota for this management level significantly increases with every year, hinting at positive time effects. These results indicate a dependence on talent supply and the need for talent building on lower management levels, which often serve as talent factories for top-level positions. For the level directly below the executive board, the executive board size is positively related to the probability to adopt a respective quota at an almost 10% significance level. An increase in the executive board size by one seat would then increase the probability to adopt a non-zero target quota by 4.2%. On the one hand, this finding hints at the importance of the absolute absorption capacity for top-talents in the top management positions, on the other hand its actual effect is small due to the absolute low number of top-positions. However, a higher number of positions in the executive board increases the probability for women in the talent pipeline, i.e., the subsequent levels to the executive board, to hold an appointment in the future. For the executive board itself, a current higher share of female executive board members increases the probability to adopt a quota substantially.

Counterintuitively, the *family* variables are not positively related to the probability to adopt a target quota on all three management levels and the supervisory board. The descriptive statistics in Table 5 reveal that firms with non-zero target quotas tend to be based in German states with significantly lower state childcare coverage in the first place. Either higher level female managers might need to resort to privately financed childcare options (e.g., a nanny), rendering public childcare meaningless, or are less likely to have kids in the first place. Similarly, the *business environment* has only little impact on the probability to adopt a quota.

Next, we investigate the probability to adopt an ambitious target for the executive board, i.e., a target quota that exceeds the current share of females in executive board positions.²³ We adapt the regression equation (2) slightly to the research design:

$$\log(\text{ambitious target}_{f,l,t}) = \alpha \text{peer}_{i,t-1} + \beta_1 \text{talent}_{i,t} + \beta_2 \text{family}_{i,t} + \beta_3 \text{bus_envi}_{i,t} + \beta_4 \text{statusquo}_{f,t} + \text{Controls}_{f,t} + \epsilon \quad (3)$$

Consequently, the dependent dummy variable is one for every firm f , which adopted an executive board target quota for the current year t , which is above the share of female members in the previous year. Again, the *peer* variable captures the outside pressure to act in a socially desirable manner. It is one if the majority of firms within the industry i (peer group) has adopted an ambitious quota for the executive board in the previous year $t-1$.²⁴ Due to the time lag, the examination period covers years between 2016 and 2021, but not the reform year 2015.

To allow a meaningful interpretation of results, Table 10 again displays marginal *effects* for changes of the respective variable from the 10th percentile to the 90th percentile for the factor variables, *talent potential(s)* and *state support (childcare)*. Columns (1) and (2) shows the regression results for a specification without a peer variable as an independent variable and for the peer variable as the only independent variable. Column (3) displays the results for the full empirical equation (3).

Compared to the previously discussed results, peer behavior plays only a smaller, yet substantial role in the probability of adopting a target quota for the executive board. If the majority

²³ As described previously, we cannot repeat this analysis for the two management levels subsequent to the executive board, as shares of females at these levels are not disclosed.

²⁴ Untabulated tests show that using the percentage share of firms that adopted a target quota for the executive board in the previous year within the peer group as the *peer* variable sheds qualitative similar and equally significantly results, but with much smaller effect sizes.

of industry peers has adopted a non-zero target quota, the probability to adopt a non-zero quota increases by 90% (Table 9). However, if the majority of industry peers has adopted an ambitious target quota, the probability to adopt an ambitious quota increases only by between 53.3% (isolated analysis, Table 10, column (2)) and 71.7% (full analysis, Table 10, column (3)).

As for the non-zero quota, talent pools are not the main driver of the probability to adopt an ambitious quota. Nonetheless, the marginal effect of an increase in *potential (high skilled)* on adoption probability is 3.7%, significant at the 5% level, when leaving the impact of peer behavior aside. More strikingly, the family-related variables are positively related to the adoption probability—a marginal increase in *family compatibility* has an effect of 33.8%, and *family friendly working times* has an effect of 6.0%. Thus, while these factors did not make a difference for the adoption probability of non-zero quota, they are important if a firm wants to go the extra mile and increase female participation in top-level position over time. Furthermore, an already high share of female executives is negatively related to the adoption probability for ambitious targets, contrary to the adoption probability of a non-zero target. Moreover, the marginal effect of an increased board size is positive for the probability to adopt an ambitious target, again underlining the importance of the absolute absorption capacity for top talent. These insights combined might hint at the general willingness of firms to maintain the status quo if they are already surpassing it. Furthermore, the findings might indicate that well-performing firms are eager to outpace competitors more than probably necessary.

Overall, the findings indicate that the willingness to increase the share of women in top-levels is much less dependent on peer behavior than the commitment to at least maintain the status quo. The disclosure of ambitious quotas might rather hint at a closure of value-action gaps than at cheap talk.

6.2 Research Question 3: Which factors determine the level of target achievement concerning the disclosed target quotas?

Table 5 already shows the constant progress in the target setting process. Between 2015 and 2021, a growing number of firms committed to disclosing non-zero target quotas that simultaneously increased over time for all management levels. These findings indicate a growing effectiveness of the German regulatory intervention, which gains momentum over time.

The level of target achievement is measured as the percentage of target attainment. For example, if a firm set a target quota of 25% for the executive board and eventually reached its target, the achievement level is 100%. Again, the analysis is only feasible for the executive board, as firms usually do not disclose the current share of females on the other management levels. As Table 5 also shows, the level of target achievement remains relatively constant over time, with a peak in 2016, the first year after the reform. However, as the number of firms, which discloses non-zero quotas, as well as the level of target quotas grows over time, the net effect of the regulatory intervention is positive for female participation. Furthermore, firms exhibit increasing efforts to fix and fill leaky pipelines.

In a final analysis, we evaluate which factors are related to the level of target quota achievement between 2016 (the first year after the reform) and 2021. We use OLS to estimate the following regression equation:

$$\text{target achievement}_{f,t} = \alpha \text{peer}_{i,t-1} + \beta_1 \text{talent}_{i,t} + \beta_2 \text{family}_{i,t} + \beta_3 \text{bus_envi}_{i,t} + \beta_4 \text{statusquo}_{f,t} + \text{Controls}_{f,t} + \epsilon \quad (4)$$

In equation (4), the variable *target achievement* of firm *f* in year *t* serves as the dependent variable. All other variables are as described in Section 5.2, except for the *peer* variable. The *peer*

variable is constructed in the spirit of Tomar (2023). It is the peer (industry) normalized level of target achievement in the previous year $t-1$, to account for information distribution.

Table 11 provides the results. Columns (1) and (2) show the regression results for a specification without a peer variable as an independent variable and for the peer variable as the only independent variable. Column (3) displays the results for the full empirical equation (4). To capture the explanatory power of *talent*, *family*, *business environment* and *status quo* variables in conjunction, we show the respective decomposed R^2 (Shapley value).

The results for the estimation without the *peer* variable reveal that *high skilled potential*, as in the previous analysis, and *talent management* are positively associated with target achievement on the 5% significance level. In contrast, *talent misfit* is negatively associated at the 10% significance level. Furthermore, *family friendly working times* and *innovation power* exhibit a positive relation to target achievement (10% significance level). A superior starting position, i.e., a comparably *high share of female executive board members* and a bigger *executive board size* with more capacity for (female) talents, shows a positive relation to target achievement. This finding is consistent with that of our difference-in-differences analyses showing that primarily firms with larger executive boards increased female executive board gender diversity. Interestingly, also the target quota level itself is positively associated with target achievement, underlining the notion that ambitious firms are committed to attaining their targets.

The *peer* variable is decisive for the level of target achievement in line with all previous findings. Once it is added to the empirical equation, the explanatory power of *talent* and *family* variables halves from decomposed R^2 7.94% to 3.61% (Shapley value), from 2.17% to 0.92% respectively. The firm's *status quo* loses even more explanatory power to the *peer* variable and declines from the decomposed R^2 of 88.39% to 29.23% (Shapley value). Nevertheless, a

comparably *high share of female executive board members* and a bigger *executive board size* still exhibit a positive relation to the level of target achievement.

Overall, these findings underline the impact of peer behavior, which sets the ball rolling for the Equality Law to unfold its power over time. Since the law does not employ inevitable deadlines, as for example Norway (Bertrand et al. 2019) or California did (Greene et al. 2020), it seems to unfold its momentum more slowly, but maybe also more sustainably, promoting female talents already on lower hierarchical management levels.

7. CONCLUSION

This paper examines a first-time regulatory action in Germany in 2015 that (1) directly targets high-level executive positions in firms and (2) uses nudging through disclosure instead of penalty mechanisms to encourage firms to increase the share of females in in positions of economic power, in which they are strongly underrepresented compared to their 50%-share in society. Affected firms must self-determine a gender quota for the executive board and the two subsequent management levels, disclose and fulfill it by 2017. Hereby, the German government implements a nudge, which aims to incentivize companies to re-think their current personnel policies and make use of the talent pools at their disposal. On the one hand, the nudge could draw firms' attention to currently underused pools of talented women and change their personnel policies in socially desired direction; on the other hand, firms might classify such changes as disproportionately costly and seek excuse from societal disapproval in the behavior of their peers.

We find that firms affected by the reform responded to the nudge, on average, and increased the female representation on their executive boards. This increase is primarily driven by firms with larger executive boards and firms with state ownership. We also document that firms affected by the stricter FüPoG II mandate to add at least one female executive director after August 2022 had

in fact already responded to the earlier disclosure mandate by disclosing non-zero targets and adding women to their executive boards. Nevertheless, the public debate surrounding FöPoG II has further accelerated these firms' efforts to fulfill their target quota and pushed zero-target firms to add women to their executive boards, even before FöPoG II became mandatory.

We also find that an increasing number of firms reacts over time and discloses constantly growing target quotas for all management levels. The probability of a firm to react to the nudge by implementing a non-zero or, better, an ambitious quota, and the subsequent target achievement are highly dependent on the behavior and performance of peer firms, against which the respective firm is benchmarked. Adopting an ambitious quota is driven a little less by peer decisions, indicating that the implementation arose from true commitment, which more firms make over time. This insight suggests that the peer behavior accelerates the effectiveness of the regulatory intervention, eventually leading to rethinking of previous personnel decisions and breaking old boundaries.

Our findings cautiously suggest that the nudging approach the German government took to increase the share of women in high-rank positions is effective but does not convey immediately visible results—that can also be not as effective as intended, e.g., the appointment of alibi women to fulfil strict requirements fast. Our findings can help to anticipate similar reforms or law changes that might be thought of in the recent proposal for a corporate sustainability reporting directive of the European Commission.

APPENDIX

Figure 1: Timeline of events

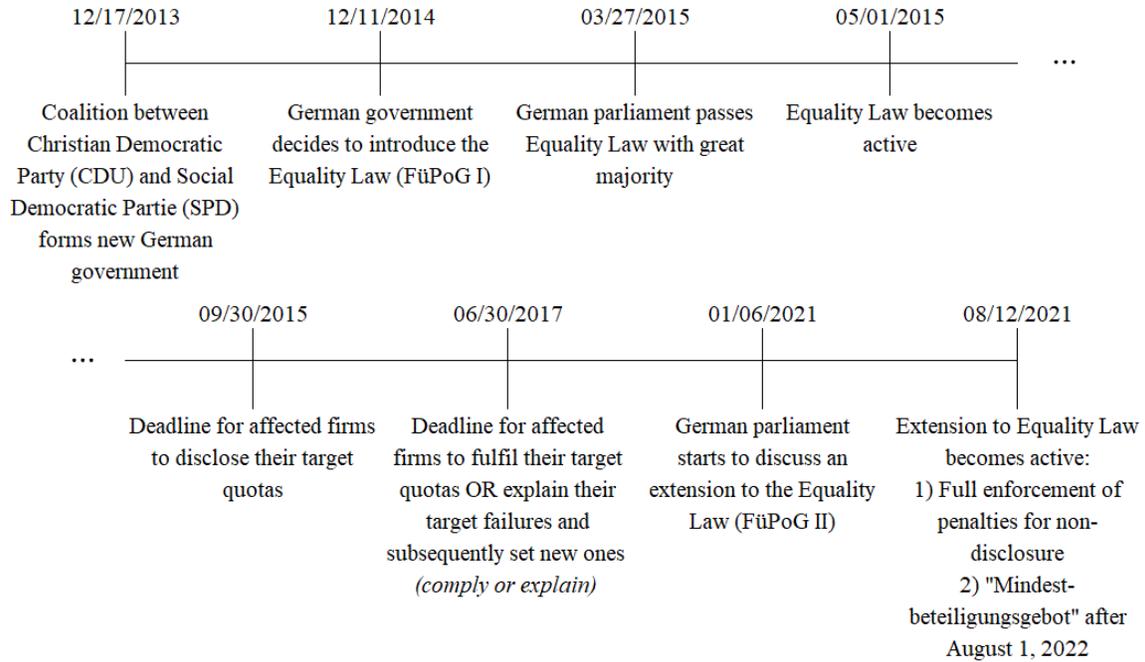
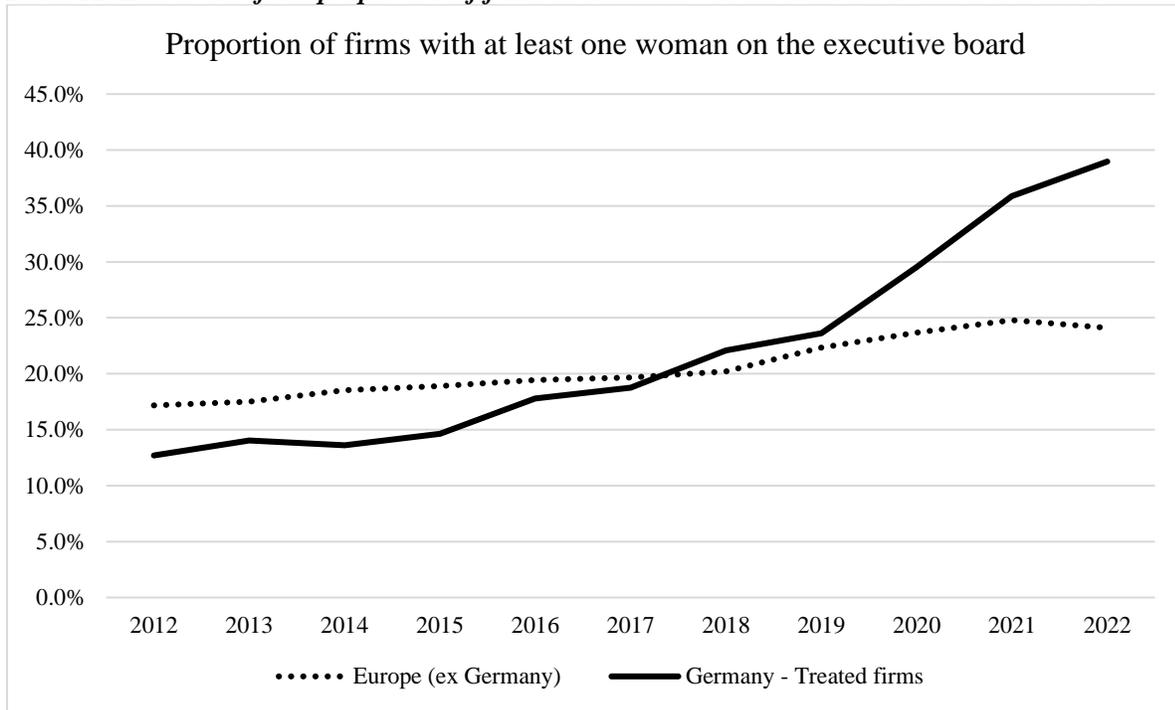


Figure 2: Evolution of women participation share in the executive and supervisory boards

Panel A. Evolution of the proportion of firms with at least one woman on the executive board



Panel B. Evolution of the average share of women in the executive board

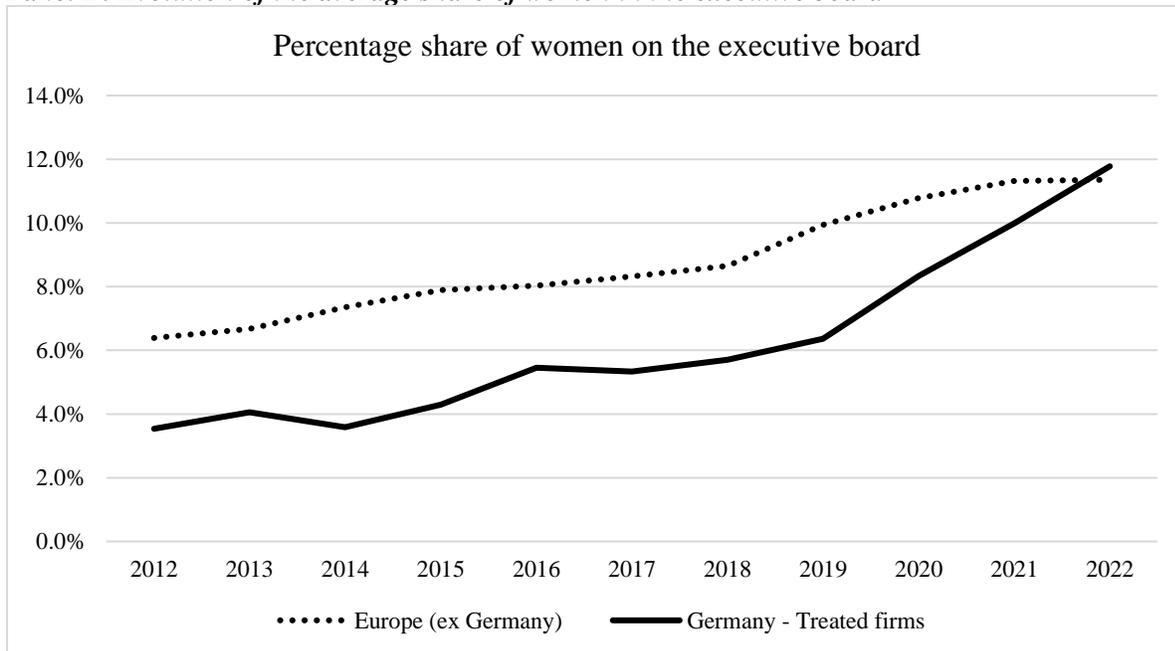
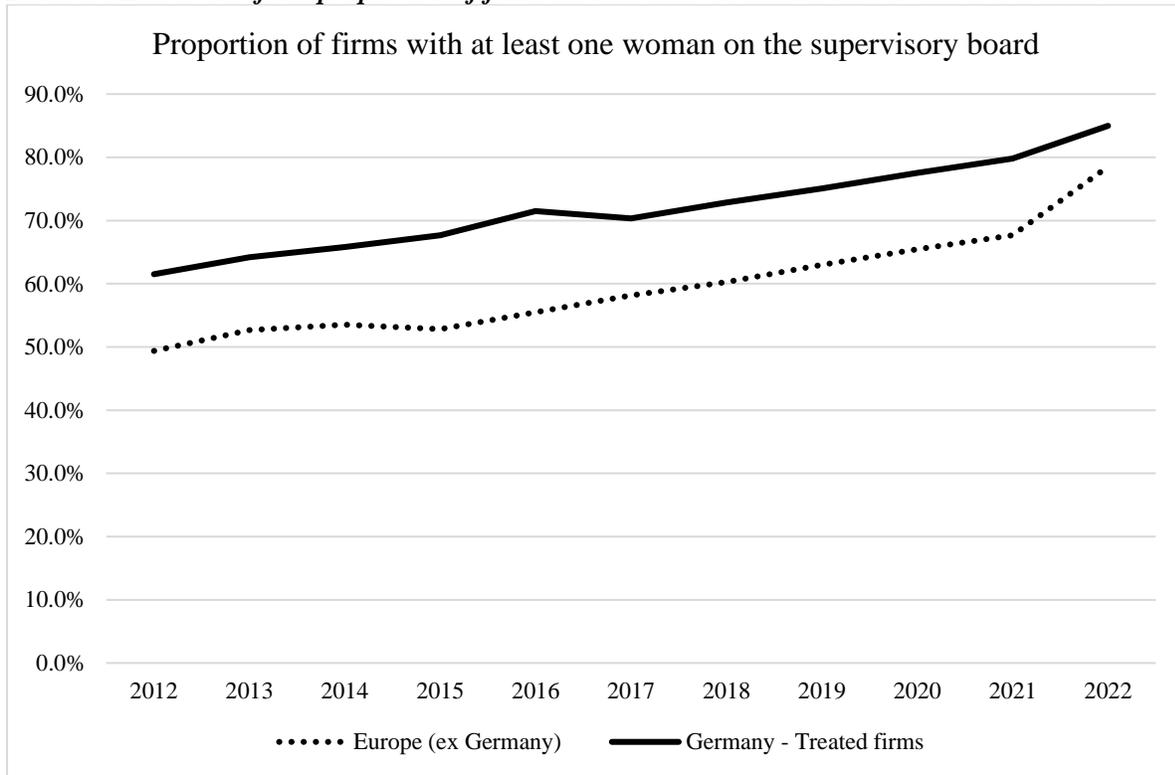


Figure 2 (continued)

Panel C. Evolution of the proportion of firms with at least one woman on the executive board



Panel D. Evolution of the average share of women in the executive board

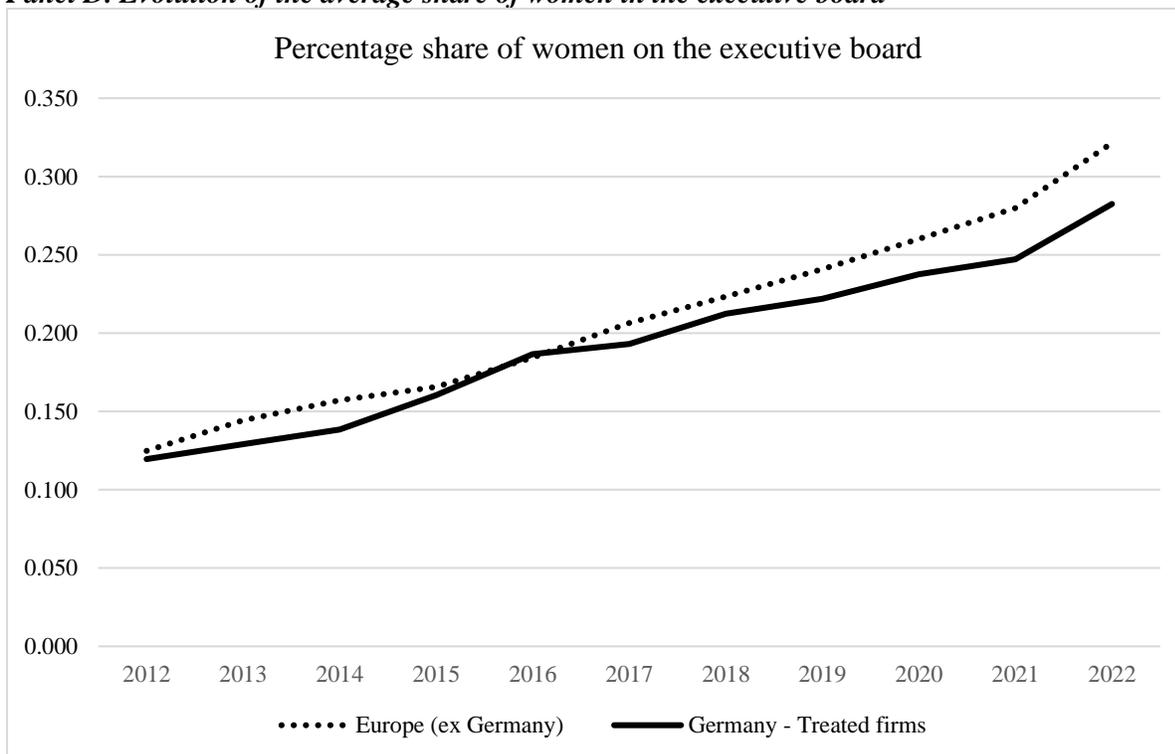


Table 1 Selection for the German sample firms

This table summarizes the steps in our sample selection procedure to arrive at the German sample for the following analyses.

Panel A. Firm selection (research questions 1, 2, and 3)

Description	Remain.	Disclose	Executive board	Executive board target
	obs.	executive board target	target quota	quota above zero in any year between 2015 and 2021
	Firms	Firms	Firms	Firms
(1) All available firms affected by the reform	465	437	236 (54.0%)	201 (46.0%)
(2) Less firms without BoardEx data (firms in diff-in-diff analysis, RQ 1)	315	311	161 (51.8%)	150 (48.2%)
(3) Less firms without variables from IAB establishment panel and less non-disclosing firms (Appendix A) (RQ 2 and 3)	258	258	141 (55.7%)	117 (45.3%)

Panel B. Distribution of first-time adoption of non-zero target by year (DiD sample)

	No. of treated firms	cum. % of total	FüPoGII firms	cum. % of FüPoG	Non-FüPoGII firms	cum. % of non-FüPoGII
2015	81	25%	29	46%	52	20%
2016	3	26%	0	46%	3	21%
2017	27	34%	12	65%	15	26%
2018	6	36%	2	68%	4	28%
2019	6	38%	1	70%	5	30%
2020	11	41%	2	73%	9	33%
2021	11	44%	0	73%	11	37%
2022	5	46%	0	73%	5	39%
Total	150		46		104	
Total treated firms	328		63		265	

Table 2 Descriptive statistics for European sample firms

This table presents descriptive statistics for European firms with available data on BoardEx for the sample period from 2012 to 2022. Panel A summarizes the board characteristics for the executive board (EB) and the supervisory board (SB) by country. Panel B (Panel C) shows the yearly development of the female representation on the executive (supervisory) board for the pooled sample and separately for the control and treated firms. Panel D (Panel E) summarizes the control variables for the pooled sample (separately for the control and treated firms). All variables are defined in Appendix A.

Panel A. Descriptive statistics of board characteristics									
Country	Unique Firms	Firm-year obs.	EB female share		SB female share		executive board size	super- visory board size	board size
	N	N	Mean	Median	Mean	Median	Mean	Mean	Mean
Austria	54	509	0.049	0.000	0.196	0.200	3.483	10.550	14.033
Belgium	106	892	0.117	0.000	0.278	0.308	1.777	8.084	9.861
Cyprus	24	201	0.104	0.000	0.153	0.000	2.075	4.945	7.020
Czech Rep.	8	69	0.072	0.000	0.155	0.111	4.232	6.609	10.841
Denmark	54	460	0.065	0.000	0.240	0.250	2.967	8.433	11.400
Finland	14	92	0.147	0.000	0.224	0.226	2.065	7.413	9.478
France	479	3,985	0.101	0.000	0.375	0.400	2.080	7.515	9.595
Germany	405	3,870	0.061	0.000	0.182	0.167	3.491	8.702	12.193
Greece	43	408	0.070	0.000	0.102	0.000	2.613	6.696	9.309
Hungary	11	89	0.080	0.000	0.136	0.000	2.056	5.584	7.640
Italy	154	1,329	0.071	0.000	0.340	0.364	2.470	8.355	10.825
Luxembourg	44	368	0.045	0.000	0.130	0.000	2.274	5.666	7.940
Monaco	6	53	0.038	0.000	0.134	0.125	2.415	5.415	7.830
Netherlands	124	1,112	0.101	0.000	0.226	0.250	2.722	5.977	8.699
Norway	20	142	0.074	0.000	0.330	0.375	1.944	4.761	6.704
Poland	37	339	0.120	0.000	0.158	0.125	5.516	7.799	13.316
Portugal	37	329	0.110	0.000	0.200	0.200	3.705	6.778	10.483
Rep. Ireland	95	869	0.066	0.000	0.174	0.182	2.509	6.336	8.845
Russian Fed.	66	543	0.060	0.000	0.084	0.000	2.987	8.155	11.142
Spain	122	1,079	0.044	0.000	0.227	0.222	1.918	8.915	10.833
Sweden	81	609	0.055	0.000	0.310	0.308	1.209	7.427	8.635
Switzerland	99	712	0.054	0.000	0.148	0.125	2.066	6.188	8.254
Turkey	37	319	0.051	0.000	0.129	0.111	1.498	7.542	9.041
United Kingdom	2,056	17,808	0.091	0.000	0.157	0.000	2.649	4.128	6.776
Total	4,176	36,186	0.084	0.000	0.202	0.182	2.626	5.956	8.582

Table 2 Descriptive statistics for European sample firms (continued)

Panel B. Evolution of female participation on the executive board (EB)								
	Pooled sample		Europe (ex Germany)		Germany All Firms		German Treated Firms	
	EB	at least	EB		EB	at least	EB	
	female	one	female	at least one	female	one	female	at least one
	share	female	share	female ED	share	female ED	share	female ED
		ED						
2012	0.061	0.168	0.064	0.172	0.041	0.140	0.035	0.127
2013	0.065	0.173	0.067	0.175	0.047	0.152	0.041	0.140
2014	0.070	0.181	0.074	0.185	0.044	0.149	0.036	0.136
2015	0.076	0.186	0.079	0.189	0.049	0.158	0.043	0.146
2016	0.078	0.194	0.080	0.194	0.058	0.186	0.055	0.178
2017	0.080	0.196	0.083	0.197	0.054	0.190	0.053	0.188
2018	0.083	0.203	0.086	0.202	0.055	0.211	0.057	0.221
2019	0.095	0.223	0.099	0.223	0.061	0.224	0.064	0.236
2020	0.104	0.241	0.108	0.237	0.077	0.272	0.083	0.295
2021	0.111	0.258	0.113	0.248	0.094	0.338	0.100	0.359
2022	0.113	0.259	0.114	0.241	0.109	0.364	0.118	0.390
Total	0.084	0.205	0.087	0.204	0.061	0.212	0.061	0.215

Panel C. Evolution of female participation in the supervisory board (SB)								
	Pooled sample		Europe (ex Germany)		Germany All Firms		Germany Treated Firms	
	SB	at least one	SB		SB	at least one	EB	
	female	female	female	at least one	female	female	female	at least one
	share	NED	share	female NED	share	NED	share	female NED
2012	0.124	0.504	0.125	0.494	0.115	0.581	0.120	0.615
2013	0.142	0.536	0.144	0.527	0.123	0.609	0.129	0.642
2014	0.154	0.544	0.157	0.535	0.132	0.618	0.139	0.658
2015	0.164	0.539	0.166	0.528	0.152	0.635	0.160	0.677
2016	0.183	0.566	0.184	0.555	0.175	0.665	0.187	0.715
2017	0.204	0.590	0.206	0.581	0.184	0.667	0.193	0.703
2018	0.221	0.612	0.223	0.603	0.201	0.694	0.212	0.729
2019	0.237	0.639	0.241	0.630	0.210	0.713	0.222	0.751
2020	0.256	0.664	0.260	0.654	0.223	0.739	0.238	0.775
2021	0.275	0.687	0.280	0.676	0.238	0.771	0.247	0.798
2022	0.315	0.792	0.321	0.785	0.275	0.831	0.282	0.850
Total	0.202	0.597	0.204	0.587	0.182	0.680	0.192	0.717

Panel D. Descriptive statistics of test variables for the pooled sample						
Variable	N	Mean	p75	p50	p25	SD
zero_2015	36,186	0.813	1.000	1.000	1.000	0.390
one_2015	36,186	0.161	0.000	0.000	0.000	0.368
listed	36,186	0.744	1.000	1.000	0.000	0.437
SB female share pre-2016	36,186	0.132	0.220	0.095	0.000	0.156
EB size pre-2016	36,186	0.798	1.099	0.693	0.693	0.574
state owned	36,186	0.034	0.000	0.000	0.000	0.182
big3_2015 (in %)	24,400	2.953	4.346	0.352	0.000	4.572
topinst_2015 (in %)	24,400	6.662	10.832	2.665	0.000	8.786
size	24,400	6.195	8.145	6.224	4.176	2.827

Table 2 Descriptive statistics for European sample firms (continued)

	Control firms			Treated firms		
	N	Mean	SD	N	Mean	SD
zero_2015	32,964	0.809	0.393	3,222	0.852	0.355
one_2015	32,964	0.164	0.370	3,222	0.136	0.342
listed	32,964	0.730	0.444	3,222	0.882	0.323
SB female share pre-2016	32,964	0.133	0.159	3,222	0.123	0.111
EB size pre-2016	32,964	0.764	0.570	3,222	1.137	0.504
state owned	32,964	0.033	0.179	3,222	0.047	0.212
big3_2015 (in %)	21,665	2.943	4.614	2,735	3.039	4.228
topinst_2015 (in %)	21,665	6.541	8.626	2,735	7.620	9.911
size	21,665	6.088	2.855	2,735	7.039	2.444

Table 3 Descriptive statistics for firm-years of German sample firms (research questions 2 and 3)

This table presents descriptive statistics for firm-year observations in the analyses regarding target setting and target achievement for all **258 firms**. Table 4 splits the firm-year observations by executive board target quota equal and above zero.

	N	Mean	SD	Min	Max
Quotas					
target quota EB	1539	0.082	0.124	0	1
target quota 1 st level below EB (M1)	1379	0.177	0.111	0	0.670
target quota 2 nd level below EB (M2)	1112	0.212	0.106	0	0.500
target quota supervisory board	1044	0.147	0.132	0	0.500
fixed quota supervisory board	1539	0.341	0.474	0	1
Talent-					
potential (students)	1539	0.454	0.129	0.278	0.726
potential (high skilled)	1539	0.875	0.126	0.595	1.758
misfit	1539	0.346	0.901	-1.525	3.417
demand	1539	0.060	0.810	-1.524	2.298
building	1539	0.256	0.600	-1.151	1.798
management	1539	0.005	0.582	-1.437	1.288
Family-					
compatibility	1539	0.132	0.507	-1.172	1.28
friendly working hours	1539	0.260	0.007	0.239	0.277
state support (childcare)	1539	0.317	0.070	0.257	0.583
Business Environment					
change	1539	0.556	1.034	-1.255	2.201
innovation	1539	0.075	0.008	0.049	0.104
competitive pressure	1539	0.070	0.008	0.044	0.093
Status Quo					
EB female share	1539	0.058	0.126	0	1
SB female share	1539	0.208	0.157	0	0.666
executive board size	1539	3.450	1.728	1	12
year	1539	2017.913	2.010	2015	2021

Table 4 Descriptive statistics for firm-years of German sample firms, split by their target quotas (research questions 2 and 3)

This table presents descriptive statistics for all **258 firms** in the analyses regarding target setting (RQ 2) and target achievement (RQ 3). Panel A contains firm-year observations with a target quota for executive boards equal zero. Panel B contains firm-year observations with a target quota for executive boards above zero. The variables are defined in Appendix A. ***, **, and * denote significant differences at the 1%, 5%, and 10% levels, respectively.

	Panel A. Firms with target quota for executive boards equal zero						difference t	Panel B. Firms with target quota for executive boards above zero				
	ΣN	N	Mean	SD	Min	Max		N	Mean	SD	Min	Max
Quotas												
target quota executive board (EB)	1539	991	0	0	0	0	75.452***	548	0.230	0.096	0.090	1
target quota 1 st level bl. EB (M1)	1379	875	0.162	0.118	0	0.670	6.803***	504	0.203	0.093	0	0.500
target quota 2 nd level bl. EB (M2)	1112	675	0.193	0.112	0	0.500	7.574***	437	0.241	0.088	0	0.500
target quota supervisory board SB	1044	767	0.115	0.125	0	0.333	14.314***	277	0.236	0.109	0	0.500
fixed quota supervisory board	1539	991	0.230	0.421	0	1	13.013***	548	0.542	0.499	0	1
Talent-												
potential (students)	1539	991	0.455	0.129	0.278	0.671	-0.633	548	0.451	0.130	0.278	0.726
potential (high skilled)	1539	991	0.867	0.121	0.595	1.758	3.259***	548	0.889	0.134	0.595	1.642
misfit	1539	991	0.305	0.903	-1.525	3.417	2.233***	548	0.421	0.892	-1.525	2.384
demand	1539	991	-0.013	0.787	-1.524	2.298	4.829***	548	0.193	0.835	-1.524	2.298
building	1539	991	0.208	0.566	-1.151	1.798	4.235***	548	0.343	0.649	-1.151	1.689
management	1539	991	-0.035	0.567	-1.437	1.288	3.639***	548	0.077	0.601	-1.437	1.288
Family-												
compatibility	1539	991	0.105	0.479	-1.172	1.280	2.774***	548	0.180	0.552	-1.091	1.198
friendly working hours	1539	991	0.260	0.007	0.239	0.277	-0.426	548	0.259	0.006	0.243	0.276
state support (childcare)	1539	991	0.323	0.077	0.257	0.583	-4.688***	548	0.305	0.052	0.257	0.579
Business Environment												
change	1539	991	0.555	1.055	-1.255	2.201	0.0431	548	0.558	0.996	-1.255	2.201
innovation	1539	991	0.075	0.008	0.049	0.104	3.181***	548	0.076	0.008	0.056	0.104
competitive pressure	1539	991	0.071	0.009	0.044	0.093	-3.992***	548	0.069	0.008	0.044	0.091
Status Quo												
EB female share	1539	991	0.014	0.068	0	1	26.785***	548	0.139	0.161	0	1
SB female share	1539	991	0.174	0.154	0	0.666	10.789***	548	0.026	0.142	0	0.666
executive board size	1539	991	2.967	1.231	1	9	15.926***	548	4.325	2.114	1	12

Table 5 Descriptive statistics target development between 2015 and 2021, split by their target quotas (research questions 2 and 3)

This table presents the development of the **mean self-determined** targets by year for all **258 firms** in the analyses regarding target setting (RQ 2) and target achievement (RQ 3).

Panel A. Firms with target quota for executive boards equal zero in the respective year															
	$\sum N$	N	2015	N	2016	N	2017	N	2018	N	2019	N	2020	N	2021
Mean quotas															
target quota executive board (EB)	991	183	0	161	0	143	0	137	0	138	0	120	0	109	0
target quota 1 st level bl. EB (M1)	875	162	0.142	142	0.150	127	0.166	123	0.167	122	0.167	106	0.174	92	0.194
target quota 2 nd level bl. EB (M2)	675	130	0.182	112	0.190	97	0.199	93	0.194	92	0.194	80	0.199	71	0.199
Panel B. Firms with target quota for executive boards above zero in the respective year															
	$\sum N$	N	2015	N	2016	N	2017	N	2018	N	2019	N	2020	N	2021
Mean quotas															
target quota executive board (EB)	548	64	0.229	57	0.228	75	0.228	80	0.233	84	0.220	92	0.228	96	0.240
target quota 1 st level bl. EB (M1)	504	61	0.177	53	0.181	68	0.193	72	0.204	77	0.206	85	0.219	75	0.257
target quota 2 nd level bl. EB (M2)	437	53	0.221	45	0.218	59	0.236	63	0.245	68	0.248	74	0.249	75	0.257
achievement (EB) for ambitious firms	282			30	0.231	46	0.180	51	0.145	51	0.125	54	0.127	50	0.158

RESEARCH QUESTION 1: Does the mandate to disclose a self-determined gender quota increase the proportion of women in executive boards?

Table 6: The average impact of the Equality Law on the female representation on the executive board

This table presents the results for the differences-in-differences analyses of shares of females in executive boards from 2012 to 2022. The dependent variables are the share of women on the executive boards (*EB female share*) and an indicator for firm-years with at least one female executive director (*at least one female ED*). The variable *post* is an indicator variable taking the value of one for 2016 onward (i.e., after the implementation of the Equality Law), and *treated* is an indicator variable taking the value of one for German firms affected by the reform, and 0 otherwise. The interaction between *post* and *treated* measures the average treatment effect of the Equality Law (see Table 2). All regressions include firm and sector-year fixed effects (FE). All control variables are defined in Appendix A. Panel A presents the results using the baseline specification in accordance with equation 1. EU x Year controls for EU-year-specific trends, AT_CH_GER x Year for Germanic regional trends (i.e., in Austria, Germany, and Switzerland). Panel B reports coefficient estimates from regressions of our two dependent variables on the interactions between *treated* and indicators for each year from 2012 through 2022, except for 2015, which is our benchmark period. Standard errors are clustered at the firm level. *t* statistics are reported in parentheses. ***, **, and * denote significant differences at the 1%, 5%, and 10% levels, respectively.

Panel A. Differences-in-differences analysis of female representation on the executive board						
Dependent variable	(1) EB female share	(2) at least one female ED Full Sample	(3) EB female share	(4) at least one female ED Full Sample	(5) EB female share	(6) at least one female ED Full Sample
VARIABLES	Full Sample	Sample	Full Sample	Sample	Full Sample	Sample
treated x post	0.004 (0.599)	0.073*** (4.111)	0.003 (0.516)	0.072*** (4.014)	0.021** (1.986)	0.078*** (2.926)
zero_2015 x post	0.069*** (2.621)	0.172*** (4.492)	0.069*** (2.609)	0.171*** (4.464)	0.070*** (2.649)	0.172*** (4.470)
one_2015 x post	-0.003 (-0.121)	-0.054 (-1.318)	-0.004 (-0.133)	-0.055 (-1.345)	-0.003 (-0.099)	-0.054 (-1.324)
listed x post	-0.010 (-1.629)	-0.029** (-2.339)	-0.010 (-1.612)	-0.029** (-2.315)	-0.010 (-1.637)	-0.029** (-2.306)
SB female share pre-2016 x post	0.067*** (4.294)	0.134*** (4.427)	0.066*** (4.256)	0.132*** (4.358)	0.066*** (4.189)	0.132*** (4.346)
EB size pre-2016 x post	0.017*** (3.342)	0.026** (2.534)	0.017*** (3.195)	0.024** (2.336)	0.017*** (3.284)	0.024** (2.326)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
EU x Year			Yes	Yes	Yes	Yes
AT_CH_GER x Year					Yes	Yes
Observations	36,175	36,175	36,175	36,175	36,175	36,175
Excluded singletons	11	11	11	11	11	11
Adj. R-squared	0.606	0.614	0.606	0.614	0.606	0.614

Panel B. Analysis of trends in female representation on the executive board

Dependent variable VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	EB female share Full Sample	at least one female ED Full Sample	EB female share Full Sample	at least one female ED Full Sample	EB female share Full Sample	at least one female ED Full Sample
2012 x treated	0.011 (1.221)	0.005 (0.217)	0.012 (1.332)	0.008 (0.355)	0.003 (0.255)	0.005 (0.147)
2013 x treated	0.007 (0.963)	0.002 (0.084)	0.008 (1.045)	0.004 (0.189)	0.006 (0.502)	0.020 (0.696)
2014 x treated	-0.006 (-1.090)	-0.012 (-0.795)	-0.006 (-1.003)	-0.011 (-0.730)	-0.013 (-1.482)	-0.013 (-0.605)
2016 x treated	0.003 (0.597)	0.016 (1.265)	0.004 (0.703)	0.017 (1.340)	0.001 (0.168)	0.013 (0.714)
2017 x treated	-0.000 (-0.047)	0.026* (1.684)	0.000 (0.048)	0.027* (1.729)	0.010 (0.957)	0.042* (1.804)
2018 x treated	0.000 (0.030)	0.055*** (2.837)	0.000 (0.052)	0.056*** (2.835)	0.016 (1.378)	0.080*** (2.672)
2019 x treated	-0.004 (-0.553)	0.053** (2.363)	-0.005 (-0.609)	0.052** (2.317)	0.010 (0.700)	0.079** (2.256)
2020 x treated	0.007 (0.764)	0.098*** (3.939)	0.007 (0.719)	0.097*** (3.879)	0.030** (1.977)	0.122*** (3.052)
2021 x treated	0.022** (2.307)	0.154*** (5.772)	0.022** (2.268)	0.153*** (5.728)	0.046*** (2.746)	0.149*** (3.338)
2022 x treated	0.027* (1.947)	0.151*** (4.677)	0.026* (1.876)	0.150*** (4.623)	0.045* (1.951)	0.153*** (2.852)
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
EU x Year			Yes	Yes	Yes	Yes
AT_CH_GER x Year					Yes	Yes
Observations	36,175	36,175	36,175	36,175	36,175	36,175
Excluded singletons	11	11	11	11	11	11
Adj. R-squared	0.606	0.615	0.606	0.615	0.606	0.615

Table 7: Cross-sectional variation in the impact of the Equality Law on the female representation on the executive board

This table presents the results for a triple differences-in-differences that allows the treatment effect to vary with proxies for high pressure to add women to the executive board. *high* is equal to one of the following high-pressure proxies: *listed & zero_2015* is equal to one for listed firms with zero female executive directors at the end of 2015, and zero otherwise. *large EB & listed & zero_2015* is equal to one for listed firms with zero female executive directors at the end of 2015 and an average executive board size of more than three members in the period from 2012 to 2015, and zero otherwise. *large EB* is equal to one for firms with an average executive board size of more than three members in the period from 2012 to 2015, and zero otherwise. *state owned* is one for state-owned firms, and zero otherwise. The regression models are fully interacted with the respective high-pressure variables. Panel A shows the results using baseline controls only. Baseline controls refer to the control variables used in our baseline specification presented in Table 6. Panel B shows the results using additional controls and listed firms only. Additional control variables are *state owned*, *big3_2015*, and *size*. All control variables are defined in Appendix A. Standard errors are clustered at the firm level. *t* statistics are reported in parentheses. ***, **, and * denote significant differences at the 1%, 5%, and 10% levels, respectively.

Panel A. Baseline specification (full sample)								
Dependent variable	(1) EB female share	(2) at least one female ED	(3) EB female share	(4) at least one female ED	(5) EB female share	(6) at least one female ED	(7) EB female share	(8) at least one female ED
high pressure variable	listed & zero_2015	listed & zero_2015	large EB & listed & zero_2015	large EB & listed & zero_2015	large EB	large EB	state owned	state owned
	Full sample	Full sample	Full sample	Full sample	Full sample	Full sample	Full sample	Full sample
treated x post x high	-0.027 (-1.485)	-0.114** (-2.436)	0.029** (2.187)	0.103** (2.494)	0.029** (2.269)	0.161*** (4.547)	-0.006 (-0.118)	0.216* (1.901)
treated x post	0.027 (1.625)	0.160*** (3.719)	-0.004 (-0.516)	0.041** (2.059)	-0.009 (-0.991)	-0.010 (-0.493)	0.003 (0.415)	0.062*** (3.479)
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fully interacted model	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	36,131	36,131	36,140	36,140	36,107	36,107	36,115	36,115
Excluded singletons	55	55	46	46	79	79	71	71
Adj. R-squared	0.554	0.568	0.543	0.558	0.546	0.556	0.546	0.555

Panel B. Including Big Three ownership and size as controls (listed firms only)								
Dependent variable	(1) EB female share	(2) at least one female ED	(3) EB female share	(4) at least one female ED	(5) EB female share	(6) at least one female ED	(7) EB female share	(8) at least one female ED
high pressure variable	listed & zero_2015	listed & zero_2015	large EB & listed & zero_2015	large EB & listed & zero_2015	large EB	large EB	state owned	state owned
	Listed firms	Listed firms	Listed firms	Listed firms	Listed firms	Listed firms	Listed firms	Listed firms
treated x post x high	-0.034 (-1.012)	-0.150* (-1.958)	0.026* (1.831)	0.101** (2.352)	0.021 (1.413)	0.142*** (3.550)	-0.013 (-0.187)	0.253* (1.936)
treated x post	0.036 (1.085)	0.198*** (2.657)	-0.006 (-0.591)	0.026 (1.124)	-0.008 (-0.763)	-0.011 (-0.495)	0.003 (0.387)	0.053*** (2.713)
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fully interacted model	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	24,319	24,319	24,336	24,336	24,338	24,338	24,308	24,308
Excluded singletons	81	81	64	64	62	62	92	92
Adj. R-squared	0.545	0.582	0.518	0.555	0.518	0.553	0.522	0.549

Table 8: The effect of FÜPoG II

This table presents the results from estimating equation (1) with several non-overlapping treatment indicators. In Panel A (*Non-FÜPoG II*) is equal to one for firms that are (not) affected by the FÜPoG II mandate to add at least one woman to the executive board after August 2022. Panel B reports coefficient estimates from regressions of our two dependent variables on the interactions between *FÜPoG II* and indicators for each year from 2012 through 2022, except for 2015, which is our benchmark period. Panel C shows the yearly development of the female representation on the executive board for the FÜPoG II affected firms separately by their target disclosure type. *FÜPoG II_zerotarget* are FÜPoG II affected firms that disclosed zero target quota throughout the sample period. *FÜPoG II_nonzerotarget* are firms that disclosed non-zero target quota at some point during the sample period. Panel D reports the results for regressions including additional non-overlapping treatment indicators and an additional period indicator *post2*. *post2* takes the value one from 2021 onwards, i.e., from the year of the passage of FÜPoG II. *Non-FÜPoGII_zerotarget* are firms that are not subject to the FÜPoG II mandate to add at least one woman to the executive board after August 2022 and that disclosed zero target quota throughout the sample period. *Non-FÜPoGII_nonzerotarget* are non-FÜPoG II firms that disclosed non-zero target quota at some point during the sample period. Baseline controls refer to the control variables used in our baseline specification presented in Table 6. Additional control variables are *state owned*, *big3_2015*, and *size*. All control variables are defined in Appendix A. Standard errors are clustered at the firm level. *t* statistics are reported in parentheses. ***, **, and * denote significant differences at the 1%, 5%, and 10% levels, respectively.

Panel A. Differences-in-differences analysis of FÜPoG II affected firms versus Non-FÜPoG II firms				
	(1)	(2)	(3)	(4)
Dependent variable	EB female share	at least one female ED	EB female share	at least one female ED
Split variable	FÜPoG II	FÜPoG II	FÜPoG II	FÜPoG II
	Full sample	Full sample	Listed firms	Listed firms
FÜPoG II x post	0.030*** (2.687)	0.218*** (5.575)	0.028** (2.276)	0.211*** (5.319)
Non-FÜPoG II x post	-0.003 (-0.377)	0.038** (2.012)	-0.002 (-0.291)	0.025 (1.212)
Baseline Controls	Yes	Yes	Yes	Yes
Additional Controls			Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes
Observations	36,175	36,175	24,371	24,371
Excluded singletons	11	11	29	29
Adj. R-squared	0.606	0.615	0.580	0.606

Panel B. Analysis of trends in female representation on the executive board in FÜPoG II affected firms

Dependent variable Split variable	(1)	(2)	(3)	(4)
	EB female share FüPoGII Full sample	at least one female ED FüPoGII Full sample	EB female share FüPoGII Listed firms	at least one female ED FüPoGII Listed firms
2012 x FÜPoG II	0.010 (1.010)	0.034 (0.769)	0.009 (0.857)	0.023 (0.488)
2013 x FÜPoG II	0.008 (0.957)	0.014 (0.466)	0.003 (0.325)	-0.000 (-0.013)
2014 x FÜPoG II	-0.001 (-0.170)	0.020 (0.786)	-0.005 (-0.761)	0.009 (0.316)
2016 x FÜPoG II	0.019 (1.290)	0.113*** (2.879)	0.014 (0.860)	0.096** (2.416)
2017 x FÜPoG II	0.012 (1.063)	0.148*** (3.412)	0.006 (0.505)	0.126*** (2.823)
2018 x FÜPoG II	0.017 (1.297)	0.175*** (3.740)	0.009 (0.693)	0.153*** (3.175)
2019 x FÜPoG II	0.022 (1.270)	0.212*** (3.530)	0.016 (0.884)	0.190*** (3.012)
2020 x FÜPoG II	0.030 (1.610)	0.235*** (3.920)	0.026 (1.307)	0.215*** (3.459)
2021 x FÜPoG II	0.075*** (4.010)	0.412*** (6.802)	0.073*** (3.472)	0.399*** (6.127)
2022 x FÜPoG II	0.073*** (3.539)	0.392*** (6.428)	0.069*** (3.043)	0.383*** (5.841)
Baseline Controls	Yes	Yes	Yes	Yes
Additional Controls			Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes
Observations	36,175	36,175	24,371	24,371
Excluded singletons	11	11	29	29
Adj. R-squared	0.606	0.616	0.580	0.607

Panel C. Evolution of female participation on the executive board in FÜPoG II firms by target disclosure type

	<i>FüPoG II_zerotarget</i> (max. 16)		<i>FüPoG II_nonzerotarget</i> (max. 46)		All FÜPoG II firms (max. 63)	
	EB female share	At Least One Fem ED	EB female share	At Least One Fem ED	EB female share	At Least One Fem ED
2012	0.000	0.000	0.056	0.350	0.040	0.250
2013	0.000	0.000	0.072	0.357	0.051	0.254
2014	0.000	0.000	0.074	0.395	0.053	0.283
2015	0.000	0.000	0.073	0.370	0.053	0.270
2016	0.000	0.000	0.112	0.522	0.082	0.381
2017	0.000	0.000	0.104	0.565	0.076	0.413
2018	0.025	0.063	0.104	0.565	0.085	0.444
2019	0.041	0.125	0.124	0.630	0.105	0.508
2020	0.050	0.200	0.146	0.659	0.124	0.550
2021	0.107	0.467	0.190	0.818	0.170	0.733
2022	0.100	0.429	0.201	0.833	0.181	0.737
Total	0.028	0.111	0.114	0.553	0.092	0.438

Panel D. Response of FÜPoG II versus non-FÜPoG II firms to FÜPoG II conditional on target disclosure type

VARIABLES	(1)	(2)	(3)	(4)
	EB female share FÜPoGII Full sample	at least one female ED FÜPoGII Full sample	EB female share FÜPoGII Listed firms	at least one female ED FÜPoGII Listed firms
FÜPoGII_zerotarget x post2	0.036 (1.175)	0.280** (2.352)	0.068** (2.101)	0.378*** (3.014)
FÜPoGII_zerotarget x post	-0.010 (-0.659)	0.015 (0.337)	-0.011 (-0.708)	0.015 (0.309)
FÜPoGII_nonzerotarget x post2	0.045*** (2.792)	0.201*** (4.160)	0.049*** (3.034)	0.187*** (3.426)
FÜPoGII_nonzerotarget x post	0.026** (1.974)	0.206*** (4.174)	0.021 (1.536)	0.194*** (4.019)
Non-FÜPoGII_zerotarget x post2	-0.008 (-0.872)	-0.000 (-0.014)	0.005 (0.443)	0.019 (0.882)
Non-FÜPoGII_zerotarget x post	-0.028*** (-3.885)	-0.047*** (-2.884)	-0.025*** (-2.974)	-0.049*** (-2.711)
Non-FÜPoGII_nonzerotarget x post2	0.018 (1.037)	0.097** (2.345)	0.029 (1.433)	0.109** (2.327)
Non-FÜPoGII_nonzerotarget x post	0.027** (2.124)	0.116*** (3.286)	0.021 (1.410)	0.089** (2.234)
Baseline Controls	Yes	Yes	Yes	Yes
Additional Controls			Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes
Observations	36,016	36,016	24,237	24,237
Excluded singletons	11	11	29	29
Excluded missing target obs.	159	159	159	159
Adj. R-squared	0.610	0.623	0.579	0.608

RESEARCH QUESTION 2: Which factors determine firms' likelihood to respond to the reform?

Table 9: Probability to adopt non-zero target quotas in Germany

This table presents the logistic regression results for the probability of adopting non-zero target quotas and the potentially determining between 2016 and 2021. Column (1) refers to the adoption probability of the executive board target quota. Columns (2)/ (3) refer to the adoption probability of the target quota for the first (M1)/second management level (M2) below the executive board. The remaining variables are defined in Appendix A. We report robust standard errors. ***, **, and * denote significant differences at the 1%, 5%, and 10% levels, respectively.

Adoption probability	(1)		(2)		(3)	
	Executive Board		1st level below EB M1		2nd level below EB M2	
		effect		effect		effect
peer variable for respective level	9.234*** (0.918)	0.900	8.182*** (1.069)	0.575	7.813*** (1.405)	0.732
Talent-						
potential (students)	0.469 (2.257)	0.003	-4.884 (3.307)	-0.039	2.031 (4.898)	0.030
potential (high skilled)	1.754 (1.71)	0.006	-0.738 (1.814)	-0.003	-1.005 (3.719)	-0.003
demand	-0.289 (0.239)	-0.013	0.221 (0.337)	0.011	-0.304 (0.45)	-0.010
misfit	-0.368 (0.704)	-0.015	-1.008 (1.113)	-0.045	-2.596* (1.363)	-0.084
building	1.045 (1.564)	0.047	0.792 (1.476)	0.036	-1.846 (1.995)	-0.039
management	0.110 (1.440)	0.004	0.946 (1.825)	0.042	4.404* (2.611)	0.146
Family-						
compatibility	-0.617 (1.819)	-0.023	-0.438 (2.015)	-0.019	0.537 (2.213)	0.009
friendly working times	-6.190 (32.456)	-0.002	-40.467 (59.38)	-0.015	-27.023 (68.795)	-0.008
state support (child care)	-0.603 (1.879)	0.002	1.101 (2.864)	0.005	0.760 (3.065)	0.002
Business Environment-						
adaption	0.203 (0.262)	0.012	-0.200 (0.405)	-0.013	0.439 (0.515)	0.023
innovation	2.176 (20.895)	0.001	-32.852 (31.62)	-0.016	-107.8* (63.27)	-0.041
competitive pressure	19.100 (31.293)	0.008	26.729 (39.055)	0.012	49.002 (49.04)	0.018
Status Quo						
high share of female EB members	1.281** (0.599)	0.035	0.665 (0.820)	0.018	omitted	
high share of female SB members	-0.041 (0.335)	-0.001	-0.343 (0.516)	-0.008	0.888 (0.751)	0.017
executive board size	0.252 (0.157)	0.023	0.357 (0.238)	0.042	-0.013 (0.21)	-0.001
year	0.197 (0.130)	0.021	0.665 (0.820)	0.059	0.808** (0.321)	0.078
Observations	1261		1208		695	
Pseudo R-squared	0.869		0.795		0.782	
Controls	yes		yes		yes	
Fixed effects	no		no		no	

RESEARCH QUESTION 2: Which factors determine firms' likelihood to respond to the reform?

Table 10 Probability to adopt ambitious target quotas for the executive board in Germany

This table presents the logistic regression results for the probability of adopting an executive board target quota that exceeds the current share of women in the executive board (=ambitious quota) and the potentially determining factors. Column (1) depicts the relation without the peer variable for 2015 to 2022. Column (2) shows the influence of the peer variable only; Column (3) shows the results for all factors plus the peer variables for 2016 to 2022, between 2016 and 2021. The remaining variables are defined in Appendix A. We report robust standard errors. ***, **, and * denote significant differences at the 1%, 5%, and 10% levels, respectively.

Probability to choose ambitious EB target quota				
	(1)	(2)	(3)	
			effect	effect
peer variable		3.118*** (0.175)	0.535	6.259*** (0.505)
Talent-				
potential (students)	0.116 (0.996)	0.005	2.111 (1.775)	0.040
potential (high skilled)	1.519** (0.629)	0.037	1.184 (1.044)	0.012
misfit	-0.178 (0.128)	-0.055	0.155 (0.189)	0.021
demand	-0.085 (0.296)	-0.025	-0.344 (0.646)	-0.044
building	0.629 (0.541)	0.169	-1.782* (1.065)	-0.206
management	-0.134 (0.499)	-0.033	0.529 (1.087)	0.059
Family-				
compatibility	-0.004 (0.663)	-0.001	2.412* (1.307)	0.338
friendly working times	44.714** (17.459)	0.112	54.06* (31.382)	0.060
state support (childcare)	-2.701*** (0.985)	-0.006	-2.247 (1.722)	-0.025
Business Environment-				
adaption	-0.146 (0.118)	-0.059	0.213 (0.220)	0.038
innovation	-1.852 (11.513)	-0.006	-4.664 (18.038)	-0.006
competitive pressure	26.244* (15.735)	0.090	15.771 (24.32)	0.020
Status Quo				
high share of female EB members	-0.328* (0.186)	-0.046	-3.707*** (0.362)	-0.241
high share of female SB members	0.721*** (0.165)	0.105	0.088 (0.277)	0.006
executive board size	0.075 (0.051)	0.045	0.148** (0.074)	0.038
year	0.154** (0.074)	0.136	0.155 (0.111)	0.050
Observations	1539	1261	1261	
Pseudo R-squared	0.138	0.312	0.600	
Controls	yes	yes	yes	
Fixed effects	no	no	no	

RESEARCH QUESTION 3: *What factors determine the degree of target attainment?*

Table 11 Target attainment in Germany

This table presents the regression results for the relation between the level of target attainment in percentage for the executive board and potentially determining factors. Column (1) depicts the relation without the peer variable for 2015 to 2022. Column (2) shows the influence of the peer variable only; Column (3) shows the results for all factors plus the peer variables for 2016 to 2022. All variables are defined in Appendix A. We report robust standard errors. ***, **, and * denote significant differences at the 1%, 5%, and 10% levels, respectively.

Degree of target attainment	(1)	(2)	(3)	
	% of target attainment (EB)	% of target attainment (EB)	% of target attainment (EB)	
	R ² (%)	R ² (%)	R ² (%)	
peer variable (Tomar, 2023) for respective level		0.657*** (0.022)	0.549*** (0.024)	65.45
Talent-	7.94			3.61
potential (students)	0.056 (0.051)		-0.024 (0.069)	
potential (high skilled)	0.083** (0.034)		0.070 (0.089)	
misfit	-0.032* (0.017)		-0.005 (0.018)	
demand	0.001 (0.006)		0.014 (0.032)	
building	-0.016 (0.027)		0.044 (0.068)	
management	0.056** (0.026)		-0.027 (0.051)	
Family-	2.17			0.92
compatibility	0.013 (0.032)		-0.056 (0.152)	
friendly working times	1.527* (0.880)		-0.746 (5.813)	
state support (childcare)	-0.034 (0.047)		-0.026 (0.054)	
Business Environment-	0.88			0.72
adaption	0.013 (0.032)		-0.010 (0.009)	
innovation	1.527* (0.880)		-0.398 (0.755)	
competitive pressure	-0.034 (0.047)		1.618 (1.343)	
Status Quo	88.39			29.23
high share of female EB members	0.072*** (0.010)		0.068*** (0.012)	
high share of female SB members	-0.005 (0.007)		-0.007 (0.008)	
executive board size	0.015*** (0.003)		0.006** (0.003)	
target quota level EB	0.093*** (0.031)		0.026 (0.032)	
year	0.003 (0.004)	0.62	0 (0.007)	0.07
Observations	1490	947	947	
Adj R ²	0.227	0.497	0.549	
Controls	yes	yes	yes	
Fixed effects	no	no	no	

Appendix A: Description of main variables

Variable	Description
Dependent variables	
EB Female Share	Proportion of women in executive boards (percentage share) (source: BoardEx)
at least one female ED	Indicator for firm-year observations with at least one female executive director (source: BoardEx)
target quota executive board (EB)	Target gender quota in the executive board (percentage share) that affected firms determined
target quota 1 st level below EB (M1)	Target gender quota in the management position directly below the executive board (percentage share) that affected firms determined
target quota 2 nd level below EB (M2)	Target gender quota in the management position on the second level below the executive board (percentage share) that affected firms determined
target quota supervisory board SB	Target gender quota in the supervisory board (percentage share) that affected firms set
non-zero target (EB and other management levels and SB)	Dummy variable: 1 if a target quota above 0 for the respective group was adopted (EB and other management levels and SB), 0 otherwise
ambitious target, ambitious target adoption (EB only)	Dummy variable: 1 if a target quota for the executive board is above the current proportion of women in executive board
achievement	Percentage level of achievement if EB target quota is higher than proportion of females on EB in the previous year (=ambitious quota), calculated as EB female share divided by target quota EB. If firm is not ambitious, level of achievement equals zero.
Test and control variables	
treated	Indicator variable: 1 for <i>treated</i> is equal to one for German firms that are subject to the Equality Law, 0 otherwise
post	Indicator variable: 1 for all years after the 2015-reform (2016 to 2022), 0 otherwise
zero_2015	Indicator for the firm having no female executive directors at the end of 2015 (source: BoardEx)
one_2015	Indicator for the firm having one female executive directors at the end of 2015 (source: BoardEx)
listed	Indicator variable: 1 for publicly listed firms, 0 otherwise (source: Compustat Global)
EB size pre-2016	The natural logarithm of the average size of executive board in the period 2012-2015 (source: BoardEx)
state owned	Indicator variable: 1 for firms that are state-owned, 0 otherwise (source: MSCI ESG database)
big3_2015	Share of the firm's equity held by <i>The Big Three</i> institutional investors, i.e., BlackRock, StateStreet and Vanguard, at the end of June 2015 (source: Refinitiv Eikon)

Appendix A: Description of main variables (continued)

topinst_2015	Share of the firm's equity held by The Big Three, by 10 other top institutional investors in Europe that are members of <i>30percent Club Investor Groups</i> , i.e., Aberdeen Standard Investments, Allianz Global Investors, Amundi, AXA Investment Managers, DWS Investment, Fidelity, J.P. Morgan, Legal & General Investment Management, Natixis, UBS Asset Management, and two top institutional investors in Europe that pledged to push for more board gender diversity on their website, i.e., Morgan Stanley and Norges Bank Investment Management (source: Refinitiv Eikon)
size	The natural logarithm of a firm's total assets (source: Compustat Global)
peer variable (non-zero quota) Table 9	Dummy variable: 1 if the majority in the respective industry peer group (industry state) adopted a non-zero target quota in the previous year, 0 otherwise
peer variable (ambitious quota) Table 10	Dummy variable: 1 if the majority in the respective industry peer group adopted an ambitious target quota in the previous year, 0 otherwise
peer variable (achievement) Table 11	Normalized level of achievement within the industry peer group in the previous year, following Tomar (2023)
Talent-	
potential (students)	Weighted percentage average of female graduates in industry-relevant fields of study (source: German GovData)
potential (high skilled)	Average share of women with university degrees in total female work population in an industry (source: IAB Establishment Panel, Research Data Centre (FDZ) of the German Federal Employment Agency (BA) at the Institute for Employment Research (IAB))
misfit	Factor that captures average inappropriate talent pools in an industry, comprising 3 items, including overaging or personnel slack (source: IAB Establishment Panel) Eigenvalue: 1.85; Variance extracted: 62%
demand	Factor that captures average demand for talent in an industry, comprising 4 items, including high personnel fluctuation or staff shortage (source: IAB Establishment Panel) Eigenvalue: 2.80; Variance extracted: 70%
building	Factor that captures average investment in talent pool building in an industry, comprising 8 items, including educational offers or job rotation (source: IAB Establishment Panel) Eigenvalue: 6.48; Variance extracted: 81%

Appendix A: Description of main variables (continued)

management	Factor that captures average formal talent management in an, comprising 6 items, including the existence of written personnel management strategies, performance target agreements or performance assessments (source: IAB Establishment Panel) Eigenvalue: 5.57; Variance extracted: 93%
Family-	
compatibility	Factor that captures average family-compatibility in an industry, comprising 6 items, including the existence of firm day care, firm member in network of family-compatible firms (source: IAB Establishment Panel) Eigenvalue: 4.91; Variance extracted: 82%
friendly working hours	Single-item construct that captures average flexible working hours in an industry within a German state (“Bundesland”) (source: IAB Establishment Panel)
state support (childcare)	Percentage of children between age 0 and 3 in state childcare per German state (source: German Census Bureau)
Business Environment	
change	Factor that captures average changes in the business environment in an industry, comprising 6 items, including the reorganization or introduction of environmental measures (source: IAB Establishment Panel) Eigenvalue: 2.07; Variance extracted: 85%
innovation	Single-item construct that captures average innovation in the business environment in an industry, that is, improvements in firm-specific processes (source: IAB Establishment Panel)
competitive pressure	Single-item construct that captures average competitive pressure in the business environment in an industry (source: IAB Establishment Panel)
Status Quo	
high share of female executive board members	Dummy variable: 1 for percentage share of females in executive board above median, 0 otherwise
high share of female executive board members	Dummy variable: 1 for percentage share of females in supervisory board above median, 0 otherwise
executive board size	Number of executive board members (source: BoardEx)

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Online Appendix A. Sample distribution by year and sector for unbalanced and balanced panels

Panel A. Distribution of the sample by year													
Unbalanced panel							Balanced panel used in Online Appendix E						
year	Pooled sample		Control firms		Treated firms		year	Pooled sample		Control firms		Treated firms	
	N	Percent	N	Percent	N	Percent		N	Percent	N	Percent	N	Percent
2012	2,671	7.38	2,419	7.34	252	7.82	2012	2,022	9.5	1,801	9.52	221	9.31
2013	2,903	8.02	2,632	7.98	271	8.41	2013	2,010	9.44	1,789	9.46	221	9.31
2014	3,374	9.32	3,073	9.32	301	9.34	2014	2,004	9.41	1,785	9.44	219	9.22
2015	4,123	11.39	3,795	11.51	328	10.18	2015	1,996	9.38	1,775	9.38	221	9.31
2016	4,107	11.35	3,781	11.47	326	10.12	2016	1,993	9.36	1,773	9.37	220	9.26
2017	3,897	10.77	3,577	10.85	320	9.93	2017	1,996	9.38	1,775	9.38	221	9.31
2018	3,692	10.2	3,375	10.24	317	9.84	2018	2,002	9.4	1,781	9.42	221	9.31
2019	3,474	9.6	3,165	9.6	309	9.59	2019	1,997	9.38	1,777	9.4	220	9.26
2020	3,287	9.08	2,989	9.07	298	9.25	2020	2,009	9.44	1,788	9.45	221	9.31
2021	3,038	8.4	2,751	8.35	287	8.91	2021	2,015	9.46	1,794	9.49	221	9.31
2022	1,620	4.48	1,407	4.27	213	6.61	2022	1,245	5.85	1,076	5.69	169	7.12
Total	36,186	100	Total	32,964	3,222	100	Total	21,289	100	Total	18,914	2,375	100

Panel B. Distribution of the sample by sector

Sector	Unbalanced panel		Balanced panel	
	N	Percent	N	Percent
Aerospace & Defence	272	0.75	171	0.8
Automobiles & Parts	612	1.69	419	1.97
Banks	1 535	4.24	1 043	4.9
Beverages	317	0.88	204	0.96
Business Services	2 109	5.83	1 043	4.9
Chamber of Commerce	28	0.08		
Chemicals	696	1.92	410	1.93
Clothing & Personal Products	590	1.63	327	1.54
Construction & Building Materials	1 449	4	950	4.46
Consumer Services	167	0.46	65	0.31
Containers & Packaging	211	0.58	135	0.63
Diversified Industrials	516	1.43	404	1.9
Education	29	0.08		
Electricity	444	1.23	265	1.24
Electronic & Electrical Equipment	1 000	2.76	677	3.18
Engineering & Machinery	1 402	3.87	965	4.53
Food & Drug Retailers	283	0.78	212	1
Food Producers & Processors	847	2.34	522	2.45
Forestry & Paper	196	0.54	117	0.55
General Retailers	888	2.45	452	2.12
Health	1 248	3.45	562	2.64
Household Products	338	0.93	276	1.3
Information Technology Hardware	648	1.79	401	1.88
Insurance	728	2.01	443	2.08
Investment Companies	215	0.59	140	0.66
Legal	48	0.13		
Leisure & Hotels	1 265	3.5		
Leisure Goods	150	0.41	91	0.43
Life Assurance	126	0.35	107	0.5
Media & Entertainment	1 521	4.2	933	4.38
Mining	992	2.74	742	3.49
Oil & Gas	1 512	4.18	953	4.48
Pharmaceuticals and Biotechnology	1 979	5.47	996	4.68
Private Equity	489	1.35	242	1.14
Publishing	137	0.38	70	0.33
Real Estate	1 903	5.26	1 070	5.03
Regulators	132	0.36	106	0.5
Renewable Energy	554	1.53	296	1.39
Software & Computer Services	2 711	7.49	1 344	6.31
Sovereign Wealth Fund	17	0.05	10	0.05
Speciality & Other Finance	2 943	8.13	1 695	7.96
Steel & Other Metals	444	1.23	270	1.27
Telecommunication Services	742	2.05	418	1.96
Tobacco	22	0.06	22	0.1
Trade Association	122	0.34	21	0.1
Transport	1 210	3.34	751	3.53
Utilities - Other	377	1.04	293	1.38
Wholesale Trade	22	0.06	11	0.05
Total	36 186	100	21 289	100

Online Appendix B. Addressing concerns about different regional trends in female participation in the executive board

This table examines the sensitivity of the baseline results reported in Table 6 to variations in region-year fixed effects and benchmark samples. Columns 1 and 2 in Panel A include instead of EU-year effects, Nordic-year effects, where Nordic includes the following countries: Denmark, Finland, Sweden, and Norway. Columns 3 and 4 exclude the United Kingdom from the sample. Columns 5 and 6 include only Austrian and German firms. Columns 7 and 8 includes only German treated and untreated observations. Panel B replicates the specifications of Panel A, but instead of *treated x post* reports coefficient estimates from regressions of our two dependent variables on the interactions between *treated* and indicators for each year from 2012 through 2022, except for 2015, which is our benchmark period. Standard errors are clustered at the firm level. *t* statistics are reported in parentheses. ***, **, and * denote significant differences at the 1%, 5%, and 10% levels, respectively.

Panel A. Replication of the baseline differences-in-differences analyses of Table 6								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	EB female share	at least one	EB female share	at least one	EB female share	at least one	EB female share	at least one
VARIABLES	Full Sample	female ED Full Sample	EU w/o UK	female ED EU w/o UK	GER & AT	female ED GER & AT	within GER	female ED within GER
<i>treated x post</i>	0.022** (2.338)	0.089*** (3.569)	0.006 (0.741)	0.063*** (3.153)	0.032** (2.422)	0.083** (2.471)	0.046** (2.531)	0.099** (2.327)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nordic x Year	Yes	Yes						
AT_CH_GER x Year	Yes	Yes						
Observations	36,175	36,175	16,584	16,584	4,345	4,345	3,826	3,826
Excluded singletons	11	11	25	25	34	34	44	44
Adj. R-squared	0.606	0.614	0.624	0.650	0.490	0.582	0.496	0.590

Panel B. Replication of Table 6 Panel B								
VARIABLES	(1) EB female share Full Sample	(2) at least one female ED Full Sample	(3) EB female share EU w/o UK	(4) at least one female ED EU w/o UK	(5) EB female share GER & AT	(6) at least one female ED GER & AT	(7) EB female share within GER	(8) at least one female ED within GER
2012 x treated	-0.002 (-0.175)	-0.012 (-0.335)	0.008 (0.828)	0.002 (0.090)	0.002 (0.129)	-0.019 (-0.430)	0.014 (0.786)	0.016 (0.299)
2013 x treated	0.002 (0.168)	0.009 (0.306)	0.006 (0.684)	0.001 (0.046)	0.004 (0.352)	0.014 (0.404)	0.007 (0.503)	0.030 (0.641)
2014 x treated	-0.015* (-1.882)	-0.018 (-0.895)	-0.007 (-1.053)	-0.011 (-0.665)	-0.014 (-1.538)	-0.023 (-0.898)	-0.002 (-0.199)	0.008 (0.267)
2016 x treated	-0.001 (-0.195)	0.010 (0.591)	0.002 (0.263)	0.000 (0.035)	0.007 (0.875)	0.015 (0.691)	0.013 (1.292)	0.024 (0.905)
2017 x treated	0.005 (0.522)	0.037* (1.735)	0.000 (0.022)	0.016 (0.921)	0.016 (1.136)	0.029 (0.919)	0.027 (1.570)	0.037 (1.041)
2018 x treated	0.014 (1.352)	0.079*** (2.843)	-0.000 (-0.021)	0.044** (2.098)	0.030* (1.896)	0.099** (2.474)	0.050** (2.393)	0.131** (2.469)
2019 x treated	0.012 (0.897)	0.084** (2.544)	-0.004 (-0.407)	0.040 (1.645)	0.028 (1.579)	0.069 (1.493)	0.060*** (2.643)	0.138** (2.339)
2020 x treated	0.030** (2.100)	0.129*** (3.498)	0.009 (0.879)	0.088*** (3.300)	0.052*** (2.833)	0.126** (2.539)	0.081*** (3.137)	0.205*** (3.186)
2021 x treated	0.045*** (3.011)	0.159*** (3.927)	0.022** (1.981)	0.143*** (4.994)	0.055*** (2.818)	0.141*** (2.640)	0.076*** (2.698)	0.174** (2.385)
2022 x treated	0.052*** (2.751)	0.174*** (3.755)	0.032** (2.097)	0.155*** (4.459)	0.041 (1.457)	0.109* (1.768)	0.088*** (2.634)	0.183** (2.434)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nordic x Year	Yes	Yes						
AT_CH_GER x Year	Yes	Yes						
Observations	36,175	36,175	16,584	16,584	4,345	4,345	3,826	3,826
Excluded singletons	11	11	25	25	34	34	42	42
Adj. R-squared	0.606	0.615	0.624	0.652	0.490	0.583	0.498	0.591

Online Appendix C. Sensitivity of baseline differences-in-differences analyses (Table 6) to the inclusion of additional controls

This table replicates the baseline analyses of Table 6 but includes additional control variables. Panel A uses firm and sector-year effects. Panel B additionally includes EU-year and AT_CH_GER x Year effects for Germanic regional trends (i.e., in Austria, Germany, and Switzerland). Standard errors are clustered at the firm level. *t* statistics are reported in parentheses. ***, **, and * denote significant differences at the 1%, 5%, and 10% levels, respectively.

Panel A. Including additional controls, firm and sector-year fixed effects										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	EB female share	at least one female ED	EB female share	at least one female ED	EB female share	at least one female ED	EB female share	at least one female ED	EB female share	at least one female ED
VARIABLES	Full Sample	Full Sample	Listed firms	Listed firms	Listed firms	Listed firms	Listed firms	Listed firms	Listed firms	Listed firms
treated x post	0.004 (0.585)	0.073*** (4.106)	0.003 (0.404)	0.063*** (3.304)	0.004 (0.556)	0.066*** (3.461)	0.004 (0.576)	0.065*** (3.371)	0.003 (0.464)	0.064*** (3.303)
state owned x post	0.007 (0.501)	0.028 (0.933)	0.014 (0.835)	0.027 (0.815)	0.014 (0.850)	0.027 (0.833)	0.020 (1.139)	0.035 (1.030)	0.020 (1.174)	0.037 (1.067)
big3_2015 x post					0.002*** (2.818)	0.004*** (2.867)	0.002** (2.460)	0.003* (1.918)		
size x post							-0.002 (-1.127)	-0.002 (-0.713)	-0.002 (-1.057)	-0.002 (-0.679)
topinst_2015 x post									0.001** (2.487)	0.002** (2.173)
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample restricted to obs. w. non-miss. inst. own. data			Yes	Yes						
Observations	36,175	36,175	26,079	26,079	26,079	26,079	24,371	24,371	24,371	24,371
Excluded singletons	11	11	26	26	26	26	29	29	29	29
Adj. R-squared	0.606	0.614	0.578	0.606	0.579	0.606	0.580	0.605	0.580	0.605

Panel B. Including additional controls, firm, sector-year, EU-year and AT_CH_GER-year fixed effects										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	EB female share	at least one female ED	EB female share	at least one female ED	EB female share	at least one female ED	EB female share	at least one female ED	EB female share	at least one female ED
VARIABLES	Full Sample	Full Sample	Full Sample	Full Sample	Full Sample	Full Sample	Full Sample	Full Sample	Full Sample	Full Sample
treated x post	0.020** (1.975)	0.078*** (2.911)	0.029** (2.319)	0.092*** (3.024)	0.031** (2.448)	0.095*** (3.162)	0.032** (2.416)	0.097*** (3.073)	0.032** (2.396)	0.096*** (3.060)
state owned x post	0.009 (0.595)	0.033 (1.073)	0.015 (0.870)	0.030 (0.902)	0.015 (0.891)	0.031 (0.930)	0.019 (1.093)	0.037 (1.064)	0.020 (1.123)	0.038 (1.092)
big3_2015 x post					0.002*** (2.887)	0.004*** (2.951)	0.002** (2.353)	0.003* (1.830)		
size x post							-0.001 (-0.866)	-0.001 (-0.444)	-0.001 (-0.809)	-0.001 (-0.406)
topinst_2015 x post									0.001** (2.393)	0.002** (2.056)
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EU x Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AT_CH_GER x Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample restricted to obs. w. non-miss. inst. own. data			Yes	Yes						
Observations	36,175	36,175	26,079	26,079	26,079	26,079	24,371	24,371	24,371	24,371
Excluded singletons	11	11	26	26	26	26	29	29	29	29
Adj. R-squared	0.606	0.614	0.578	0.606	0.579	0.607	0.580	0.606	0.580	0.606

Online Appendix D. Propensity score matched analyses

Panel reports the results from estimating probit regression with the indicator variable *treated* as the dependent variable. The probit regression in column 1 is used to find propensity scores for the propensity score weighted replication of the baseline analyses reported in columns 1 to 4 of Panel B. The probit regression in column 2 is used to find propensity scores for the propensity score weighted replication of the analyses that also include the additional controls and are reported in columns 5 to 6 of Panel B. In the probit estimation of column 1 274 firms are excluded because the sector indicators perfectly predict the treatment (e.g., there are no treated firms in the mining industry). In column 2 the number of firms is further reduced to listed firms only due to the availability of data for the additional control variables (*big3_2015* and *size*). All control variables are defined in Appendix A. Panel B reports the propensity score weighted differences-in-differences analyses. Standard errors are clustered at the firm level. *t* statistics are reported in parentheses. ***, **, and * denote significant differences at the 1%, 5%, and 10% levels, respectively.

Panel A. Probit model

Variables	(1) treated Baseline controls	(2) treated Baseline + Additional Controls
zero_2015	0.923*** (3.495)	0.825** (2.415)
one_2015	0.649** (2.408)	0.575* (1.646)
SB female share pre-2016	-0.520** (-2.321)	-1.417*** (-4.612)
EB size pre-2016	0.210*** (10.407)	0.212*** (7.761)
listed	0.627*** (7.053)	
state owned		-0.221 (-1.046)
big3_2015		-0.038*** (-3.569)
size		0.146*** (6.970)
Observations / Firms	3,902	2,309
Excluded firms	274	1.867
Sector FE	Yes	Yes
Pseudo R-squared	0.139	0.144

Panel B. Propensity score weighted differences-in-differences analyses								
Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	EB female share	at least one female ED	EB female share	at least one female ED	EB female share	at least one female ED	EB female share	at least one female ED
VARIABLES	Full Sample	Full Sample	Full Sample	Full Sample	Listed firms	Listed firms	Listed firms	Listed firms
treated x post	0.006 (0.977)	0.077*** (3.467)	0.023** (2.255)	0.074** (2.001)	0.013* (1.664)	0.087*** (3.354)	0.033** (2.476)	0.112** (2.167)
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional Controls					Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EU x Year			Yes	Yes			Yes	Yes
AT_CH_GER x Year			Yes	Yes			Yes	Yes
Observations	33,838	33,838	33,838	33,838	21,528	21,528	21,528	21,528
Excluded singletons	0	0	0	0	0	0	0	0
Adj. R-squared	0.544	0.602	0.546	0.605	0.541	0.613	0.544	0.618

Online Appendix E. Replication of the baseline differences-in-differences analyses of Table 6

This table replicates the baseline analyses of Table 6 using a balanced panel. Details on the yearly and sectoral distribution of the balanced panel are provided in Online Appendix A. Standard errors are clustered at the firm level. t statistics are reported in parentheses. ***, **, and * denote significant differences at the 1%, 5%, and 10% levels, respectively.

Dependent variable	(1) EB female share	(2) at least one female ED	(3) EB female share	(4) at least one female ED	(5) EB female share	(6) at least one female ED
VARIABLES	Full Sample	Full Sample	Full Sample	Full Sample	Full Sample	Full Sample
treated x post	0.004 (0.488)	0.069*** (3.235)	0.003 (0.425)	0.068*** (3.160)	0.034** (2.514)	0.090** (2.565)
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
EU x Year			Yes	Yes	Yes	Yes
AT_CH_GER x Year					Yes	Yes
Observations	21,266	21,266	21,266	21,266	21,266	21,266
Excluded singletons	11	11	11	11	23	23
Adj. R-squared	0.567	0.587	0.567	0.587	0.567	0.588

Online Appendix F. Interview Evidence

This table summarizes the interview evidence gathered from 13 companies with all-male executive boards in 2015.

Panel A: Summary of Interview Findings

Role of Law				
Type	yes	no	TOTAL	Comment on role of law
<i>non-zero target set in 2015</i>	3	1	4	When inquiring about the factors influencing their strategic agenda concerning female representation in leadership positions, two out of the three interviewees spontaneously emphasized the crucial role of the law. There is consensus that the law played a significant role in pushing their company to address the subject and incorporate it into their strategic agenda. They also mentioned that the law acted as a door opener, providing an opportunity to initiate sustainable and long-term changes in this regard.
<i>non-zero target set in 2017</i>	3	0	3	When inquiring about the factors influencing their strategic agenda concerning female representation in leadership positions, two out of the three interviewees spontaneously emphasized the crucial role of the law. They emphasized that the presence of the law created external pressure that previously did not exist, opening the door for structural changes within their organizations. Moreover, the regulation was seen as an accelerator, illustrated by the example of a woman entering the board due to the law, who then further advocated for the advancement of the topic within the company, pushing it forward even against internal resistance.
<i>non-zero target set after 2017</i>	2	0	2	Both interviewees confirmed that the law served as the catalyst for placing the issue on the strategic agenda, primarily due to the external pressure it generated. Although the law did not result in an immediate impact, it did initiate a meaningful dialogue and provided food for thought. Eventually, this led to the persuasion of top management about the significance of the problem, making the current changes feasible. Consequently, the law's impact was delayed, but it played a crucial role in driving the transformation.
<i>Zero target throughout</i>	3	1	4	Even these interviewees acknowledged that the law did succeed in drawing attention to the topic. However, the implementation of the changes has been slow, and this delay can be attributed to several reasons, such as talent pool challenges, lack of strategic interest in the topic, and political considerations for setting a target of zero female representation.
	11	2	13	

Panel B: Guiding questions for interviews

We examine the evolution of the female representation in executive and non-executive board positions and are interested in whether and how companies set goals for themselves in this regard, and how they have set goals in the past.

1. Since when has the issue of female representation in top management positions been on the strategic agenda?
 2. Who/which events were the driving forces for addressing the issue (focus on WHETHER AND WHEN the interview partners mention the Equality Law by themselves)
 - a. DEEP DIVE: To what extent has the Equality Law influenced/accelerated/impeded the strategic agenda?
 3. Since when are explicit targets set for the share of women in the
 - a. Supervisory board
 - b. Executive board
 - c. Senior management
 4. How are these targets set?
 - a. DEEP DIVE: What considerations are driving the level of the target quota?
 - b. DEEP DIVE: What consequences arise from not achieving these goals (internally versus externally)?
-