No 485

DECEMBER 2021

CefES

Center for European Studies

PAPER SERIES

# Board Gender Quotas and Outward Foreign Direct Investment: Evidence from France

Koray Aktas, Valeria Gattai, Piergiovanna Natale

The Center for European Studies (CefES-DEMS) gathers scholars from different fields in Economics and Political Sciences with the objective of contributing to the empirical and theoretical debate on Europe.

DIPARTIMENTO DI ECONOMIA, METODI QUANTITATIVI E STRATEGIA DI IMPRESA

UNIVERSITÀ DEGLI STUDI DI MILANO BICOCCA

# Board Gender Quotas and Outward Foreign Direct Investment: Evidence from France

Koray Aktaş
Research Fellow
Department of Economics, Management and Statistics
Center for European Studies (CefES)
Università degli Studi di Milano-Bicocca
Piazza Ateneo Nuovo 1, 20126 Milano (Italy)
Email: koray.aktas@unimib.it

Valeria Gattai
Associate Professor of Economics
Department of Economics, Management and Statistics
Center for European Studies (CefES)
Università degli Studi di Milano-Bicocca
Piazza Ateneo Nuovo 1, 20126 Milano (Italy)
Email: valeria.gattai@unimib.it

Piergiovanna Natale
(Corresponding Author)
Professor of Economics
Department of Economics, Management and Statistics
Center for European Studies (CefES)
Università degli Studi di Milano-Bicocca
Piazza Ateneo Nuovo 1, 20126 Milano (Italy)
Email: piergiovanna.natale@unimib.it

## Abstract

We show that board gender quota laws reduce the propensity of French firms to undertake outward foreign direct investment. For this, we use Orbis data for the period 2007–2015 and a difference-in-difference approach. The exogenous increase in the share of women directors decreases the share of foreign subsidiaries by 7 percentage points when the share of women directors is at its highest. The share of foreign subsidiaries is affected by the decrease in the probability of having a foreign subsidiary, which indicates disinvestment. Accordingly, the estimated effects on the number and cost of employees are negative, with no impact on firm performance.

**JEL codes:** G30; F23; J16

**Keywords:** Board diversity, Gender quota, Outward foreign direct investment (OFDI), Europe, Women directors.

## 1. INTRODUCTION

The adoption of board gender quota laws in many European countries and the public debate it spurred led to a growing body of the literature examining the impact of women directors on several dimensions of firm performance. However, very little is known about how an increase in share of women directors affects firms' strategic decision making. This paper attempts to fill this gap by providing new evidence on the impact of gender quota laws on outward foreign direct investment (OFDI).[1]

OFDI decisions require board-level approval and thus they reflect the performance of the board in the dual role of monitor and advisor to the management (Adams and Ferreira 2007). As long as the board's demographic composition impacts its effectiveness in either role, we expect board gender diversity to affect the firm's decision to invest abroad.

Empirical evidence suggests that the adoption of gender quota laws fosters board's independence (Bøhren and Staubo 2016; Ferreira et al. 2020), affecting its performance as monitor and leading to more scrutiny of management's investment projects. Because of the knowledge required to assess operations in foreign markets, managers are likely to have superior information on the profitability of OFDI and they may exploit it to increase the number of assets they have control over (Hannan and Mavinga 1980, Lewellen et al. 1989). As long as more diverse boards are tougher monitors of management, we expect the adoption of quota laws to affect negatively firm's OFDI.

However, empirical evidence shows also that gender diversity influences board's skills and expertise (Kim and Starks 2016), affecting its performance as advisor to management. Stroup (2017) and Masulis et al. (2012) show that having directors knowledgeable about foreign markets increases the likelihood as well as success of cross-border acquisitions. As

[1] According to the IMF (1993), OFDI is an investment in a foreign company by which the investor owns at least 10% of the ordinary shares; it is meant to establish a lasting interest in the country and significant influence on firm's management.

long as more diverse boards can rely on greater international experience, we expect the adoption of quota laws to affect positively firm's OFDI.

Because of expected effects of opposite sign, the impact of board diversity on OFDI is ultimately an empirical matter. We propose to investigate it because of the importance of firm internationalization, and OFDI in particular, for economic growth (UNCTAD 2021).

To address our research question, we conduct a counterfactual analysis of how the gender quota law adopted in 2011 affected the OFDI of publicly listed firms in France. Following Norway's introduction of the gender quota law in 2003, many European countries adopted similar legislations to help women overcome the barriers preventing them from climbing the corporate ladder.[2] This has been most successful in France (Zenou et al. 2017). The French Parliament passed a law in 2011 requiring all publicly listed and large unlisted firms in France to appoint at least 20% of women directors to their boards by the end of 2013 and 40% by the end of 2016. The average share of women directors was around 9% when the law was passed, and this increased to 35%–40% by 2016.

Using Orbis firm-level data for the period 2007—2015 and a difference-in-difference (DID) approach with a two-step semi-parametric matching technique, including exact matching using 4-digit sectoral codes, we exploit the exogenous increase in women directors induced by the gender quota law and estimate the causal effects of gender-diverse boards on OFDI, measured in terms of foreign subsidiaries.[3]

We find that the increase in share of women directors decreased the share of foreign subsidiaries by 7 percentage points (p.p.) when the share of women directors was at its highest

[2] See Section 3.

[3] Alternatively, OFDI can be measured by the total value of firm's investments in foreign companies. However, such a measure is subject to the firm's discretionary choices to a far greater extent than number of subsidiaries. Boussaid et al. (2015) show that gender-diverse boards increase the quality of financial reporting by French companies. Measuring OFDI by the total value of firm's investments in foreign companies might introduce a systematic bias to our estimates. Moreover, the data on total value of firm's investments in foreign companies are not easily available, and this prevents us from conducting a robustness check of our results.

in 2014 and 2015, as shown in our first-stage analysis report. Our event-study analysis confirms the parallel trend assumption of our setting. We also document that our main finding is driven by decreases in the number of subsidiaries based both outside and inside of the European Union (EU), and in the probability of having a foreign subsidiary, all of which point to disinvestments.

Our findings contribute to the literature at several dimensions. As for the outcome variable, previous studies confined the effect of gender quota laws to economic and financial indicators, with little attention paid to firms' strategic decision making (Ahern and Dittmar 2012; Matsa and Miller 2013; Bøhren and Staubo 2016; Eckbo et al. 2019; Comi et al. 2020; Greene et al. 2020). Our work provides new empirical evidence on OFDI, an outcome variable that, to our knowledge, has not been analyzed so far.

Studies have shown that women directors record better board meeting attendance and are tougher in monitoring executives (Adams and Ferreira 2009). Moreover, firms with women directors on average make fewer acquisitions and pay lower bid premia (Levi et al. 2014). We add to this literature by showing that the effect of gender diversity on firm investment differs between domestic and foreign operations. After the gender quota law was introduced in France, we observe a fall in both the share of foreign subsidiaries and probability of having a foreign subsidiary. We also observe a reduction in number and cost of employees suggesting more efficient OFDI selection by more gender-diverse boards.

Finally, a recent strand of literature examined the relationship between foreign direct investment (FDI) and institutions. Leuz et al. (2009) show that institutional settings and governance quality are significantly associated with inward FDI. Cultural differences, bilateral trust, and individualism affect OFDI (Guiso et al. 2009) and cross-border mergers (Ahern et al. 2015). This study contributes to the literature by showing that gender-diverse corporate governance has a significant impact on OFDI.

The rest of the paper is organized as follows. Section 2 presents a literature review. Section 3 discusses the gender board diversity and quota laws implemented across European countries. Section 4 describes the data and sample selection issues and presents descriptive statistics. Section 5 discusses our identification and empirical strategy. Our main findings and sensitivity analysis are presented in Sections 6 and 7, respectively. Section 8 concludes the paper, suggesting future directions of research.

## 2. LITERATURE REVIEW

Board gender diversity is a vast and expanding empirical subject in the Economics and Management literature investigating the relationship between board composition, firm performance, and, to a lesser extent, corporate strategic decisions.

The theoretical basis of this literature is the dual role of a board as monitor and advisor to the management (Adams and Ferreira 2007). As long as the board's demographic composition impacts its effectiveness in either role, board gender diversity will affect the firm's performance (Adams and Ferreira 2009; Rhode and Packel 2014; Kirsch 2018) as well as strategic choices and corporate policies (Levi et al. 2014; Bernile et al. 2018; Pucheta-Martinez and Bel-Oms 2016).

A major challenge in studying the effect of board gender diversity is the endogeneity in board composition itself (Adams et al. 2010). Legislations making gender quotas mandatory in boards provide quasi-natural experimental settings in which board diversity is exogenous.[4] This spurred numerous studies using gender quotas to identify the causal effects of board diversity.[5]

[4] Regulatory avoidance is a concern for the quasi-natural experiment approach to issues of endogenous board appointments. However, its relevance is ultimately an empirical matter (Bøhren and Staubo 2014; Eckbo et al. (2016).

[5] Alternative approaches have identified exogenous sources of variation in board composition in the professional network of men directors (Adams and Ferreira 2009), generational transitions in family firms (Amore et al. 2014),

Ahern and Dittmar (2012) and Matsa and Miller (2013) are the first investigating the impact of gender quota laws on firm performance and policies. Considering Norwegian firms, Ahern and Dittmar (2012) show that changes in board gender diversity negatively affect the accounting and market measures of firm profitability. In addition, firms with more gender-diverse boards undertake more acquisitions and rely more on debt. Ahern and Dittmar (2012) attribute these changes to the reduction in board capabilities caused by the younger age and inexperience of directors appointed in compliance with the law. Matsa and Miller (2013) report reduced layoffs and increased cost of employees in firms whose boards were affected the most by introduction of the gender quota law. In contrast to Ahern and Dittamar (2012), Matsa and Miller (2013) find no difference in boards' demographic characteristics, except for gender, and conclude that gender-diverse boards adopt a different leadership style.

Subsequent studies attempted to investigate the impact of gender quota laws in other countries but could not confirm the above results or provide conclusive evidence.[6] Comi et al. (2020) estimate the effects of gender quota laws on firm profitability, productivity, and employment in Belgium and Italy. They find no gender diversity effect on firm profitability in either country, but show opposite results for other variables. Bruno et al. (2018) and Ferrari et al. (2018) report a positive gender quota law impact on the performance of Italian firms. As for Germany, Fedorets et al. (2019) document that the gender quota law approved in 2015 has no effect on firm profitability.

The effects of the French gender quota law have been extensively investigated. As for performance, Sabatier (2015) finds a positive effect on French firms' profitability, but Comi et al. (2020) find no effect. Furthermore, the increase in number of women directors after

gender of CEOs' children (Green and Homroy 2018), and supply of non-local diverse directors (Bernile et al. 2018), to mention a few.

[6] Note that the results of Ahern and Dittmar (2012) and Matsa and Miller (2013) have been disputed also in Dale-Olson et al. (2013) and Eckbo et al. (2016, 2019). These contributions find the effect of gender quota law neither on Norwegian firms' accounting and market performance, nor on board capabilities.

introduction of the gender quota law led to better enforcement of minority shareholder rights (Nekhili et al. 2021), improved board monitoring effectiveness (Nekhili et al. 2020), and reduced equity cost (Nguyen 2020). Finally, Ferreira et al. (2020) show that the gender quota law led to more independent and international—and not less experienced and academically qualified—boards.

As for corporate strategic decisions of interest, Stroup (2017) and Masulis et al. (2012) show that having directors well experienced in cross-border acquisitions or knowledgeable about foreign markets increase the likelihood of cross-border acquisition as well as success. To the best of our knowledge, there is no evidence on the effects of board gender diversity on OFDI decisions. As mentioned above, Ahern and Dittmar (2012) find a positive association between gender diversity and acquisitions in Norwegian firms. In contrast, employing a large sample of US firms, Levi et al. (2014) show that firms with more gender-diverse boards undertake fewer acquisitions. Similarly, Huang and Kisgen (2013) report that female executives undertake acquisitions and issue debts less often than male executives do. Both studies find male overconfidence contributing to the observed patterns. Next, we examine whether and to what extent the above effects hold true for cross-border investments.

## 3. BOARD DIVERSITY AND GENDER QUOTA LAWS

European countries are known for legislating extensively on board gender diversity (Ferreira et al. 2020). In this section, we briefly review such regulations and show that the French gender quota law is not an idiosyncratic policy. The legislations on board gender diversity passed in many European countries[7] can be categorized into mandatory and voluntary regulations (Nekhili et al. 2020). As discussed in Mateos de Cabo et al. (2019), the mandatory regulations,

[7] These include France, Italy, Belgium, Spain, Germany, Iceland, the Netherlands, and, more recently, Austria, Portugal and Greece. For more details, see European Commission (2021).

which are generally referred to as gender quota laws, can be further categorized into "hard quota" and "soft quota" laws. Hard quota laws come with heavy sanctions; for example, firms would be delisted from stock exchanges or forcibly terminated if they do not have the required share of women directors (Nekhili et al. 2020). In case of noncompliance with the soft quota laws, however, firms will be allowed to trade in the stock market, but will not be eligible for subsidies or government contracts (Mateos de Cabo et al. 2019).

As for mandatory regulations, Norway was the first European country to legislate on board gender diversity in 2003. The law required the listed firms to have at least 40% of women directors by July 2005, with no sanctions for non-compliant firms (Ahern and Dittmar 2012). As firms failed to achieve the required share voluntarily, the 40% share of women directors was made compulsory in January 2006, giving firms a two-year grace period for either complying with the law or being dissolved. Switching to the hard quota law speeded up the process, and the required share of women directors was achieved by the end of 2007 (Ahern and Dittmar 2012). Italy and Belgium introduced gender quota laws in 2011.[8] The Italian legislation mandated 40% women directors (Ferrari et al. 2018), whereas Belgium set the share of women directors to 33% (Levrau 2017). A soft quota law passed in Spain in 2007 required firms to have at least 40% directors from both genders. Mateos de Cabo et al. (2019) show that the Spanish reform failed from both sides. Neither the firms achieved the desired share of women directors, nor did the Spanish government apply the preferential treatment of diversified firms envisaged in the law. While Iceland adopted soft quota laws in 2010, Netherlands did so in 2013. Iceland required 40% representation of women directors in listed firms (Arnardottir and Sigurjohnsson 2017), and their targeted firms successfully achieved this (Mensi-Klarbach and Seierstad 2020). This was not the case for Netherlands, who had to

[8] France introduced the "hard quota" law in 2011, whereas Germany did so in 2015. We illustrate the French legislation in sub-section 3.1. In the same sub-section, we discuss the German experience, as we rely on it for our identification strategy.

postpone the deadline set for achieving the 30% desired share of women directors (Kruisinga and Senden 2017). Portugal and Austria also enacted soft quota laws, in 2017, aiming to achieve 33% and 30% of women directors, respectively (Mensi-Klarbach and Seierstad 2020). However, these quotas are not yet due.

Voluntary regulations only provide guidelines and recommendations to firms. In case of non-compliance, the firms have to explain why they failed, and come up with plans showing how they propose to achieve gender diversity in future. Countries relying on voluntary regulations include Australia,[9] the United States,[10] Germany until 2015; the United Kingdom (UK) and many European countries adopted this approach.[11]

The voluntary approach is well exemplified in the UK. The share of women directors in the Financial Time Stock Exchange (FTSE) 100 firms increased from 9.4% in 2004 to 12.5% in 2010 (Nekhili et al. 2020). Accordingly, the government issued guidelines in 2011 for speeding up the slow growth in share of women directors on boards. The desired share in the FTSE 100 firms was 25% women directors by the end of 2015. At 17% in 2013 (Nekhili et al. 2020), the share of women directors showed an increasing trend in more recent years, to reach 30% by the end of 2016; the regulation was then extended to cover the FTSE 250 firms (Bennouri et al. 2020).[12]

### 3.1. France and Germany

[9] Perhaps, one of the most successful reforms has been executed in Australia, even though it was based on voluntary participation. In 2010, Australia implemented a proactive reform requiring listed firms to disclose their gender diversity policies and objectives (Choudhury 2015). After the reform, the share of women directors increased from 8% in 2010 to 15.7% in 2013, and to 31% by the end of 2018.

[10] In the United States, such regulations take place at the state level. In 2018, California was the first state to adopt a gender board diversity law.

[11] The European countries that adopted voluntary approaches are Sweden, Finland, Luxembourg, Slovenia, Denmark, Poland, Romania, and Ireland (Arndt and Wrohlich 2019).

[12] Among OECD countries, Canada alone requires disclosure of women representatives on corporate boards without recommending or imposing specific targets. Critics maintain that this approach is responsible for the relative low number of women directors (MacDougall et al. 2021). According to the most recent available data (Statistics Canada *The Daily*, release 2021-03-23, https://www150.statcan.gc.ca), in 2018 women directors accounted for 18.3% of all directors on Canadian corporate boards.

Following Norway, France introduced a very strict gender quota law—known as the Cope-Zimmermann law—in 2011. The law applied to all listed firms and non-listed firms with more than 500 employees or 50 million euro in revenue (average of last three years). The regulation required the subject firms to have at least 20% women directors by January 2014 and 40% by January 2017. Firms failing to achieve 40% women directors by the end of 2016 had to report how they planned to meet the requirement by the end of 2017. Those failing to comply would incur fines, a ban on payment of directors, or termination (Nekhili et al. 2020). The gender quota law was found to be effective in France, where the share of women directors reached more than 30% by the end of 2015 (Comi et al. 2020; Nekhili et al. 2020) and 40% by 2017 (Bennouri et al. 2020).

Underrepresentation of women in boards has been at the center of public debates in Germany since the mid-2000s. Following the failure of the voluntary approach introduced in 2005, by which the share of women directors increased from 5% to a modest 13% in 2013, a hard gender quota law was introduced in March 2015, aiming to reach 30% women directors by the end of 2016 (Piscopo and Muntean 2018).[13] The law applied to listed firms with full co-determination, that is, firms with more than 2,000 employees. Unlike France and Norway, Germany imposed rather "light" sanctions on firms not complying with the quota law, such as keeping seats on boards vacant and forcing firms to pay fines up to 50,000 euros (Fedorets et al. 2019). The legislation led to criticisms because it affected a limited number of firms (Piscopo and Muntean 2018),[14] and the law had limited success. As Fedorets et al. (2019) show, the percentage of women directors in firms affected by the gender quota law was only 18% by the end of 2016.

[13] German firms are subject to a dual governance system, by which firms are governed by a managerial and a supervisory board. While the former is responsible of day-to-day business, the latter monitors and advises the managerial board and sets long-term objectives (Fedorets et al. 2019). The gender quota law in Germany mandated firms to increase the share of women representatives only in supervisory boards.

[14] When it came into force in 2015, the law applied to approximately 100 firms.

## 4. DATA, SAMPLE SELECTION, MATCHING, AND DESCRIPTIVE STATISTICS

### 4.1. Data

This study uses firm-level longitudinal data for the period 2007–2015 obtained from Orbis, an administrative database of Bureau van Dijk. We consider the Orbis database appropriate to estimate the effect of gender quota laws on OFDI for several reasons (Kalemli-Ozcan et al. 2015; Ribeiro et al. 2010). First, its minute data on subsidiaries allow us to consider several OFDI dimensions. Second, the details it presents on board composition are key to introducing board gender diversity. Third, the wide spectrum of its balance sheet data allows us to define firm performance convincingly. Fourth, its broad coverage in terms of years allows us to use panel data; this is essential in addressing causality issues. Finally, the availability of all relevant information from a single source warrants consistency in data and makes the use of the Orbis database particularly appealing.

Note that we obtained our dataset through data mining and cleaning processes. As most subsidiary and board information could not be readily downloaded from the Orbis website, we obtained the relevant information from Bureau van Dijk under a special research agreement. Moreover, the information obtained could not be used as is, but had to be processed in order to build consistent OFDI measures and board gender diversity.[15] As our main outcome of interest is OFDI, we considered several of its dimensions, to capture various aspects of the decision to invest abroad. These included the share of foreign subsidiaries, probability of having a foreign subsidiary, number of foreign subsidiaries, and number of subsidiaries outside the EU. Note that we also consider a few firm performance indicators as an outcome; these include capital, profit, value-added per employee, total assets, ROE, and return on capital employed (ROCE). We also consider the number of employees, cost of employees, and average cost per-employee.

[15] We manually assigned the gender information based on first name of individuals for the period 2008–2010. If gender was not obvious from the first name, we made a web search based on name and surname, and decided the person's gender from his/her picture. As for years 2011 through 2015, the directors' gender information is available in our dataset by default.

We study such measures to establish whether any change in firm performance has affected OFDI, because the former is a major driver of firm internationalization in the literature.[16]

### 4.2. Sample selection

We estimate the causal effects of increased share of women directors in France on OFDI after the gender quota law was enacted in 2011. To this end, we adopt a DID approach,[17] considering publicly listed French firms as our treatment group. As mentioned in sub-section 3.1, the gender quota law applies to listed and large non-listed firms. We confine our attention to the former because Orbis provides more-detailed information for listed firms. Furthermore, as listed firms play an important role in capital markets, it is challenging to understand how the gender quota laws affected them.

As all listed firms in France are subject to the gender quota law, we cannot simply consider any one subgroup as a counterfactual group. One might consider creating a control group comprising the firms that already had the required share of women directors before the law was passed, as in Ahern and Dittmar (2012) for Norway. However, very few firms in our data come within this description. Unlike Norwegian firms, French firms had to meet two targets at different points in time, implying that our control group firms should have already had 40% women directors by 2010, when the average share of women directors was around 9%. An alternative could be to work with non-listed firms that are expected to comply with the gender quota law, that is, firms with more than 500 employees or 50 million euro in revenue. However, in this case, there could be endogenous selection for treatment. Evidence from Norway suggests that non-listed firms are more likely than listed firms to undergo changes, to avoid compliance with the gender quota law (Bøhren and Staubo 2014). To avoid the endogenous participation of firms in "treatment," one would have to set a large bandwidth

[16] See Helpman et al. (2004, 2008), Borin and Mancini (2016), Gao et al. (2018), Lu et. al (2017), and Cui and Xu (2019). For surveys, see Hayakawa et al. (2012) and Greenaway and Kneller (2007).
[17] See Section 5.

around the running variables (number of employee and firm revenue) of non-listed firms, but this is not possible in our case because of the limited coverage of smaller firms in the Orbis database. Nevertheless, even if this was possible, having a counterfactual group of small non-listed firms as opposed to large listed firms in the treatment group could affect comparability. Considering the above, we look for an appropriate control group outside France, and thus choose the publicly listed firms in Germany. We believe that this decision is most appropriate in our context. Our data thus allow us to create (through matching, as explained below) a sample of French and German firms with very similar institutional setting, size, sectoral activities, and economic performance prior to the treatment period. While Germany and France share borders, they are also two of the largest EU economies. Germany has the highest gross domestic product (GDP) among European countries, with more than 3 trillion US dollars in 2019, while France comes third with a GDP of around 2.8 trillion US dollars.[18] Given their EU membership, these economies are subject to the same international regulations with regard to cross-border investments. Table 1 reports the country-level indicators for France and Germany related to OFDI stock [columns (1)–(3)], OFDI flows [columns (4)–(6)], stock market returns [columns (7)–(9)], stock price volatility [columns (10)–(12)], and GDP per capita [columns (14)–(16)] for the period 2013–2017. The data show similar levels and trends over time. Hence, we conclude that the firms in our treatment and control groups are from highly comparable countries. Nevertheless, to check the validity of our findings, we consider also a control group that in addition to German firms, includes publicly listed firms from the UK. The aggregate data on UK firms reported in Table 1 confirm in turn the similarities between the treatment and control group economies.

[18] See IMF website at this link: https://www.imf.org/en/Publications/WEO/weo-database/2019/October/weo-report?c=132,134,&s=NGDPD,&sy=2017&ey=2019&ssm=0&scsm=1&scc=0&ssd=1&ssc=0&sic=0&sort=country&ds=.&br=1

Table 1: Country-level indicators

| | FDI stock | | | FDI flow | | | Stock market return | | | Volatility | | | GDP per capita | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) FR | (2) DE | (3) UK | (4) FR | (5) DE | (6) UK | (7) FR | (8) DE | (9) UK | (10) FR | (11) DE | (12) UK | (13) FR | (14) DE | (15) UK |
| 2003 | 29.30 | 29.50 | 60.50 | 1.00 | 0.22 | 3.12 | -17.50 | -21.70 | -10.80 | 35.05 | 38.08 | 24.88 | 38985.50 | 38218.40 | 38166.50 |
| 2004 | 28.90 | 28.20 | 55.00 | 1.00 | 0.72 | 4.26 | 18.17 | 25.89 | 13.67 | 21.55 | 25.23 | 15.04 | 39794.60 | 38673.90 | 38840.90 |
| 2005 | 28.70 | 27.90 | 48.80 | 3.00 | 2.60 | 3.48 | 15.83 | 18.17 | 15.04 | 12.78 | 14.13 | 9.22 | 40152.70 | 38969.30 | 39789.80 |
| 2006 | 35.40 | 32.90 | 53.90 | 3.30 | 3.80 | 2.98 | 19.61 | 26.27 | 16.71 | 12.87 | 13.64 | 10.48 | 40850.40 | 40456.90 | 40504.80 |
| 2007 | 37.90 | 36.40 | 59.50 | 4.10 | 4.90 | 10.80 | 12.19 | 26.46 | 9.41 | 15.13 | 15.47 | 13.44 | 41582.80 | 41831.90 | 41213.70 |
| 2008 | 31.90 | 31.80 | 55.80 | 3.50 | 1.90 | 6.78 | -24.20 | -17.60 | -17.50 | 23.52 | 21.94 | 22.22 | 41456.50 | 42365.10 | 40749.20 |
| 2009 | 41.50 | 38.90 | 68.10 | 3.70 | 2.00 | 1.20 | -22.90 | -20.50 | -14.50 | 37.93 | 36.12 | 33.62 | 40058.70 | 40086.10 | 38724.70 |
| 2010 | 44.20 | 40.10 | 68.10 | 1.80 | 3.60 | 1.94 | 11.96 | 24.60 | 20.96 | 27.79 | 26.72 | 22.77 | 40638.30 | 41785.60 | 39079.80 |
| 2011 | 43.50 | 38.30 | 65.00 | 1.70 | 2.00 | 3.59 | -4.25 | 7.22 | 4.60 | 23.46 | 20.44 | 17.69 | 41329.00 | 44125.30 | 39413.30 |
| 2012 | 47.30 | 44.50 | 62.60 | 1.30 | 1.70 | 0.77 | -6.66 | 4.20 | 1.33 | 27.36 | 26.59 | 19.47 | 41258.30 | 44259.30 | 39706.60 |
| 2013 | 47.00 | 40.30 | 64.40 | 0.72 | 1.00 | 1.45 | 18.07 | 22.93 | 14.80 | 20.78 | 18.54 | 14.06 | 41283.00 | 44354.70 | 40248.70 |
| 2014 | 45.20 | 36.00 | 54.80 | 1.70 | 2.10 | -4.90 | 9.63 | 15.16 | 4.29 | 15.39 | 14.44 | 11.24 | 41478.20 | 45132.30 | 41124.10 |
| 2015 | 51.80 | 40.70 | 54.80 | 2.10 | 2.90 | -2.20 | 11.43 | 16.76 | 0.40 | 18.43 | 18.33 | 12.60 | 41765.20 | 45521.30 | 41756.90 |
| 2016 | 51.80 | 39.40 | 58.10 | 2.60 | 1.80 | -1.30 | -8.46 | -5.54 | -1.41 | 23.63 | 23.43 | 17.40 | 42054.50 | 46167.80 | 42201.60 |
| 2017 | 55.40 | 45.00 | 66.50 | 1.30 | 2.80 | 4.40 | 17.15 | 22.41 | 14.10 | 17.40 | 16.81 | 13.39 | 43001.60 | 46987.80 | 42669.60 |

Notes: This table reports country level indicators for France (FR), Germany (DE), and United Kingdom (UK). Columns (1)–(3) show the OFDI stocks as a percentage of GDP, while the columns (4)–(6) show the OFDI flows as a percentage of GDP. The data reported in columns (1)–(6) are extracted from the United Nations Conference on Trade and Development (UNCTAD) database. Columns (7)–(9) report the year-on-year stock market returns as percentages, while columns (10)–(12) report the stock price volatilities for each country. Columns (13)–(15) report the GDP per capita over the years. The data provided in columns (7)–(15) are extracted from the World Bank database. Both sources used to create this table are open data sources and available to the public.

### 4.3. Matching

For matching, we select firms for which we have data for at least six consecutive years. This allows us an estimation sample of firms that can be observed for at least one year before or after the gender quota law was passed in France. To improve the comparability of the treated and control firms, we adopt a two-step matching procedure based on some key observable firm characteristics. First, we match the listed French and German firms based on their 4-digit NACE[19] sectoral codes; this ensures that they operate in exactly the same sectors. Second, from these matched firms, we compute the average differences in absolute terms for several outcomes related to firm economic performance and size, specifically: log capital, log value-added per employee, log total assets, and log number of employees,[20] for the period 2007–2010. We then introduce a restriction on these differences, selecting the matched firms with less than 1.5 log points difference in capital, total assets, and number of employees; this restriction is 0.8 log points for value-added per employee.[21] Thus, we build our main estimation sample with firms in the same sector and, on average, very similar in size and performance measures prior to introduction of the gender quota law. Our selection criteria help us to identify the causal impact of the gender quota law on the firms' OFDI, as our matching procedure does not directly measure the firms' OFDI. Our main estimation sample includes 108 French firms with 918 firm-year observations, matching 98 German firms with 842 firm-year observations.

[19] The Statistical Classification of Economic Activities, commonly referred to as NACE (for the French term "nomenclature statistique des activités économiques dans la Communauté européenne"), is the industry standard classification system used in the EU. The current version is revision 2; it was established by Regulation (EC) No 1893/2006.

[20] The variables chosen for our matching are very similar to those used in other studies in the literature (see, e.g., Comi et al. 2020).

[21] We impose a narrower restriction on value-added per employee because the difference in this variable between the treatment and control groups is smaller compared with other variables used in matching. We also present the results obtained for samples built on different choices in the second step of our matching procedure (applying narrower and wider bandwidths). See sub-section 7.2. We have also re-estimated our main findings by performing a propensity score nearest neighbor matching. While we obtain estimates very similar to our main findings, the sample size reduces significantly due to demanding nature of propensity score matching. Results are available upon request.

We observe 206 firms on average for 8.4 consecutive years (with a standard deviation of 1.076) in our main estimation sample.

### 4.4. Descriptive statistics

Table 2 reports the mean statistics of variables for our treatment (columns 1 and 4) and control (columns 2 and 5) groups, as well as the standardized mean differences in these variables (columns 3 and 6). Note that our matching procedure relies on the average values of variables before the gender quota law was passed in France. From columns (1) to (3), we observe that our selected firms are similar to each other with regard to the variables used in matching as well as the variables related to firm performance, such as profit, current and fixed assets, and sales. Imbens and Rubin (2015) suggest the threshold of standardized mean differences to be 0.20. In Table 2, the main differences reported in column (3) are below the threshold, except for capital. Moreover, the standardized difference between the treatment and control groups' average share of foreign subsidiaries, which is the main outcome of interest in our analysis, was 0.27 before the gender quota law was passed. This gap does not confound our identification strategy because we investigate the trends in difference (hence, the DID estimates) as long as the parallel trend assumption is valid for this variable. Therefore, our results provide further year-by-year investigation on this outcome, highlighting the descriptive evidence as well as coefficient estimates obtained from our event-study specification. Furthermore, all firms in our sample are very likely to have at least one foreign subsidiary, indicating that they invest abroad.

Table 2: Summary statistics of treated and control firms before and after the gender quota law in France

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Before Quota (2007 ≤Year<2011) | | | After Quota (2011 ≤Year ≤2015) | | |
| | Treated | Control | Std. dif. | Treated | Control | Std. dif. |
| *Variables used in matching* | | | | | | |
| Log capital | 9.94 | 10.57 | -.31 | 9.81 | 10.47 | -.33 |
| Log number of employees | 7.24 | 7.28 | -.01 | 7.17 | 7.33 | -.06 |
| Log total assets | 12.73 | 13.07 | -.13 | 12.65 | 13.01 | -.13 |
| Log added-value per employee | 4.54 | 4.65 | -.20 | 4.49 | 4.61 | -.21 |
| *Other variables* | | | | | | |
| Log profit | 11.94 | 12.18 | -.10 | 11.85 | 12.16 | -.13 |
| Log fixed assets | 11.77 | 12.20 | -.14 | 11.69 | 12.10 | -.13 |
| Log current assets | 12.07 | 12.37 | -.12 | 11.98 | 12.32 | -.14 |
| Log tangible assets | 10.18 | 10.91 | -.22 | 9.9 | 10.8 | -.24 |
| Log sales | 12.63 | 13.07 | -.18 | 12.52 | 13.06 | -.21 |
| Log cost of employees | 11.47 | 11.50 | -.01 | 11.38 | 11.52 | -.06 |
| Log cost per employee | 4.23 | 4.22 | .03 | 4.20 | 4.19 | .03 |
| ROE | 6.64 | 9.72 | -.11 | 5.83 | 7.91 | -.05 |
| ROCE | 7.32 | 8.50 | -.07 | 6.57 | 7.45 | -.04 |
| *Subsidiaries* | | | | | | |
| Share of foreign subs. | .435 | .350 | .27 | .460 | .408 | .17 |
| Num. of foreign subs. | 14.78 | 19.13 | -.10 | 15.43 | 25.63 | -.21 |
| Prob. of having a foreign sub. | .901 | .837 | .19 | .884 | .889 | -.01 |
| Num. of subs. in EU | 6.36 | 8.34 | -.10 | 5.73 | 9.52 | -.18 |
| Num. of subs. in extra-EU | 8.34 | 10.78 | -.09 | 9.70 | 16.10 | -.21 |
| Tot. num. of subs. | 41.07 | 68.00 | -.19 | 41.86 | 101.7 | -.32 |
| Num. of observations | 406 | 363 | | 512 | 479 | |

Notes: This table reports the mean statistics of variables for treated (French) firms in columns (1) and (4), and for matched control (German) firms in columns (2) and (5) before and after the gender quota law was passed in France. In columns (3) and (6), we provide standardized differences between the treated and control firms for a given variable. Std. dif. stands for standardized differences, and it is calculated as having the mean difference between the treatment and control groups divided by the standard deviation of given variable.

## 5. IDENTIFICATION STRATEGY AND ECONOMETRIC SPECIFICATIONS

As stated above, our sample consists of listed French and German firms with similar characteristics. As French firms were subject to the gender quota law since 2011, we employ a DID empirical strategy to identify the causal gender quota law effects on the listed French firms. Our aim is to exploit the timing differential in implementing the law in France across time (before and after the quota law) and firms (French and German firms), and compare the differences between the treatment and control groups' outcomes before and after introduction of the gender quota in France.

### 5.1. Econometric specification for average effects

Our econometric specification to estimate average effects is as follows.

$$Y_{it} = \alpha + Post_{1t} + Post_{2t} + Treatment_i + f_i + \theta_1(Treatment_i * Post_{1t}) + \theta_2(Treatment_i * Post_{2t}) + X'_{it}\beta + e_{it} \quad (1)$$

On the left-hand side of Equation (1), $Y_{it}$ is the outcome of firm *i* in year *t*. Our main variables of interest are the share of foreign subsidiaries, probability of having a foreign subsidiary, number of foreign subsidiaries, and number of subsidiaries based outside the EU.[22] On the right-hand side of the equation, $Post_{1t}$ is a dummy equal to 1 if year *t* is between 2011 and 2013, $Post_{2t}$ is dummy equal to 1 if year *t* is between 2014 and 2015, $Treatment_i$ is a dummy equal to 1 if firm *i* is from France, and $f_i$ stands for firm fixed effects, to capture all the unobservable time-invariant firm characteristics. When we include the firm fixed effects in the model, $Treatment_i$ will be absorbed. The parameter estimates of $\theta_1$ and $\theta_2$, which are associated with the interaction terms, indicate the treatment effects. As the gender quota law requires all listed French firms to gradually comply with the law over time,[23] we estimate the

[22] We further use Equation (1) to estimate the effects of the quota law on firms' outcomes other than OFDI, such as capital, profit, total assets, number of employees, cost of employees, cost per employee, value-added per employee, ROE, and ROCE. These results are reported in sub-section 6.2.

[23] The share of women directors had to be at least 20% and 40% by the end of 2013 and 2016, respectively. See sub-section 3.1.

two parameters to capture the differential effects, if any, across the two periods. $X'_{it}$ is the vector of control variables, that is, the log capital, log number of employees, log tangible assets, log sales, log total assets, and year-specific sector fixed effects, which control for the sectoral trends non-parametrically, and $e_{it}$ captures the unobservables of firm *i* in year *t*. Standard errors are clustered at the firm level.

### 5.2. Event-Study Specification

The assumption underlying our empirical setup is that the difference in outcomes between the treatment and control groups would have followed parallel trends in the absence of treatment. Hence, we rely on an event-study specification to investigate the presence of statistically significant pre-trends in the treatment and control group outcomes before the gender quota law was passed in France. This empirical examination is essential for our identification strategy. Moreover, this flexible econometric specification reveals the effect of the gender quota law year-by-year and provides insights on the treatment effect dynamics.

The econometric event-study specification is as follows:

$$Y_{it} = \sum_{t=2007}^{2015} \theta_t (Treatment_i * \tau_t) + Treatment_i + f_i + \tau_t + \beta X_{it} + e_{it} \qquad (2)$$

where $Y_{it}$ is the outcome of firm $i$ in year $t$, $Treatment_i$ is a dummy equal to 1 if firm $i$ is treated (France) and 0 otherwise (Germany), $\tau_t$ denotes the yearly time dummies, and the interaction terms between the treated group and years provide the gender quota law's causal effects. Hence, the parameters of interest in this equation are $\theta_t$. When year 2010 is taken as a baseline, the coefficient estimates of $\theta_t$ prior to 2010 would show whether the parallel trend assumption is valid and the estimates after 2010 would provide us the treatment effects. $f_i$ stands for the firm fixed effects that control for the unobservable time-invariant characteristics of all firms. $X_{it}$ denotes the control variables.

We will use this model to estimate both our first-stage (the effect of quota law on the share of women directors) and reduced form regressions (the effect of quota law on the share of foreign subsidiaries).

## 6. RESULTS

Figure 1 presents the results of our event-study analysis from Equation (2) for both first-stage (Panel-B) and reduced form (Panel D) regressions, together with some descriptive evidence from unconditional averages of the variables (Panels A and C). The event-study analysis provides us with details on the timing of events, that are essential for our identification strategy.

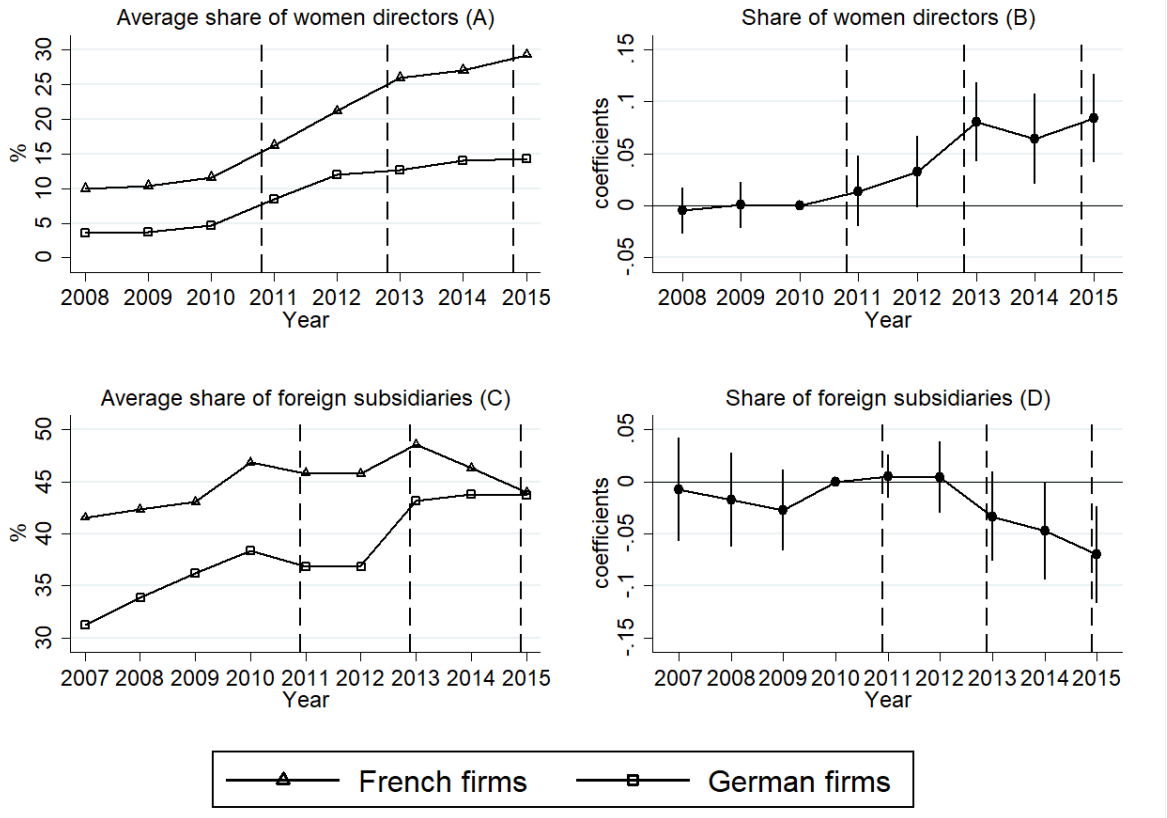


**Figure 1: Results of first-stage and reduced form regressions**. Panels (A) and (C) present the average share of women directors and average share of foreign subsidiaries respectively, for French (treated) and German (control) firms; panels (B) and (D) report the coefficient estimates of the interaction terms outlined in Equation (2) with confidence intervals at 90%. The regression includes firm fixed effects and time dummies (the omitted category is year 2010). Standard errors are clustered at the firm level. The dashed line in 2011 represents the gender quota law passed in France; the dashed line in 2013 represents end of the first phase of quota (20% women directors); the dashed line in 2015 represents the second phase of the gender quota law (40% women directors). Panels (C)-(D) are obtained from the main estimation sample, which consists of 1760 firm-year observation from 108 French and 98 German firms. Panels (A)-(D) are obtained from the main estimation sample, which consists of 1443 firm-year observation from 108 French and 98 German firms. Source: Authors' calibration from Orbis data.

Panel (A) shows the extent to which the gender quota law has changed the board composition of French firms by displaying the share of women directors (number of women directors/total number of directors) in the French and German firms included in our main estimation sample. Prior to 2011, the average share of women directors in French firms was about 10%; this increased to 30% by the end of 2015. These results agree with the findings in the literature (e.g., Comi et al. 2020). The corresponding results for the German firms in our control group are lower; about 5% of board directors were women in the 2008–2010 period; it increased to 14% by the end of 2015.[24] These data are consistent with the evidence presented in Section 3. Despite the difference in levels, the shares of women directors in French and German firms follow parallel trends from 2008 to 2012. The gap starts widening after 2012 when the first phase of French quota law ends, and it continues to widen through 2015. We quantify the latter widening pattern by estimating DID coefficients that are presented in Panel (B). We observe the first significant increase, 0.080 (p-value 0.001), in year 2013, which marks the end of the first phase of quota law. At the end of the 2015, the relative increase in the share of women directors in French firms is 0.083 (p-value 0.001).

Figure 2 plots the board size across French and German firms. Although board size in French firms decreases after the introduction of the quota law, possibly to facilitate compliance, the same decrease is observed for the German firms. Taken together, Panel (A) of Figure 1 and

[24] In some years, a few firms do not have data on the gender of directors. Specifically, we compute the numbers for French firms in Figure 1 from 103 firms in 2008, 105 firms in 2009, 107 firms in 2010, 67 firms in 2011, 78 firms in 2012, 79 firms in 2013, and finally all 108 firms in years 2014 and 2015. As for German firms, these numbers are obtained from 90 firms in 2008, 94 firms in 2009, 98 firms in 2010, 65 firms in 2011, 71 firms in 2012, and 74 firms in 2013, and all 98 firms in 2014 and 2015. One might have concerns about the endogenous reporting of information on directors following the introduction of the quota law in France. However, the number of missing French firms is proportional to the number of missing German firms, indicating that the missing information is rather due to the data source rather than firm decisions. Moreover, as our empirical strategy does not use the gender quota law as an instrument, but rather estimates its effect on the outcomes of interest in a "reduced form", our findings will not be affected by this inconsistency in availability of board information for some firms.

Figure 2 suggest that the increase in relative share of women directors in French firms takes place whilst relative board size is held constant.[25]

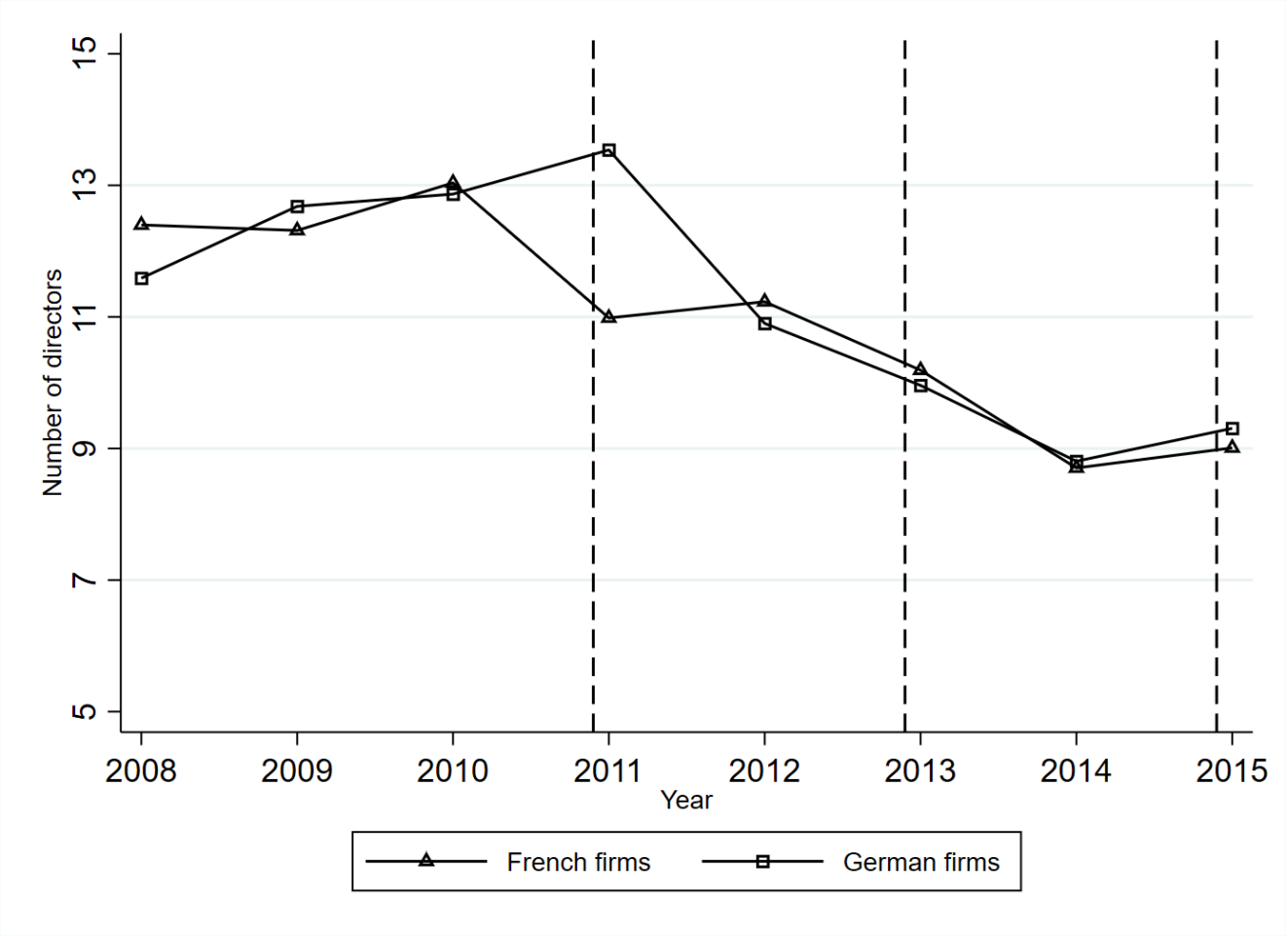


**Figure 2: The number of directors.** This figure reports the average board size in firms included in the main estimation sample. For French firms, we compute the numbers from 103 firms in 2008, 105 firms in 2009, 107 firms in 2010, 67 firms in 2011, 78 firms in 2012, 79 firms in 2013, and, finally, from all 108 firms in years 2014 and 2015. As for German firms, these numbers are obtained from 90 firms in 2008, 94 firms in 2009, 98 firms in 2010, 65 firms in 2011, 71 firms in 2012, 74 firms in 2013, and all 98 firms in years 2014 and 2015. Vertical dots represent introduction of the gender quota law in France in 2011, end of the first-phase in 2013, and end of the second-phase (in our sample), respectively. Source: Authors' calibration from Orbis data.

[25] As stated in Section 3, a mandatory gender quota law was implemented in Germany in March 2015. Thus, our setup has a 9-month overlap between the quotas in France and Germany during the calendar year 2015. The overlap could raise concerns about our control group. Still, this should not be the case. From Figure 1, the share of women directors in France increased rapidly during the 2011–2015 period, but the corresponding increase was much lower and smoother for German firms. In addition, the German quota law does not apply to all listed firms, but to the listed firms with more than 2,000 employees. Thus, only a fraction of German firms in our sample is exposed to the German quota law. Nevertheless, we run robustness tests to address this issue. Results in Section 7 show that the overlap between the two quotas does not change our main results.

Let us now turn to consider OFDI by French and German firms. Panel (C) of Figure 1 presents the average share of foreign subsidiaries for French (line with triangle symbol) and German (line with square symbol) firms.[26] Panel (D) reports the coefficient estimates of $\theta_t$ (interaction terms between the treatment and time dummies) from Equation (2). The dashed lines in 2011, 2013, and 2015 represent the timing of passing the French gender quota law, end of the first phase, and end of the second phase, respectively.

In Panel (C), the share of foreign subsidiaries of both treated and control firms follows an upward trend from 2007 through 2010, whereas our results from Equation (2) show no significant differences (not even at a 90% confidence level). Thus, the parallel trend assumption is not violated in our setup. We do not observe an immediate effect after the gender quota law was passed in 2011. The decrease in share of foreign subsidiaries started by the end of 2013, when the French firms were expected to have at least 20% women directors to comply with the law. Although the above decrease is not significant, and was caused by slower increase in the outcome of French firms, the timing of this event is rather meaningful. The decreasing trend in outcome of the French firms started after 2013, with the share of foreign subsidiaries declining through 2015. As already discussed, the share of women directors reached its peak in 2014 and 2015 as the gender quota law required firms to have at least 40% women directors by 2016. The decline in outcome of the treated firms in 2014 and 2015 is indeed significant. The estimated coefficient for 2014 is -0.05 (p-value 0.092) and that for 2015 is -0.07 (p-value 0.013). These results indicate that increased board gender diversity affects strategic decision making, more specifically, cross-border firm investment. Moreover, from our results, gender diversity has a significant effect on strategy selection only when the share of women directors is relatively large.

[26] This is also equivalent to taking the number of foreign subsidiaries as an outcome, while controlling for the total number of subsidiaries in regressions.

One could attribute our results to the gender differences in risk aversion. For example, according to the "Lehman sisters" hypothesis (see, e.g., Adams and Ragunathan 2017), if the Lehman brothers were Lehman sisters, the 2008 financial crises would not have occurred, because women are more risk averse than men. Although some studies show women to be more risk averse than men (see, e.g., Arano et al. 2010; Niederle 2017), the difference in risk aversion disappear when self-selection into top managerial positions is taken into account (Croson and Gneezy 2009; Adams and Ragunathan 2017; Niessen and Ruenzi 2018). Thus, this hypothesis does not account for the decrease in share of foreign subsidiaries. A more likely explanation is that women holding top positions are tougher in monitoring managerial behavior and decision-making processes. Studies have shown that women tend to attend board meetings more often than men do, with the attendance of men directors increasing in more gender-diverse boards, which, overall, translates into increased monitoring (Adams and Ferreira 2009). Moreover, as Comi et al. (2020) argue, entrenched managers can support the appointment of more accommodating directors, putting private benefits above firm interests. As the gender quota law requires significant changes in a relatively short period of time, managers may lose control over the appointment of board members. Therefore, when the share of women directors exogenously increases because of the adoption of a gender quota law, firms are led to make more efficient investment decisions. As our data do not hold detailed individual information other than gender, we cannot conduct further tests to unfold the link between women directors' characteristics and decrease in foreign subsidiaries. Nevertheless, in the next sub-section, we illustrate the consequences of the gender quota law on a variety of firm outcomes that may help us to better understand the detected effects on OFDI.

### 6.1 Average effects

Table 3 presents the average effects obtained from Equation (1). Each panel reports our findings from specifications with different control variables.

Panel A reports estimation results with no control for firm fixed effects, year-specific sector fixed effects, or other performance related time-varying indicators. On average, significant decreases can be found in every outcome of French firms in years 2014 and 2015 (the interaction term $Treatment_i \times Post_{2t}$), compared with matched German firms. From Panel-A of Figure 1, the share of women directors is at its peak during these years. This explains the differential effects estimated for the two periods. The estimated effect on the share of foreign subsidiaries is a 7 p.p. (column 1) decrease. As for the probability of having a foreign subsidiary (column 2), we find a statistically significant effect of 14 p.p. decrease. This finding suggests that the decrease in share of foreign subsidiaries takes place mostly at extensive margins, with some firms relinquishing all OFDI activities. In addition, we estimate a significant decrease in the number of foreign subsidiaries by about 13 units (column 3). In columns (4) and (5), we see that the latter effect is driven by both decreases in the number of subsidiaries based outside (-5 units) and inside (-8 units) of Europe, respectively.

Potential confounding factors in our identification strategy are any occurrence concomitant to the introduction of the quota law and affecting French firms only. Because of France's colonial past, the Arab Spring is such a potential factor in our context. Starting in Tunisia in 2011, political unrest continued for the most part of the decade in North African countries (Morocco, Algeria, Libya, Egypt). With US and UAE, France was one of the top investors in the region before 2011 (Carril-Caccia et al. 2018) and so it was more exposed than other European countries to the adverse effects of political instability. In the years 2011-2015, France disinvested from the region while other European countries, including Germany did not (OECD.Stat).[27] To exclude any role of such disinvestments in accounting for our results, we estimate the effect of the quota law on the number of subsidiaries in North African countries (column 6). We show that that there is no significant effect on the number of subsidiaries based

[27] OECD.Stat: https://stats.oecd.org/index.aspx?DataSetCode.

in North Africa, suggesting that the Arab Spring does not generate our results by affecting French firms differently than German firms.

In panel B, we introduce firm fixed effects to control for all firm unobservable time-invariant characteristics. While the estimated coefficients shrink slightly, the findings still agree with those reported in panel A.

Finally, in panel C, in addition to firm fixed effects, we include year-specific sectoral fixed effects, which non-parametrically control the trends in sectors, as well as some time-varying observable performance indicators, such as capital, sales, number of employees, and tangible and total assets. These extra controls do not change the size and power of the estimated coefficient in the share of foreign subsidiaries. Moreover, these performance indicators are not significantly correlated with the latter outcome.[28]

[28] These coefficient estimates are not reported in the table; they are available upon request.

Table 3: Average effects of gender quota law on OFDI

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Share of for. sub. | Pr. of having for. sub. | N. Foreign. sub. | N. ex-EU | N. EU | N. North Africa |
| **Panel-A** | | | | | | |
| Treatment x $Post_{2t}$ | -0.07** | -0.14*** | -12.74** | -4.96** | -7.78** | 0.18 |
| | (0.03) | (0.04) | (5.63) | (2.14) | (3.79) | (0.13) |
| Treatment x $Post_{1t}$ | -0.01 | -0.02 | -1.20 | 0.30 | -1.50 | 0.12 |
| | (0.02) | (0.03) | (2.32) | (1.38) | (1.32) | (0.08) |
| $Post_{2t}$ | 0.09*** | 0.11*** | 15.85*** | 5.00*** | 10.85*** | 0.17*** |
| | (0.02) | (0.03) | (4.35) | (1.71) | (2.97) | (0.06) |
| $Post_{1t}$ | 0.04*** | 0.01 | 0.56 | -1.25 | 1.82 | 0.05 |
| | (0.01) | (0.02) | (2.02) | (1.29) | (1.11) | (0.05) |
| Treatment | 0.08** | 0.06 | -4.49 | -2.05 | -2.45 | 0.23** |
| | (0.04) | (0.04) | (5.74) | (2.63) | (3.66) | (0.11) |
| **Panel-B** | | | | | | |
| Treatment x $Post_{2t}$ | -0.05* | -0.12*** | -12.04** | -4.76** | -7.28* | 0.19 |
| | (0.03) | (0.04) | (5.67) | (2.16) | (3.82) | (0.12) |
| Treatment x $Post_{1t}$ | 0.00 | -0.01 | -2.11 | -0.09 | -2.02 | 0.12 |
| | (0.02) | (0.03) | (2.19) | (1.27) | (1.31) | (0.08) |
| $Post_{2t}$ | 0.07*** | 0.10*** | 16.49*** | 5.26*** | 11.23*** | 0.18*** |
| | (0.02) | (0.03) | (4.41) | (1.75) | (3.00) | (0.06) |
| $Post_{1t}$ | 0.02** | 0.01 | 2.05 | -0.69 | 2.74** | 0.06 |
| | (0.01) | (0.02) | (1.89) | (1.18) | (1.09) | (0.05) |
| **Panel-C** | | | | | | |
| Treatment x $Post_{2t}$ | -0.04* | -0.13*** | -8.39* | -3.36** | -5.03 | 0.26* |
| | (0.03) | (0.04) | (4.47) | (1.66) | (3.11) | (0.14) |
| Treatment x $Post_{1t}$ | -0.00 | -0.02 | -1.86 | -0.04 | -1.82 | 0.13* |
| | (0.02) | (0.02) | (2.08) | (1.13) | (1.14) | (0.08) |
| $Post_{2t}$ | 0.13** | 0.05** | 5.59*** | 2.16*** | 3.42*** | -0.07 |
| | (0.06) | (0.02) | (1.58) | (0.76) | (1.23) | (0.06) |
| $Post_{1t}$ | 0.13 | 0.13 | 4.65 | 1.98** | 2.68 | -0.07 |
| | (0.09) | (0.08) | (2.99) | (1.00) | (2.26) | (0.09) |
| Observations | 1760 | 1760 | 1760 | 1760 | 1760 | 1760 |

Notes: This table reports the results on the share of foreign subsidiaries (column 1), probability of having a foreign subsidiary (column 2), number of foreign subsidiaries (column 3), and number of subsidiaries located outside and inside the EU (columns 4 and 5). Column (6) reports the results on the subsidiaries located in North Africa. All results are estimated from Equation (1). Panel-A presents the results when the firm- and year-specific sectoral fixed effects are not included, Panel-B reports our findings after controlling for firm fixed effects, and Panel-C reports the results obtained after controlling for the time-varying performance indicators (log capital, log sales, log number of employees, log tangible assets, and log total assets) and firm- and year-specific sectoral fixed effects. The interaction terms between *Treatment* (dummy equal to 1 if firm *i* is from France), and *Post* dummies are the explanatory variables of interest. Standard errors are in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

### 6.2. Results on economic performance and labor outcomes

Table 4 presents the results on several firm outcomes, related to performance and the employment of labor input, from estimating Equation (1). We find no effect on firms' capital (column 1), total assets (column 2), average cost per employee (column 5), value-added per employee (column 6), profit (column 7), ROE (column 8), and ROCE (column 9). This seems to rule out changes in French firms' relative performance as the determinant of the observed changes in OFDI.[29] However, we estimate a significant decrease in number of employees (column 3) in French firms, by about 15 p.p., compared to matched German firms, and a 14 p.p. decrease in cost of employees (column 4). While the effect on number of employees is similar to that reported in Comi et al. (2020), we do not observe any effect on value-added per employee (column 6).[30]

The above results support the hypothesis that tougher monitoring of management by gender-diverse boards reduces management's scope for empire-building, limiting firm employment.[31]

[29] See sub-section 4.1.
[30] This difference occurs probably because we investigate the impact of the gender quota law for listed French firms while their sample includes non-listed firms.
[31] Because of the relative short time span covered by our sample, we do not expect to observe in the data any change in relative profitability of French firms following the reduction in OFDI by French firms.

Table 4: Effects of the gender quota law on firm performance and labor outcomes

| | (1) Capital | (2) Total assets | (3) Number of employees | (4) Cost of employees | (5) Cost per employee | (6) Value-added per employee | (7) Profit | (8) ROE | (9) ROCE |
|---|---|---|---|---|---|---|---|---|---|
| Treatment x $Post_{2t}$ | -0.02 | -0.02 | -0.15** | -0.14*** | 0.01 | 0.03 | -0.09 | 3.61 | 1.82 |
| | (0.05) | (0.06) | (0.06) | (0.05) | (0.03) | (0.05) | (0.06) | (5.11) | (2.36) |
| Treatment x $Post_{1t}$ | -0.03 | -0.01 | -0.05 | -0.06 | -0.01 | -0.02 | -0.03 | 1.04 | 0.77 |
| | (0.05) | (0.04) | (0.04) | (0.04) | (0.02) | (0.04) | (0.04) | (4.24) | (2.61) |
| $Post_{2t}$ | -0.08** | 0.06 | 0.21*** | 0.13*** | -0.08*** | -0.11*** | 0.08* | -3.59 | -2.39 |
| | (0.04) | (0.04) | (0.04) | (0.03) | (0.02) | (0.03) | (0.04) | (3.48) | (1.92) |
| $Post_{1t}$ | -0.00 | 0.06** | 0.11*** | 0.12*** | 0.01 | -0.01 | 0.09*** | -2.26 | -1.55 |
| | (0.03) | (0.03) | (0.03) | (0.03) | (0.02) | (0.03) | (0.03) | (3.37) | (2.19) |
| Observations | 1760 | 1760 | 1760 | 1759 | 1759 | 1738 | 1758 | 1760 | 1760 |

Notes: This table presents results of the gender quota law effects on capital, total assets, number of employees, cost of employees, cost per employee, value-added per employee, profit, ROE, and ROCE in columns (1)–(9), respectively. The dependent variables in columns (1)–(7) are in natural logarithms. Results are obtained from estimating Equation (1). Standard errors in parentheses are clustered at the firm level. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

### 6.3. Heterogeneous effect by sector

In this sub-section, we investigate whether the gender quota law in France affected firms belonging to different sectors heterogeneously. For this, we expand our main econometric specification from Equation (1) by including additional interaction terms associated with the sectors into our model.

$$Y_{it} = \alpha + Post_{1t} + Post_{2t} + Treatment_i + S_s + f_i + \eta(Treatment_i * S_s) + \pi_1(S_s * Post_{1t}) + \pi_2(S_s * Post_{2t}) + \theta_1(Treatment_i * Post_{1t}) + \theta_2(Treatment_i * Post_{2t}) + \lambda_1(Treatment_i * Post_{1t} * S_s) + \lambda_2(Treatment_i * Post_{2t} * S_s) + e_{it} \quad (3)$$

In Equation (3), $S_s$ is a dummy equal to 1 if firm *i* is part of a specified sector. We replicate the estimation procedure for each sector separately. The inclusion of firm fixed effects, $f_i$, will absorb the three variables $Treatment_i$, $S_s$ and $Treatment_i * S_s$. Parameters $\lambda_1$ and $\lambda_2$, which are associated with triple interaction terms, provide information on whether the effects of gender quota law are heterogeneous across sectors.

Our matching procedure involves matching firms by 4-digit sectoral codes, but the analysis in this sub-section exploits 1-digit sectoral codes for better statistical power in our estimation. We focus on the six 1-digit NACE sectors to which our main estimation sample firms belong. These are mining and quarrying (4%); manufacturing (39%); electricity, gas, steam, and air conditioning supply (8.5%); water supply, sewerage waste management, and remediation activities (6.7%); construction (3%); and distributive trade (35.4%).[32]

Our findings on the share of foreign subsidiaries from estimating Equation (3) are reported in Table 5. We find no differential effect across sectors in 2014 and 2015. The only significant effect is the 16 p.p. increase for the firms engaged in water supply, sewerage waste management, and remediation activities during the first three years after introduction of the gender quota law.

[32] The numbers in parentheses show the percentage of firms in a given sector.

Table 5: Heterogeneous effects of the gender quota law by sector

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Share of foreign subs. | Share of foreign subs. | Share of foreign subs. | Share of foreign subs. | Share of foreign subs. | Share of foreign subs. |
| *Treatment* $\times Post_{2t} \times Sector_s$ | -0.03 | -0.03 | 0.03 | 0.11 | -0.08 | 0.01 |
| | (0.07) | (0.05) | (0.07) | (0.09) | (0.10) | (0.06) |
| *Treatment* $\times Post_{1t} \times Sector_s$ | -0.03 | -0.03 | 0.06 | 0.16** | -0.07 | -0.02 |
| | (0.04) | (0.04) | (0.05) | (0.07) | (0.06) | (0.04) |
| *Treatment* $\times Post_{2t}$ | -0.04 | -0.04 | -0.05* | -0.05* | -0.04 | -0.05 |
| | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) |
| *Treatment* $\times Post_{1t}$ | 0.01 | 0.02 | -0.00 | -0.01 | 0.01 | 0.01 |
| | (0.02) | (0.03) | (0.02) | (0.02) | (0.02) | (0.02) |
| $Sector_s \times Post_{2t}$ | -0.01 | 0.00 | -0.03 | 0.02 | -0.00 | 0.00 |
| | (0.06) | (0.04) | (0.04) | (0.06) | (0.05) | (0.04) |
| $Sector_s \times Post_{1t}$ | -0.01 | 0.01 | -0.04 | -0.04 | 0.03 | 0.02 |
| | (0.03) | (0.02) | (0.02) | (0.04) | (0.04) | (0.03) |
| $Post_{2t}$ | 0.07*** | 0.07*** | 0.08*** | 0.07*** | 0.07*** | 0.07*** |
| | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) |
| $Post_{1t}$ | 0.02* | 0.02 | 0.03** | 0.03** | 0.02* | 0.02 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Observations | 1760 | 1760 | 1760 | 1760 | 1760 | 1760 |

Notes: This table reports the heterogeneous effects of the gender quota law on the share of foreign subsidiaries by sector. The triple interaction terms are the explanatory variables of interest. All results are obtained from estimating Equation (3). Columns (1)–(6) show the results for the sectors of mining and quarrying; manufacturing; electricity, gas, steam, and air conditioning supply; water supply, sewerage waste management, and remediation activities; construction; and distributive trade, respectively. Standard errors in parentheses are clustered at the firm level.* $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

## 7. SENSITIVITY ANALYSIS

In this section, we carry out some sensitivity tests related to our sample selection criteria and matching procedure.

### 7.1. Tests on the control group

First, we expand our control group and create an extended estimation sample, considering the firms from France as the treated group and those from Germany and the UK as the control group. As discussed in Section 3, the UK has no mandatory gender quota law in force, and any improvement in board diversity occurred mainly for the FTSE 100 firms, with the rest trying to catch up.[33] During the period of our analysis, women directors in the listed UK firms were still under-represented, even more so when compared with French firms.

We perform our matching on a pool of German and UK firms. The extended estimation sample includes our main estimation sample for matched French and German firms, with an additional 100 matched UK firms. The sample also includes another 54 French firms, as the inclusion of UK firms allowed for finding more matched French firms.[34] The extended estimation sample has 360 firms with 3099 firm-year observations.

Table 6 presents the results of estimating Equation (2) on the share of foreign subsidiaries for our main (column 1) as well as the extended (column 3) estimation sample for easier comparison with the new estimates. The borderline significant effect in 2009 is negligible as the p-value of this coefficient estimate is 0.092. As for the treatment years, the effects estimated from this expanded sample perfectly agree with our main regression results.

[33] See Bennouri et al. (2020).
[34] This does not imply that only 54 French firms match the 100 firms from the UK. Some of the French firms in our main sample also match firms from the UK.

Second, we conduct a test to find out whether, and the extent to which, the gender quota law implemented in Germany in March 2015 affected our results on the share of foreign subsidiaries. From a purely econometric point of view, the 9 months of overlapping between the gender quota law in France (end of the second phase) and that in Germany (the beginning of the first phase) can be considered a confounding factor in our identification. However, as already discussed earlier, we do not consider this to be the case in our context.[35]

Nevertheless, we perform a further test to address this issue. The quota applies to listed German firms with full co-determination (i.e., firms with more than 2,000 employees). We detect 39 German firms in our main estimation sample that fit the latter criteria, and exclude these observations. Using the econometric model outlined in Equation (2), we replicate the event-study regression on the share of foreign subsidiaries. Our results from the restricted sample agree with our main findings [Table 5, column (2)]. If anything, the effect we estimate for 2015 is now -0.09 p.p. (with a p-value of 0.011), suggesting that the presence of these 39 firms in our main estimation sample would only slightly attenuate our results, as one might expect from a theoretical point of view, rather than drive them.

[35] See Section 4.

Table 6: Effects of the gender quota law on the share of foreign subsidiaries

| | (1)<br>FR vs. DE | (2)<br>FR vs. DE | (3)<br>FR vs. DE-UK |
|---|---|---|---|
| Treatment × 2015 | -0.07** | -0.09** | -0.06*** |
| | (0.03) | (0.03) | (0.02) |
| Treatment × 2014 | -0.05* | -0.05 | -0.04* |
| | (0.03) | (0.04) | (0.02) |
| Treatment × 2013 | -0.03 | -0.05 | -0.03* |
| | (0.03) | (0.03) | (0.02) |
| Treatment × 2012 | 0.00 | -0.00 | -0.02 |
| | (0.02) | (0.03) | (0.02) |
| Treatment × 2011 | 0.01 | 0.01 | -0.01 |
| | (0.01) | (0.01) | (0.01) |
| *Baseline: Treatment X 2010* | | | |
| Treatment × 2009 | -0.03 | -0.03 | -0.03* |
| | (0.02) | (0.03) | (0.02) |
| Treatment × 2008 | -0.02 | 0.01 | -0.02 |
| | (0.03) | (0.04) | (0.02) |
| Treatment × 2007 | -0.01 | 0.00 | -0.02 |
| | (0.03) | (0.04) | (0.02) |
| Observations | 1760 | 1403 | 3099 |

Notes: This table reports the effects of the gender quota law on the share of foreign subsidiaries for our main estimation sample (column 1), our main estimation sample excluding German firms that have more than 2,000 employees in any given year (column 2), and the extended estimation sample including firms from the UK (column 3). The interaction terms are outlined in Equation (2). These regressions also include firm fixed effects and time dummies for the years interacted with the treatment dummy. Standard errors in parentheses are clustered at the firm level. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

### 7.2. Tests on the intensity of matching

We now consider the results obtained from applying different matching intensities to the variable on firm performance at the second stage of our matching procedure. We use two additional samples for this robustness exercise. First, we apply a narrower bandwidth to the difference in performance between the treatment and control groups at the baseline, to obtain 62 French firms matching with 58 German firms. The results for this sample are reported in Table 7, column (2). Second, we use a less restrictive bandwidth for matching, to obtain 148 French firms matching with 131 German firms. The results for this bandwidth are reported in Table 6, column (3).

Thus, the narrower the bandwidth, the bigger are the coefficient estimates, especially for year 2015. While a relative decrease occurs in 2015 with a wider bandwidth, this effect is still statistically significant at the 95% confidence level. Therefore, we choose a sample with an average bandwidth.

Table 7: Effects of the gender quota law on the share of foreign subsidiaries, alternative matching criteria

| | (1) | (2) | (3) |
|---|---|---|---|
| | Share of for. subs. | Share of for. subs. | Share of for. subs. |
| Treatment × 2015 | -0.07** | -0.10** | -0.05** |
| | (0.03) | (0.04) | (0.02) |
| Treatment × 2014 | -0.05* | -0.06* | -0.03 |
| | (0.03) | (0.03) | (0.02) |
| Treatment × 2013 | -0.03 | -0.05 | -0.02 |
| | (0.03) | (0.03) | (0.02) |
| Treatment × 2012 | 0.004 | -0.02 | -0.003 |
| | (0.02) | (0.02) | (0.01) |
| Treatment × 2011 | 0.005 | 0.003 | 0.002 |
| | (0.01) | (0.02) | (0.01) |
| *Baseline*: *Treatment* × 2010 | | | |
| Treatment × 2009 | -0.03 | -0.03* | -0.03 |
| | (0.02) | (0.02) | (0.02) |
| Treatment × 2008 | -0.02 | -0.002 | -0.02 |
| | (0.03) | (0.03) | (0.02) |
| Treatment × 2007 | -0.01 | -0.024 | -0.02 |
| | (0.03) | (0.03) | (0.02) |
| Bandwidth | [1.5;1.5;1.5;0.8] | [1.1;1.1;1.1;0.6] | [1.9;1.9;1.9;1.0] |
| Observations | 1760 | 1034 | 2337 |

Notes: This table reports the results on the share of foreign subsidiaries for different estimation samples generated by different matching criteria on firm performance. Results are obtained from estimating Equation (2). Column (1) shows results for our main estimation sample; column (2) shows results for the matched sample created with a more restrictive bandwidth on the matching variables; and column (3) shows results for the sample created with a less restrictive bandwidth on the matching variables. Numbers in brackets represent the restrictions (in log points) applied to log capital, log number of employees, log total assets, and log value-added per employee, respectively. $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

## 8. CONCLUSIONS

In this study, we investigated the causal link between gender quota laws and the OFDI of publicly listed French firms. We could identify the causality in our estimates because the law forced firms to hire more women directors, and to thus create an exogenous change in the gender composition of boards in a quasi-experimental environment. For our control group, we chose publicly listed German firms. Considering the similarities between the two countries in terms of stock market returns and volatility, and engagements in OFDI, we carried out an exact matching of their 4-digit sectoral codes and performance indicators. Since our data covered the period 2007–2015, we compared the difference in French firms' OFDI before and after the gender quota law.

We find that the increase in board gender diversity after introduction of the gender quota law reduced the probability of firms having a foreign subsidiary and the firms' share of foreign subsidiaries. These changes reduce the cost of employees, but do not affect firm performance. Our results further indicate that the intensity of treatment is relevant because we find significant effects only when the share of women directors is at its highest.

To the best of our knowledge, this is the first study to investigate the effect of gender-diverse boards on firm OFDI. Our contribution to the literature on board gender diversity is twofold. First, we provide new evidence of significant board gender-diversity effects on an important component of corporate strategy, cross-border investment. Second, rather important for its policy implications, we show that board gender quota laws affect the selection of strategies only when women directors are relatively in large numbers. We also contribute to the literature on firm's acquisition policy determinants by unveiling different board gender-diversity effects on domestic and cross-border operations.

We acknowledge some shortcomings of this work. We do not investigate the French gender quota law's medium-term impact on OFDI.[36] Lack of detailed information on directors' demographic characteristics and psychological traits, irrespective of gender, hinder us from providing direct evidence of the mechanisms driving our results. Finally, OFDI is one of the internationalization strategies available for firms. From our data, the more gender-diverse the boards become, the less likely are they to promote OFDI. However, this does not imply that board gender diversity results in less internationalized firms because boards may favor internationalization strategies other than cross-border investment. Future research could investigate how having more women directors affects a firm's exports and participation in global value chains, and provide a thorough understanding of the link between board gender diversity and firm internationalization.

[36] Germany introduced a mandatory board gender quota law in 2015, depriving us of the control group we consider most suitable for counterfactual analysis.

## References


Adams, R. B., and Daniel Ferreira. "A Theory of Friendly Boards." Journal of Finance, 62 (1), 2007, 217-250.

Adams, R. B., and Daniel Ferreira. "Women in the boardroom and their impact on governance and performance." Journal of financial economics, 94(2), 2009, 291-309.

Adams, R. B., Benjamin E. Hermalin, and Michael S. Weisbach. "The Role of Boards of Directors in Corporate Governance: A Conceptual Framework and Survey." Journal of Economic Literature, 48(1), 2010, 58-107.

Adams, R. B., and Vanitha Ragunathan. "Lehman sisters." Available at SSRN 3046451, 2017.

Ahern, K. R., and Amy K. Dittmar. "The changing of the boards: The impact on firm valuation of mandated female board representation." The Quarterly Journal of Economics, 127(1), 2012, 137-197.

Ahern, K. R., Daniele Daminelli, and Cesare Fracassi. "Lost in translation? The effect of cultural values on mergers around the world." Journal of Financial Economics, 117(1), 2015, 165-189.

Amore, M. D., Orsola Garofalo, and Alessandro Minichilli. "Gender Interactions within the Family Firm." Management Science, 60(5), 2014, 1083-1097.

Arano, K., Carl Parker, and Rory Terry. "Gender-Based Risk Aversion and Retirement Asset Allocation." Economic Inquiry, 48(1), 2010, 147-155.

Arnardottir, A. A., and Throstur O. Sigurjonsson. "Gender diversity on boards in Iceland: Pathway to gender quota law following a financial crisis.", in Gender diversity in the boardroom, Volume 1: The Use of Different Quota Regulations, edited by Cathrine Seierstad, Patricia Gabaldon, and Heike Mensi-Klarbach. Cham: Palgrave Macmillan, 2017, 75-101.

Arndt, P., and Katharina Wrohlich. "Gender quotas in a European comparison: Tough sanctions most effective", DIW Weekly Report, ISSN 2568-7697, Berlin: Deutsches Institut für Wirtschaftsforschung (DIW), 9(38), 2019, 337-344.

Bennouri, M., Chiara De Amicis, and Sonia Falconieri. "Welcome on board: A note on gender quotas regulation in Europe." Economics Letters, 190, 2020, 109055.

Bernile, G., Vineet Bhagwat, and Scott Yonker. "Board Diversity, Firm Risk, and Corporate Policies." Journal of Financial Economics, 127(3), 2018, 588-612.

Bøhren, Ø., and Siv Staubo. "Does mandatory gender balance work? Changing organizational form to avoid board upheaval." Journal of Corporate Finance, 28(C), 2014, 152-168.

Bøhren, Ø., and Siv Staubo. "Mandatory gender balance and board independence." European Financial Management, 22(1), 2016, 3-30.

Borin, A., and Michele Mancini. "Foreign direct investment and firm performance: an empirical analysis of Italian firms." Review of World Economics, 152(4), 2016, 705-732.

Boussaid, N., Taher Hamza and Danielle Sougné. "Corporate Board Attributes and Conditional Accounting Conservatism Evidence from French Firms." Journal of Applied Business Research, 31(3), 2015, 871-890.

Bruno, G., Angela Ciavarella, and Nadia Linciano. Boardroom gender diversity and performance of listed companies in Italy. Consob Quaderni di Finanza No. 87, 2018.

Carril-Caccia, F., Juliette Milgram Baleix, and Jordi Paniagua "FDI in the MENA Region: Factors that Hinder or Favour Investments in the Region", IEMED. Mediterranean Yearbook, 2018, 283-288.

Choudhury, B. "Gender diversity on boards: Beyond quotas." European Business Law Review, 26(1), 2015, 229-243.

Comi, S., Mara Grasseni, Federica Origo, and Laura Pagani. "Where women make a difference: gender quotas and firms' performance in three European countries." ILR Review, 73(3), 2020, 768-793.

Croson, R., and Uri Gneezy. "Gender differences in preferences." Journal of Economic Literature, 47(2), 2009, 448–474.

Cui, L., and Ying Xu. "Outward FDI and profitability of emerging economy firms: Diversifying from home resource dependence in early stage internationalization." Journal of World Business, 54(4), 2019, 372-386.

Dale-Olsen, H., Pal Schone, and Mette Verner. "Diversity among Norwegian boards of directors: Does a quota for women improve firm performance?" Feminist Economics, 19(4), 2013, 110-135.

Eckbo, B. E., Knut Nygaard, and Karin S. Thorburn. "Does Gender-Balancing the Board Reduce Firm Value?" CEPR Discussion Paper No. 11176, 2016.

Eckbo, B. E., Knut Nygaard, and Karin S. Thorburn. "Board gender-balancing and firm value." Unpublished working paper. Tuck School of Business at Dartmouth, 2019.

European Commission. 2021 Report on gender equality in the EU, 2021.

Fedorets, A., Anna Gibert, and Norma Schmitt Burow. "Gender Quotas in the Boardroom: New Evidence from Germany." DIW Berlin Discussion Paper No. 1810, 2019.

Ferrari, G., Valeria Ferraro, Paola Profeta, and Chiara Pronzato. "Do Board Gender Quotas Matter? Selection, Performance and Stock Market Effects." IZA Discussion Paper No. 11462, 2018.

Ferreira, D., Edith Ginglinger, Marie-Aude Laguna, and Yasmine Skalli. "Closing the Gap: Board Gender Quotas and Hiring Practices". Ecgi Finance Working Paper No. 520/2017, 2020.

Gao, G.Y., Danny T. Wang, and Yi Che. "Impact of historical conflict on FDI location and performance: Japanese investment in China." Journal of International Business Studies, 49(8), 2018, 1060-1080.

Green, C. P., and Swarnodeep Homroy. "Female Directors, Board Committees and Firm Performance." European Economic Review, 102(2), 2018, 19-38.

Greenaway, D. and Richard Kneller. "Firm Heterogeneity, Exporting and Foreign Direct Investment." Economic Journal, 117(2), 2007, F134-F161.

Greene, D., Vincent J. Intintoli, and Kathleen M. Kahle. "Do board gender quotas affect firm value? Evidence from California Senate Bill No. 826." Journal of Corporate finance, 60, 2020, 101526.

Guiso, L., Paola Sapienza, and Luigi Zingales. “Cultural biases in economic exchange?” The Quarterly Journal of Economics, 124(3), 2009, 1095-1131.

Hannan, Timothy H., and Ferdinand Mavinga,. “Expense Preference and Managerial Control: The Case of the Banking Firm.” Bell Journal of Economics, 11, 1980, 671–82.

Hayakawa, K, Fukunari Kimura, and Tomohiro Machikita. “Globalization and Productivity: A Survey of Firm-Level Analysis.” Journal of Economic Surveys, 26(2), 2012, 332-350.

Helpman, E., Marc Melitz, and Yona Rubinstein. “Estimating trade flows: Trading partners and trading volumes.” The Quarterly Journal of Economics, 123(2), 2008, 441-487.

Helpman, E., Marc J. Melitz, and Stephen R. Yeaple. “Export versus FDI with heterogeneous firms.” American Economic Review, 94(1), 2004, 300-316.

Huang, J., and Darren J. Kisgen. “Gender and corporate finance: Are male executives overconfident relative to female executives?.” Journal of Financial Economics, 108(3), 2013, 822-883.

Imbens, G. W., and Donald B. Rubin. “Causal inference in statistics, social, and biomedical sciences.” Cambridge: Cambridge University Press, 2015.

IMF. Balance of Payments Manual, 5th edn. Washington, DC: IMF, 1993.

Kalemli-Ozcan, S., Bent Sorensen, Carolina Villegas-Sanchez, Vadym Volosovych, and Sevcan Yesiltas. “How to Construct Nationally Representative Firm Level Data from the ORBIS Global Database.” NBER Working Paper No. 21558, 2015.

Kim, Daehyun and Laura T. Starks. “Gender Diversity on Corporate Boards: Do Women Contribute Unique Skills?” American Economic Review 106(5), 2016, 267-271.

Kirsch, A. “The gender composition of corporate boards: A review and research agenda.” The Leadership Quarterly, 29 (2), 2018, 346-364.

Kruisinga, S. A., and Linda Senden. “Gender diversity on corporate boards in the Netherlands: Waiting on the world to change.”, in Gender diversity in the boardroom, Volume 1: The Use of Different Quota Regulations, edited by Cathrine Seierstad, Patricia Gabaldon, and Heike Mensi-Klarbach. Cham: Palgrave Macmillan, 2017, 177-204.

Leuz, C., Karl V. Lins, and Francis E. Warnock. “Do foreigners invest less in poorly governed firms?” The Review of Financial Studies, 22(8), 2009, 3245-3285.

Levi, M., Kai Li, and Feng Zhang. “Director Gender and Mergers and Acquisitions.” Journal of Corporate Finance, 28(10), 2014, 185-200.

Levrau, A. “Belgium: Male/female united in the boardroom.”, in Gender diversity in the boardroom, Volume 1: The Use of Different Quota Regulations, edited by Cathrine Seierstad, Patricia Gabaldon, and Heike Mensi-Klarbach. Cham: Palgrave Macmillan, 2017, 155-175.

Lewellen, Wilbur, Claudio Loderer, and Ahron Rosenfeld. “Mergers, Executive Risk Reduction, and Stockholder Wealth.” Journal of Financial and Quantitative Analysis, 24, 1989, 459–72.

Lu, Y., Zhigang Tao, and Lianming Zhu. “Identifying FDI spillovers.” Journal of International Economics, 107(C), 2017, 75-90.

MacDougall, A., John Valley, and Jennifer Jeffrey. "2021 Diversity Disclosure Practices." Osler, 2021 https://www.osler.com/en/expertise/services/corporate-governance

Masulis, R. W., Cong Wang, and Fei Xie. "Globalizing the Boardroom--the Effects of Foreign Directors on Corporate Governance and Firm Performance." Journal of Accounting and Economics, 53(3), 2012, 527-554.

Mateos de Cabo, R., Siri Terjesen, Lorenzo Escot, and Ricardo Gimeno. "Do 'soft law'board gender quotas work? Evidence from a natural experiment." European Management Journal, 37(5), 2019, 611-624.

Matsa, D. A. and Amalia R. Miller. "A Female Style in Corporate Leadership? Evidence from Quotas." American Economic Journal: Applied Economics, 5(3), 2013, 136-169.

Mensi-Klarbach, H., and Cathrine Seierstad. "Gender quotas on corporate boards: Similarities and differences in quota scenarios." European Management Review, 17(3), 2020, 615-631.

Nekhili, M., Moez Bennouri, and Haithem Nagati. "Do Board Gender Quotas Benefit Minority Shareholders? An Illustration through Related-Party Transactions." British Journal of Management, 2021, 1-29.

Nekhili, M., Ammar Ali Gull, Tawhid Chtioui, and Ikram Radhouane. "Gender-diverse boards and audit fees: What difference does gender quota legislation make?" Journal of Business Finance and Accounting, 47(2), 2020, 52-99.

Nguyen, P. "Board gender diversity and cost of equity." Applied Economics Letters, 27(18), 2020, 1522-1526.

Niederle, M. "A gender agenda: a progress report on competitiveness." American Economic Review, 107(5), 2017, 115-119.

Niessen-Ruenzi, A., and Stefan Ruenzi. "Sex matters: Gender bias in the mutual fund industry." Management Science, 65(7), 2019, 3001-3025.

Piscopo, J. M., and Susan Clark Muntean. "Corporate quotas and symbolic politics in advanced democracies." Journal of Women, Politics & Policy, 39(3), 2018, 285-309.

Pucheta-Martinez, M. and Inmaculada Bel-Oms. "The Board of Directors and Dividend Policy: The Effect of Gender Diversity." Industrial and Corporate Change, 25(3), 2016, 523-547.

Rhode, D. L. and Amanda K. Packel. "Diversity on Corporate Boards: How Much Difference Does Difference make?" Delaware Journal of Corporate Law, 39(2), 2014, 377-425.

Ribeiro, S. P., Stefano Menghinello, and Koen De Backer. "The OECD ORBIS Database: Responding to the Need for Firm-Level Micro-Data in the OECD." OECD Statistics Working Paper No. 2010/1, 2010.

Sabatier, M. "A women's boom in the boardroom: effects on performance?" Applied Economics, 47(26), 2015, 2717-2727.

Stroup, C. "International deal experience and cross-border acquisitions." Economic Inquiry, 55(1), 2017, 73-97.

UNCTAD (2021) World Investment Report. Investing in Sustainable Recovery.

Zenou, E., Isabelle Allemand, and Bénédicte Brullebaut "Gender Diversity on French Boards: Example of a Success from a Hard Law.", in Gender diversity in the boardroom, Volume 1:

The Use of Different Quota Regulations, edited by Cathrine Seierstad, Patricia Gabaldon, and Heike Mensi-Klarbach. Cham: Palgrave Macmillan, 2017, 75-101.