

Can Transparency Improve Board Diversity?

Evidence from the Non-Financial Reporting Directive

Tijmen Tuinsma

Introduction

Methodology

Results

Discussion

Where Was Lehman Board?

Firm's External Directors Had Relied on Experiences
Of a Bygone Financial Era

By Dennis K. Berman

Sept. 18, 2008 12:01 am ET

Nine of them are retired. Four are over 75 years old. One is a theater producer, another a former Navy admiral. Only two have direct experience in the financial-services industry.

Meet the Lehman Brothers Holdings external board directors, a group of 10 people who, perhaps unknowingly, carried the health of the world's financial system on their shoulders the past 18 months.

(Berman, 2008)

Board of directors

Most **important long-term decision-making body** in a corporation (Ferreira, 2010)

Represents shareholders/investors, monitors and challenges executive management

- approve strategic/financial decisions
- hire/fire top executives

Board of directors

Most **important long-term decision-making body** in a corporation (Ferreira, 2010)

Represents shareholders/investors, monitors and challenges executive management

- approve strategic/financial decisions
- hire/fire top executives

Failure by boards of financial institutions seen as catalyst in the global financial crisis (Commission, 2010)

- lack of **diversity** singled out as contributing factor
- board diversity especially important in times of distress (Engelen et al., 2012)

Board diversity

Why board diversity?

- **business** case and **ethical** case

Board diversity

Why board diversity?

- **business** case and **ethical** case

Business case

- **double-edged sword**: opportunities and challenges
(Milliken and Martins, 1996)
- empirical results represent **ambiguity** (Pletzer et al., 2015; Ozgen, 2021; Webber and Donahue, 2001)
- better to discuss potential societal benefits **beyond narrow firm profitability** (Ferreira, 2015)

Ethical case

- major advances in female education attainment, professional development, and political participation, **no significant increases in the representation of women in leadership positions** (Pande and Ford, 2012)
- women directors have better attendance records and are tougher monitors of CEOs (Adams and Ferreira, 2009; Ferreira, 2015)
- EU board gender composition [▶ graph](#) [▶ rate of progress](#) [▶ by country](#)

Board of directors

EU needed **legislation** that harmonizes and increases the level of **corporate transparency** with respect to corporate governance and CSR \Rightarrow NFR Directive

- amends Accounting Directive
- in force since 2017
- mandatory reporting CSR matters (large & public-interest, \geq 500 employees)
- mandatory reporting **board diversity policy** (large & listed)
 - recommended: quantitative targets and timeframes
 - comply or explain

Research question

Non-Financial Reporting (NFR) Directive: certain firms have to disclose their **diversity objectives** for the board of directors

Research question

Non-Financial Reporting (NFR) Directive: certain firms have to disclose their **diversity objectives** for the board of directors

Goal NFR Directive

“**Inform the market** of corporate governance practices and thus put **indirect pressure** on undertakings to have more diversified boards” (European Commission, 2014)

Research question

Non-Financial Reporting (NFR) Directive: certain firms have to disclose their **diversity objectives** for the board of directors

Goal NFR Directive

“**Inform the market** of corporate governance practices and thus put **indirect pressure** on undertakings to have more diversified boards” (European Commission, 2014)

Research question

Does the NFR Directive affect the board diversity of firms with a reporting obligation?

Inform the market, indirect pressure from shareholders

- compliance, **informative** to investors (Healy and Palepu, 2001; Manes-Rossi et al., 2018; Ottenstein et al., 2022; Singhvi and Desai, 1971)
- affects firm **behavior** (Arena et al., 2015; De Simone and Olbert, 2021; Dyreng et al., 2016; Gao et al., 2016; Jackson et al., 2020; Joshi, 2020)

Corporate disclosure

Inform the market, indirect pressure from shareholders

- compliance, **informative** to investors (Healy and Palepu, 2001; Manes-Rossi et al., 2018; Ottenstein et al., 2022; Singhvi and Desai, 1971)
- affects firm **behavior** (Arena et al., 2015; De Simone and Olbert, 2021; Dyreng et al., 2016; Gao et al., 2016; Jackson et al., 2020; Joshi, 2020)

Transparency vs. **quotas**: depends on enforcement (Pande and Ford, 2012)

- Norway: full compliance (Storvik, 2011)
- Spain: 5% compliance (Mateos de Cabo et al., 2019)

Contribution

First to study **board diversity effects** of the NFR Directive, one of the first to combine Orbis & BoardEx

- Poland: environmental, social score ↑, governance score = (Aluchna et al., 2022)
- financial outcomes: profitability ↓ (Cupertino et al., 2021)

Contribution

First to study **board diversity effects** of the NFR Directive, one of the first to combine Orbis & BoardEx

- Poland: environmental, social score ↑, governance score = (Aluchna et al., 2022)
- financial outcomes: profitability ↓ (Cupertino et al., 2021)

Driving factors board diversity least studied, especially the role of political institutions (Kent Baker et al., 2020; Terjesen et al., 2015)

- no differences between countries with reporting requirements and countries without regulation (Sojo et al., 2016)

Introduction

Methodology

Results

Discussion

Data

Orbis (Bureau van Dijk)

- firm financials
- listed status
- industry classification (2-digit)

BoardEx

- board composition: **gender, age, nationality**, number of directors

21,747 firm-year observations, EU, 2010-2021 [▶ descriptives](#)

- diversity: \geq **3 board members**
- **listed** companies (3,491 companies)

Identification strategy

Treatment group: **large** & listed firms have reporting obligation

- ≥ 20 million **assets**
 - ≥ 40 million **revenue**
 - ≥ 250 **employees**
- } 2 out of 3 in two consecutive years

Identification strategy

Treatment group: **large** & listed firms have reporting obligation

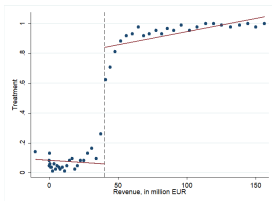
- ≥ 20 million **assets**
 - ≥ 40 million **revenue**
 - ≥ 250 **employees**
- } 2 out of 3 in two consecutive years

⇒ **fuzzy regression discontinuity** (RD) with assets, revenue, or employees as running variable/instrument (Imbens, 2017)

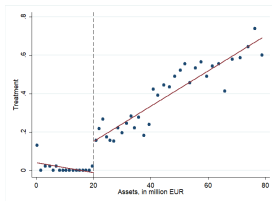
- fuzzy RD: running variable as instrument for treatment probability (Hahn et al., 2001)

Treatment probability

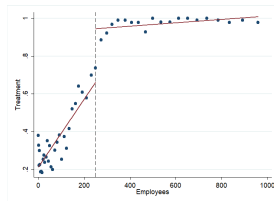
Revenue



Assets

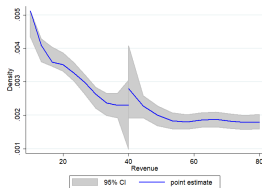


Employees

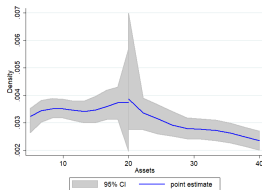


Treatment manipulation tests (McCrary, 2008)

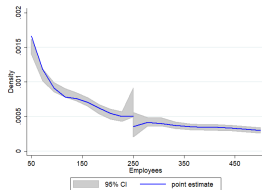
Revenue



Assets



Employees



Fuzzy RD specification

- data-driven **bandwidth selection** procedure (mse-optimal)
 - bias-corrected point estimates (Calonico et al., 2015; Cattaneo et al., 2019)
- local linear polynomial
- triangular kernel
- cluster standard errors at firm level
- FE (year, country, industry) and control variables (board size)

Introduction

Methodology

Results

Discussion

First stage

Variable	(1) Treatment	(2) Treatment	(3) Treatment	(4) Treatment	(5) Treatment	(6) Treatment
Revenue	0.647*** (0.0316)	0.610*** (0.0354)				
Assets			0.224*** (0.0277)	0.255*** (0.0381)		
Employees					0.0953* (0.0557)	0.161*** (0.0537)
Industry FE	No	Yes	No	Yes	No	Yes
Country FE	No	Yes	No	Yes	No	Yes
Year FE	No	Yes	No	Yes	No	Yes
Board size	No	Yes	No	Yes	No	Yes
Bandwidth	206.4	333.9	264.0	306.4	710.4	941.4
Observations	5,074	4,465	4,376	3,544	4,590	3,638

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Fuzzy RD (gender) ▶ first stage

Variable	(1) GenderRatio	(2) GenderRatio	(3) GenderRatio	(4) GenderRatio	(5) GenderRatio
Fuzzy RD instrument	Revenue	Revenue	Revenue	Revenue	Revenue
NFR	-0.0331 (0.0288)	-0.0347 (0.0286)	-0.0363 (0.0287)	-0.00754 (0.0229)	-0.0253 (0.0251)
Industry FE	no	no	no	no	yes
Country FE	no	no	no	yes	yes
Year FE	no	no	yes	yes	yes
Board size	no	yes	yes	yes	yes
Bandwidth	206.4	206.4	206.4	206.4	206.4
Observations	5,074	5,074	5,074	5,074	3,888

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Fuzzy RD (at least one woman) ▶ first stage

Variable	(1) WomanOnBoard Revenue	(2) WomanOnBoard Revenue	(3) WomanOnBoard Revenue	(4) WomanOnBoard Revenue	(5) WomanOnBoard Revenue
Fuzzy RD instrument					
NFR	-0.0426 (0.0727)	-0.0491 (0.0700)	-0.0531 (0.0700)	-0.0181 (0.0609)	-0.0582 (0.0682)
Industry FE	no	no	no	no	yes
Country FE	no	no	no	yes	yes
Year FE	no	no	yes	yes	yes
Covariates	no	yes	yes	yes	yes
Bandwidth	179.3	179.3	179.3	179.3	179.3
Observations	4,829	4,829	4,829	4,829	3,692

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Fuzzy RD (age) ▶ first stage

Variable	(1) STDEVAge	(2) STDEVAge	(3) STDEVAge	(4) STDEVAge	(5) STDEVAge
Fuzzy RD instrument	Revenue	Revenue	Revenue	Revenue	Revenue
NFR	-0.374 (0.620)	-0.429 (0.606)	-0.403 (0.605)	-0.412 (0.583)	-0.956 (0.650)
Industry FE	no	no	no	no	yes
Country FE	no	no	no	yes	yes
Year FE	no	no	yes	yes	yes
Covariates	no	yes	yes	yes	yes
Bandwidth	169.8	169.8	169.8	169.8	169.8
Observations	4,657	4,657	4,657	4,657	3,542

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Fuzzy RD (nationality) ▶ first stage

Variable	(1) NationalityMix Revenue	(2) NationalityMix Revenue	(3) NationalityMix Revenue	(4) NationalityMix Revenue	(5) NationalityMix Revenue
Fuzzy RD instrument					
NFR	0.0170 (0.0486)	0.0155 (0.0499)	0.0194 (0.0495)	0.00435 (0.0468)	-0.0113 (0.0507)
Industry FE	no	no	no	no	yes
Country FE	no	no	no	yes	yes
Year FE	no	no	yes	yes	yes
Covariates	no	yes	yes	yes	yes
Bandwidth	136.8	136.8	136.8	136.8	136.8
Observations	3,848	3,848	3,848	3,848	2,894

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Additional results

Robustness tests

- alternative **bandwidths**: 50%, 100% of threshold ▶ first stage
▶ fuzzy RD
- other running variables ▶ first stage ▶ fuzzy RD
- donut
- ≥ 5 board members \Rightarrow no significant effects

Alternatively timed effects

- **announcement** period: 2014-2016 ▶ first stage ▶ fuzzy RD
- **pre-announcement** period (falsification) ▶ first stage ▶ fuzzy RD
- if changes take time to take effect: from **2020 onwards** \Rightarrow no significant results

Preliminary

- DiD, event study \Rightarrow no significant results
- **Appointment-level** \Rightarrow no significant gender effects

Introduction

Methodology

Results

Discussion

Conclusion

Mandatory reporting of board diversity policies does **not** have a direct effect on board diversity

- December 2022: EU agreement reached on **mandatory gender balance goals** (40%) for large & listed firms from 2026

Thank you for your attention!

Questions, feedback, suggestions?

✉ tijmen.tuinsma@kuleuven.be

🐦 [@ttuinsma](https://twitter.com/ttuinsma)

in [Tijmen Tuinsma](#)

DemoTrans
DEMOCRACY
TRANSPARENCY

- Adams, R. B. and Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. Journal of Financial Economics, 94(2):291–309.
- Aluchna, M., Roszkowska-Menkes, M., and Kamiński, B. (2022). From talk to action: the effects of the non-financial reporting directive on ESG performance. Meditari Accountancy Research, 31(7):1–25. Publisher: Emerald Publishing Limited.
- Arena, C., Bozzolan, S., and Michelon, G. (2015). Environmental Reporting: Transparency to Stakeholders or Stakeholder Manipulation? An Analysis of Disclosure Tone and the Role of the Board of Directors. Corporate Social Responsibility and Environmental Management, 22(6):346–361.
_eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/csr.1350>.
- Berman, D. K. (2008). Where Was Lehman's Board? Wall Street Journal.
- Calonico, S., Cattaneo, D., M., and Titiunik, R. (2015). rdrobust: An R Package for Robust Nonparametric Inference in Regression-Discontinuity Designs. The R Journal, 7(1):38.

References II

- Cattaneo, M. D., Idrobo, N., and Titiunik, R. (2019). A Practical Introduction to Regression Discontinuity Designs: Foundations. Elements in Quantitative and Computational Methods for the Social Sciences. ISBN: 9781108684606 9781108710206 Publisher: Cambridge University Press.
- Commission, E. (2010). /* COM/2010/0284 final */, Green Paper - Corporate governance in financial institutions and remuneration policies {COM(2010) 285 final} {COM(2010) 286 final} {SEC(2010) 669}, CELEX1. Publisher: Publications Office of the European Union.
- Cupertino, S., Vitale, G., and Ruggiero, P. (2021). Performance and (non) mandatory disclosure: the moderating role of the Directive 2014/95/EU. Journal of Applied Accounting Research, 23(1):163–183. Publisher: Emerald Publishing Limited.
- De Simone, L. and Olbert, M. (2021). Real Effects of Private Country-by-Country Disclosure. The Accounting Review, 97(6):201–232.
- Dyregang, S. D., Hoopes, J. L., and Wilde, J. H. (2016). Public Pressure and Corporate Tax Behavior. Journal of Accounting Research, 54(1):147–186.
_eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/1475-679X.12101>.

References III

- Engelen, P.-J., Laan, G., and van den Berg, A. (2012). Board Diversity as a Shield During the Financial Crisis. In Corporate Governance: Recent Developments and New Trends, pages 259–286. Journal Abbreviation: Corporate Governance: Recent Developments and New Trends.
- European Commission (2014). Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups. Official Journal of the European Union, L 330/1.
- Ferreira, D. (2010). Board Diversity. In Corporate Governance, pages 225–242. John Wiley & Sons, Ltd. Section: 12 .eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/9781118258439.ch12>.
- Ferreira, D. (2015). Board Diversity: Should We Trust Research to Inform Policy? Corporate Governance: An International Review, 23(2):108–111. .eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/corg.12092>.

References IV

- Gao, F., Dong, Y., Ni, C., and Fu, R. (2016). Determinants and Economic Consequences of Non-financial Disclosure Quality. European Accounting Review, 25(2):287–317. Publisher: Routledge _eprint: <https://doi.org/10.1080/09638180.2015.1013049>.
- Hahn, J., Todd, P., and Van der Klaauw, W. (2001). Identification and Estimation of Treatment Effects with a Regression-Discontinuity Design. Econometrica, 69(1):201–209. Publisher: [Wiley, Econometric Society].
- Healy, P. M. and Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. Journal of Accounting and Economics, 31(1):405–440.
- Imbens, G. W. (2017). Regression Discontinuity Designs in the Econometrics Literature. Observational Studies, 3(2):147–155. Publisher: University of Pennsylvania Press.
- Jackson, G., Bartosch, J., Avetisyan, E., Kinderman, D., and Knudsen, J. S. (2020). Mandatory Non-financial Disclosure and Its Influence on CSR: An International Comparison. Journal of Business Ethics, 162(2):323–342.

- Joshi, P. (2020). Does Private Country-by-Country Reporting Deter Tax Avoidance and Income Shifting? Evidence from BEPS Action Item 13. Journal of Accounting Research, 58(2):333–381. eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/1475-679X.12304>.
- Kent Baker, H., Pandey, N., Kumar, S., and Haldar, A. (2020). A bibliometric analysis of board diversity: Current status, development, and future research directions. Journal of Business Research, 108:232–246.
- Manes-Rossi, F., Tiron-Tudor, A., Nicolò, G., and Zanellato, G. (2018). Ensuring More Sustainable Reporting in Europe Using Non-Financial Disclosure—De Facto and De Jure Evidence. Sustainability, 10(4):1162. Number: 4 Publisher: Multidisciplinary Digital Publishing Institute.
- Mateos de Cabo, R., Terjesen, S., Escot, L., and Gimeno, R. (2019). Do ‘soft law’ board gender quotas work? Evidence from a natural experiment. European Management Journal, 37(5):611–624.
- McCrary, J. (2008). Manipulation of the running variable in the regression discontinuity design: A density test. Journal of Econometrics, 142(2):698–714.

References VI

- Milliken, F. J. and Martins, L. L. (1996). Searching for Common Threads: Understanding the Multiple Effects of Diversity in Organizational Groups. The Academy of Management Review, 21(2):402–433. Publisher: Academy of Management.
- Ottenstein, P., Link to external site, t. l. w. o. i. a. n. w., Erben, S., Link to external site, t. l. w. o. i. a. n. w., Jost, S., Link to external site, t. l. w. o. i. a. n. w., Weuster, C. W., Zülch, H., and Link to external site, t. l. w. o. i. a. n. w. (2022). From voluntarism to regulation: effects of Directive 2014/95/EU on sustainability reporting in the EU. Journal of Applied Accounting Research, 23(1):55–98. Num Pages: 44 Place: Leicester, United Kingdom Publisher: Emerald Group Publishing Limited.
- Ozgen, C. (2021). The economics of diversity: Innovation, productivity and the labour market. Journal of Economic Surveys, 35(4):1168–1216.
_eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/joes.12433>.
- Pande, R. and Ford, D. (2012). Gender Quotas and Female Leadership. Technical report, World Bank, Washington, DC. Accepted: 2012-06-26T15:38:52Z.

References VII

- Pletzer, J. L., Nikolova, R., Kedzior, K. K., and Voelpel, S. C. (2015). Does Gender Matter? Female Representation on Corporate Boards and Firm Financial Performance - A Meta-Analysis. PLOS ONE, 10(6):e0130005. Publisher: Public Library of Science.
- Singhvi, S. S. and Desai, H. B. (1971). An Empirical Analysis of the Quality of Corporate Financial Disclosure. The Accounting Review, 46(1):129–138. Publisher: American Accounting Association.
- Sojo, V. E., Wood, R. E., Wood, S. A., and Wheeler, M. A. (2016). Reporting requirements, targets, and quotas for women in leadership. The Leadership Quarterly, 27(3):519–536.
- Storvik, A. (2011). Women on Boards – Experience from the Norwegian Quota Reform. CESifo DICE Report, 9:34–41.
- Terjesen, S., Aguilera, R. V., and Lorenz, R. (2015). Legislating a Woman's Seat on the Board: Institutional Factors Driving Gender Quotas for Boards of Directors. Journal of Business Ethics, 128(2):233–251.
- Webber, S. S. and Donahue, L. M. (2001). Impact of highly and less job-related diversity on work group cohesion and performance: a meta-analysis. Journal of Management, 27(2):141–162. Publisher: SAGE Publications Inc.

Descriptive statistics [▶ back](#)

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
GenderRatio	21,744	0.197	0.160	0	0.800
STDEVAge	21,596	7.918	3.104	0	25.50
NationalityMix	20,344	0.259	0.271	0	0.900
NumberDirectors	21,747	8.702	4.091	3	30
cons_revenue	20,512	3,583	14,253	-422	363,375
cons_assets	21,234	6,262	25,621	0	680,036
cons_employees	16,876	11,942	41,428	0	692,830
uncons_revenue	15,384	977.2	5,475	-767.2	113,863
uncons_assets	15,783	4,770	55,166	0	6.527e+06
uncons_employees	13,532	2,170	10,458	0	190,087
large	21,747	0.819	0.385	0	1
post	21,747	0.532	0.499	0	1
large_post	21,747	0.417	0.493	0	1

Descriptive statistics (post-implementation) [▶ back](#)

	N	Mean	SD	Min	Max
<i>Panel A. Post-implementation, control group</i>					
GenderRatio	2,502	0.211	0.181	0	0.800
STDEVAge	2,417	7.235	3.819	0	19.70
NationalityMix	2,094	0.219	0.266	0	0.800
NumberDirectors	2,505	5.940	2.205	3	21
cons_revenue	2,214	19.66	73.95	-16.91	2,780
cons_assets	2,290	145.2	942.1	0	31,696
cons_employees	1,896	95.82	356.2	0	11,532
uncons_revenue	1,955	9.085	32.88	-767.2	1,042
uncons_assets	1,980	138.4	719.8	0.00662	23,308
uncons_employees	1,718	42.33	52.11	0	775
<i>Panel B. Post-implementation, treatment group</i>					
GenderRatio	9,073	0.248	0.160	0	0.800
STDEVAge	9,030	7.849	3.070	0	25.50
NationalityMix	8,535	0.257	0.272	0	0.900
NumberDirectors	9,073	9.027	4.054	3	30
cons_revenue	8,683	3,916	14,769	-422	339,286
cons_assets	8,955	7,336	28,904	1.00e-06	680,036
cons_employees	7,299	13,362	45,200	0	692,830
uncons_revenue	6,533	1,031	5,510	-575.9	113,863
uncons_assets	6,759	5,935	81,891	0	6.527e+06
uncons_employees	5,830	2,370	10,636	0	190,087



Figure: Percentage of female board members in the EU28 for large & listed companies. Source: European Institute for Gender Equality (EIGE) database.

Board gender composition rate of progress [▶ back](#)

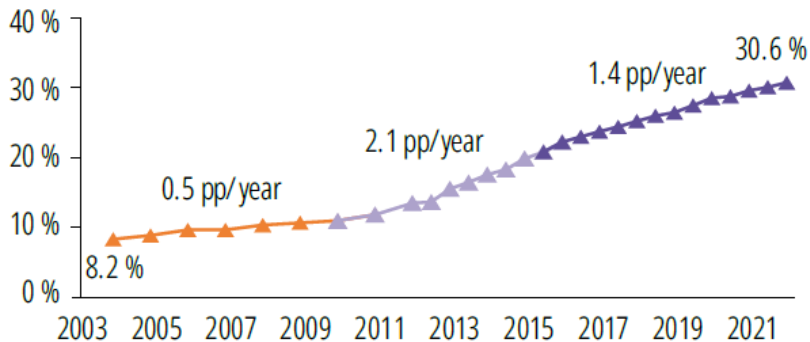


Figure: Percentage of female board members in the EU28 for large & listed companies. Source: EIGE (Statistical brief: gender balance in business and finance 2021).

Board gender composition by country [▶ back](#)

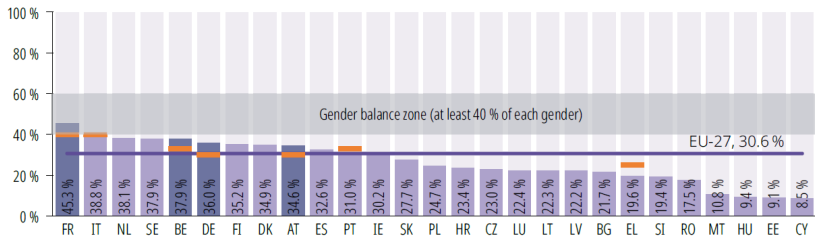


Figure: Percentage of female board members in the EU28 for large & listed companies. Source: EIGE (Statistical brief: gender balance in business and finance 2021).

First stage (gender) [▶ back](#)

Variable	(1) Treatment	(2) Treatment	(3) Treatment	(4) Treatment	(5) Treatment
Revenue	0.647*** (0.0316)	0.646*** (0.0316)	0.646*** (0.0315)	0.633*** (0.0310)	0.618*** (0.343)
Industry FE	no	no	no	no	yes
Country FE	no	no	no	yes	yes
Year FE	no	no	yes	yes	yes
Board size	no	yes	yes	yes	yes
Bandwidth	206.4	206.4	206.4	206.4	206.4
Observations	5,074	5,074	5,074	5,074	3,888

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

First stage (at least one woman) [▶ back](#)

Variable	(1) Treatment	(2) Treatment	(3) Treatment	(4) Treatment	(5) Treatment
Revenue	0.611*** (0.0336)	0.610*** (0.0336)	0.610*** (0.0336)	0.598*** (0.0329)	0.583*** (0.0362)
Industry FE	no	no	no	no	yes
Country FE	no	no	no	yes	yes
Year FE	no	no	yes	yes	yes
Board size	no	yes	yes	yes	yes
Bandwidth	179.3	179.3	179.3	179.3	179.3
Observations	4,829	4,829	4,829	4,829	4,829

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Variable	(1) Treatment	(2) Treatment	(3) Treatment	(4) Treatment	(5) Treatment
Revenue	0.601*** (0.0349)	0.601*** (0.0349)	0.601*** (0.0348)	0.588*** (0.0341)	0.578*** (0.0385)
Industry FE	no	no	no	no	yes
Country FE	no	no	no	yes	yes
Year FE	no	no	yes	yes	yes
Board size	no	yes	yes	yes	yes
Bandwidth	169.8	169.8	169.8	169.8	169.8
Observations	4,657	4,657	4,657	4,657	3,542

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

First stage (nationality) [▶ back](#)

Variable	(1) Treatment	(2) Treatment	(3) Treatment	(4) Treatment	(5) Treatment
Revenue	0.504*** (0.0447)	0.503*** (0.0447)	0.504*** (0.0480)	0.494*** (0.0441)	0.477*** (0.0491)
Industry FE	no	no	no	no	yes
Country FE	no	no	no	yes	yes
Year FE	no	no	yes	yes	yes
Board size	no	yes	yes	yes	yes
Bandwidth	136.8	136.8	136.8	136.8	136.8
Observations	3,848	3,848	3,848	3,848	2,894

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

First stage alternative bandwidths [▶ back](#)

Variable	(1) Treatment	(2) Treatment	(3) Treatment	(4) Treatment	(5) Treatment	(6) Treatment	(7) Treatment	(8) Treatment
Revenue	0.210** (0.0951)	0.210** (0.0951)	0.251*** (0.0954)	0.179* (0.102)	0.260*** (0.0707)	0.260*** (0.0707)	0.271*** (0.0717)	0.246*** (0.0767)
Industry FE	yes	yes	yes	yes	yes	yes	yes	yes
Country FE	yes	yes	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes	yes	yes
Board size	yes	yes	yes	yes	yes	yes	yes	yes
Bandwidth	20	20	20	20	40	40	40	40
Observations	830	830	812	700	2,272	2,272	2,195	1,890

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Alternative bandwidths [▶ back](#)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fuzzy RD instrument	GenderRatio Revenue	WomanOnBoard Revenue	STDEVAge Revenue	NationalityMix Revenue	GenderRatio Revenue	WomanOnBoard Revenue	STDEVAge Revenue	NationalityMix Revenue
NFR	0.0927 (0.106)	0.319 (0.280)	-3.920 (2.568)	-0.280 (0.204)	0.0110 (0.0588)	0.103 (0.146)	-3.530** (1.377)	-0.105 (0.0982)
Industry FE	yes	yes	yes	yes	yes	yes	yes	yes
Country FE	yes	yes	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes	yes	yes
Board size	yes	yes	yes	yes	yes	yes	yes	yes
Bandwidth	20	20	20	20	40	40	40	40
Observations	830	830	812	700	2,272	2,272	2,195	1,890

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Variable	(1) Treatment	(2) Treatment	(3) Treatment	(4) Treatment
Revenue	0.602*** (0.0639)	0.603*** (0.0638)	0.618*** (0.0621)	0.585*** (0.0655)
Industry FE	yes	yes	yes	yes
Country FE	yes	yes	yes	yes
Year FE	yes	yes	yes	yes
Covariates	yes	yes	yes	yes
Bandwidth	303.7	291.6	280.2	375.0
Observations	1865	1843	1807	1819

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Variable	(1) GenderRatio	(2) WomanOnBoard	(3) STDEVAge	(4) NationalityMix
Fuzzy RD instrument	Revenue	Revenue	Revenue	Revenue
NFR	0.0364 (0.0320)	0.139 (0.0968)	1.311* (0.766)	0.0459 (0.0623)
Industry FE	yes	yes	yes	yes
Country FE	yes	yes	yes	yes
Year FE	yes	yes	yes	yes
Covariates	yes	yes	yes	yes
Bandwidth	303.7	291.6	280.2	375.0
Observations	1865	1843	1807	1819

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

First stage pre-implementation [▶ back](#)

Variable	(1) Treatment	(2) Treatment	(3) Treatment	(4) Treatment
Revenue	0.633*** (0.0601)	0.630*** (0.0607)	0.598*** (0.0633)	0.627*** (0.0612)
Industry FE	yes	yes	yes	yes
Country FE	yes	yes	yes	yes
Year FE	yes	yes	yes	yes
Covariates	yes	yes	yes	yes
Bandwidth	424.9	484.0	378.3	339.8
Observations	1794	1866	1731	1558

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Pre-implementation period (before 2014) [▶ back](#)

Variable	(1) GenderRatio	(2) WomanOnBoard	(3) STDEVAge	(4) NationalityMix
Fuzzy RD instrument	Revenue	Revenue	Revenue	Revenue
NFR	0.0435* (0.0235)	0.203** (0.0863)	0.120 (0.726)	-0.0187 (0.0679)
Industry FE	yes	yes	yes	yes
Country FE	yes	yes	yes	yes
Year FE	yes	yes	yes	yes
Covariates	yes	yes	yes	yes
Bandwidth	424.9	484.0	378.3	339.8
Observations	1794	1866	1731	1558

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

First stage other running variables [▶ back](#)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variable	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment
Outcome	GenderRatio	WomanOnBoard	STDEVAge	NationalityMix	GenderRatio	WomanOnBoard	STDEVAge	NationalityMix
Assets	0.255*** (0.0381)	0.261*** (0.0379)	0.268*** (0.0395)	0.288*** (0.0419)				
Employees					0.161*** (0.0537)	0.170*** (0.0526)	0.158*** (0.0533)	0.155** (0.0546)
Industry FE	yes	yes	yes	yes	yes	yes	yes	yes
Country FE	yes	yes	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes	yes	yes
Board size	yes	yes	yes	yes	yes	yes	yes	yes
Bandwidth	306.4	310.1	366.5	389.5	941.4	863.5	954.0	1087
Observations	3544	3562	3742	3366	3638	3555	3567	3305

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Other running variables [▶ back](#)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fuzzy RD instrument	GenderRatio Assets	WomanOnBoard Assets	STDEVAge Assets	NationalityMix Assets	GenderRatio Employees	WomanOnBoard Employees	STDEVAge Employees	NationalityMix Employees
NFR	0.115 (0.0768)	0.409* (0.210)	1.954 (1.635)	-0.104 (0.104)	-0.0644 (0.0770)	-0.0511 (0.218)	0.653 (2.115)	0.157 (0.129)
Industry FE	yes	yes	yes	yes	yes	yes	yes	yes
Country FE	yes	yes	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes	yes	yes
Covariates	yes	yes	yes	yes	yes	yes	yes	yes
Bandwidth	306.4	310.1	366.5	389.5	941.4	863.5	954.0	1087
Observations	3544	3562	3742	3366	3638	3555	3567	3305

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1