Changing the Board Game:
Horizontal Spillovers of Gender Quotas

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Mend the Gap in Economic Opportunities in Europe and Central Asia - EIEF May 15-16 2025

Mandatory gender quotas in boards of listed or very large companies

- Norway (2003)
- Iceland (2010), **Italy (2011)**, France (2011), Belgium (2011), Germany (2015), Austria (2017), Portugal (2018), Greece (2021), Netherlands (2021), Spain (2023)
- **EU Directive (2022)**

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- **EU Directive (2022)**

- Israel (2011), India (2013), Korea (2021), Malaysia (2021)
- **California (2018-2022)**

Criticisms (and Counterarguments)

- Equal Opportunities or Reverse Discrimination? x
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- **Positive Externalities?**
  - **Trickle-down** effects..
    - **Upward mobility** for other female employees in target-firms
    - **Role-model effect** on younger generations

"Enhancing women's participation in economic decision-making, on boards in particular, is expected to have a ***positive spill-over effect on women's employment*** *in the companies concerned and throughout the whole economy" (EU-DIRECTIVE 2022/2381)*

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"Overall, seven years after the board quota policy fully came into effect, we conclude that ***it had very little discernible impact on women in business****" (Bertrand et al., 2019)*

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- **Horizontal Spillovers?**

Why *horizontal* spillovers?

*"**Listed companies** have a particular economic importance, visibility and impact on the market as a whole. Such companies **set standards for the wider economy** and **their practices can be expected to be followed by other types of companies**" (EU-DIRECTIVE 2022/2381)*

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- **Board Overlaps** can signal the presence of interactions among firms
  - $\Rightarrow$**information exchange** across management teams (Cai and Sevilir, 2012)

In This Paper...

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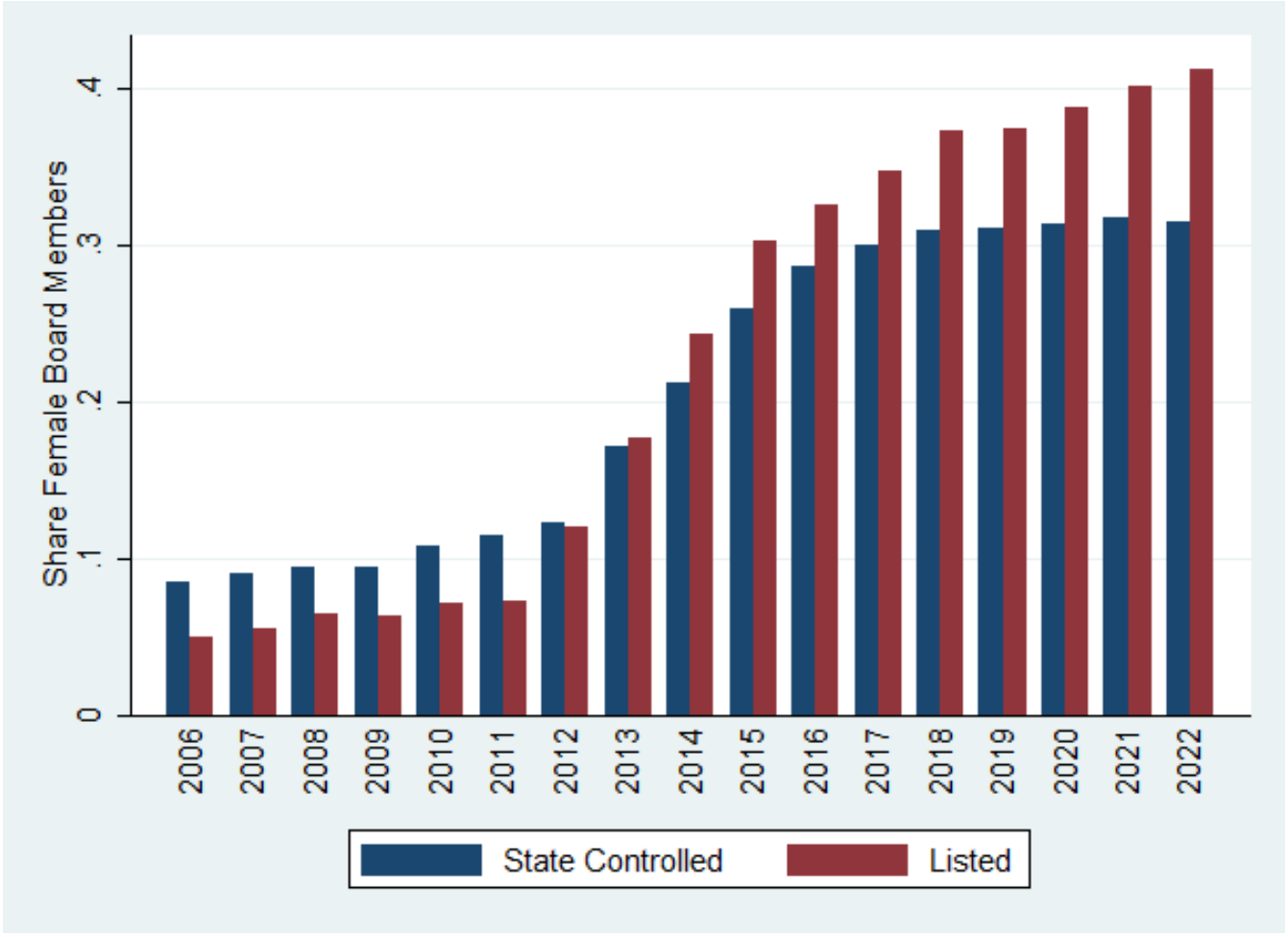
  - **Postive Spillovers**
  - *Spillover Effects* $\geq$ *Direct Effects*
- Mechanisms:
  - **Relationship Keeping** (peristent interactions)
  - Changes in **Search Technology** (info sharing)
  - No evidence of changes in *corporate culture*

Board Quotas: The Italian Case

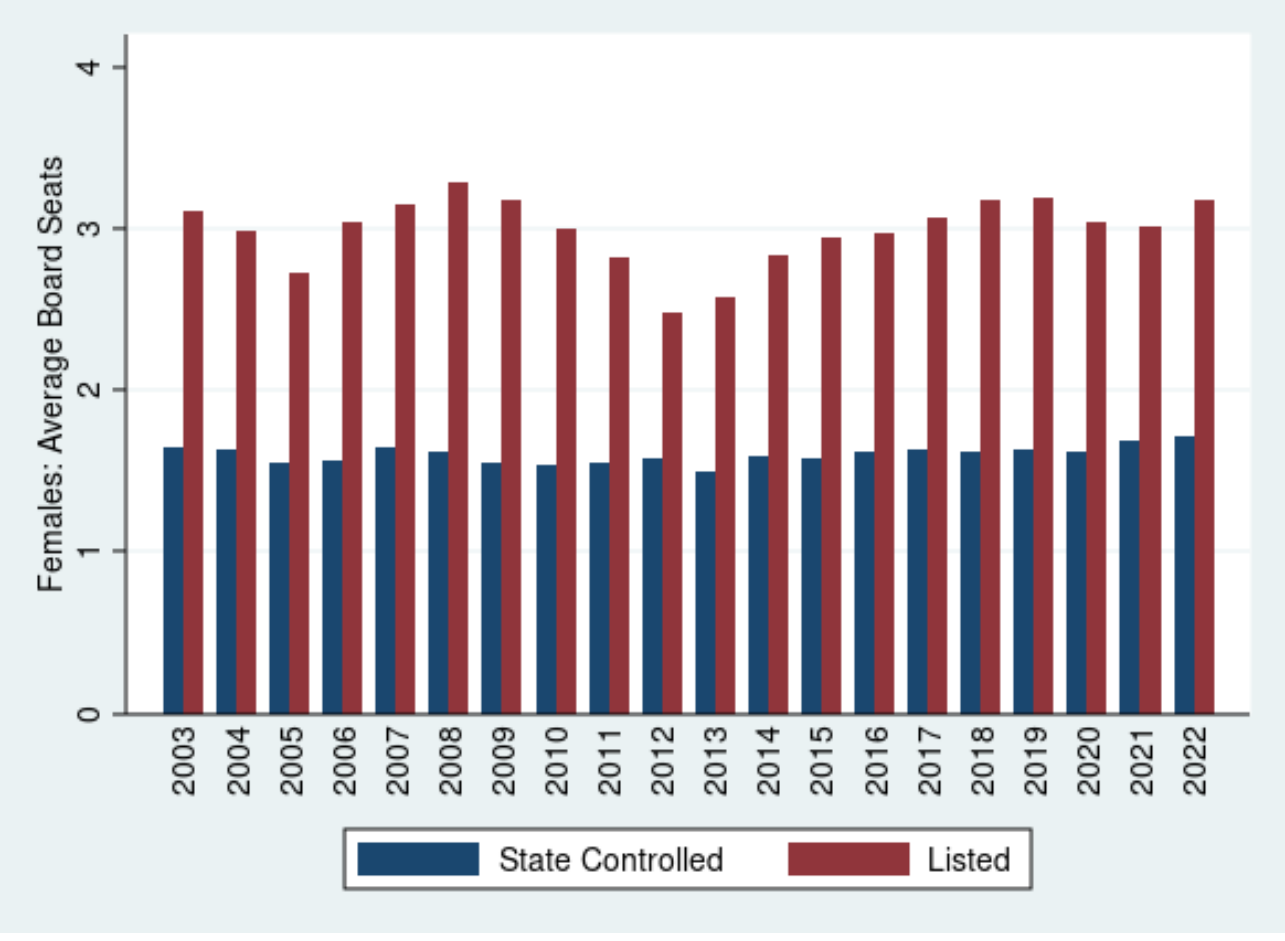
- Law passed in **2011** (effective mid 2012)
- Applies to **listed*** and **state-controlled** companies
  - First board renewal **20%**
  - Second - third renewal **1/3**
- Amendment in 2019 for listed companies: **40%** for 3 more periods
- Amendment in 2016 for state-controlled companies: 1/3 quota is **permanent**, but does not apply to the auditors

*on the main exchange (MTA)

Compliance in Target Firms



Do Female Directors Become “Busy”?



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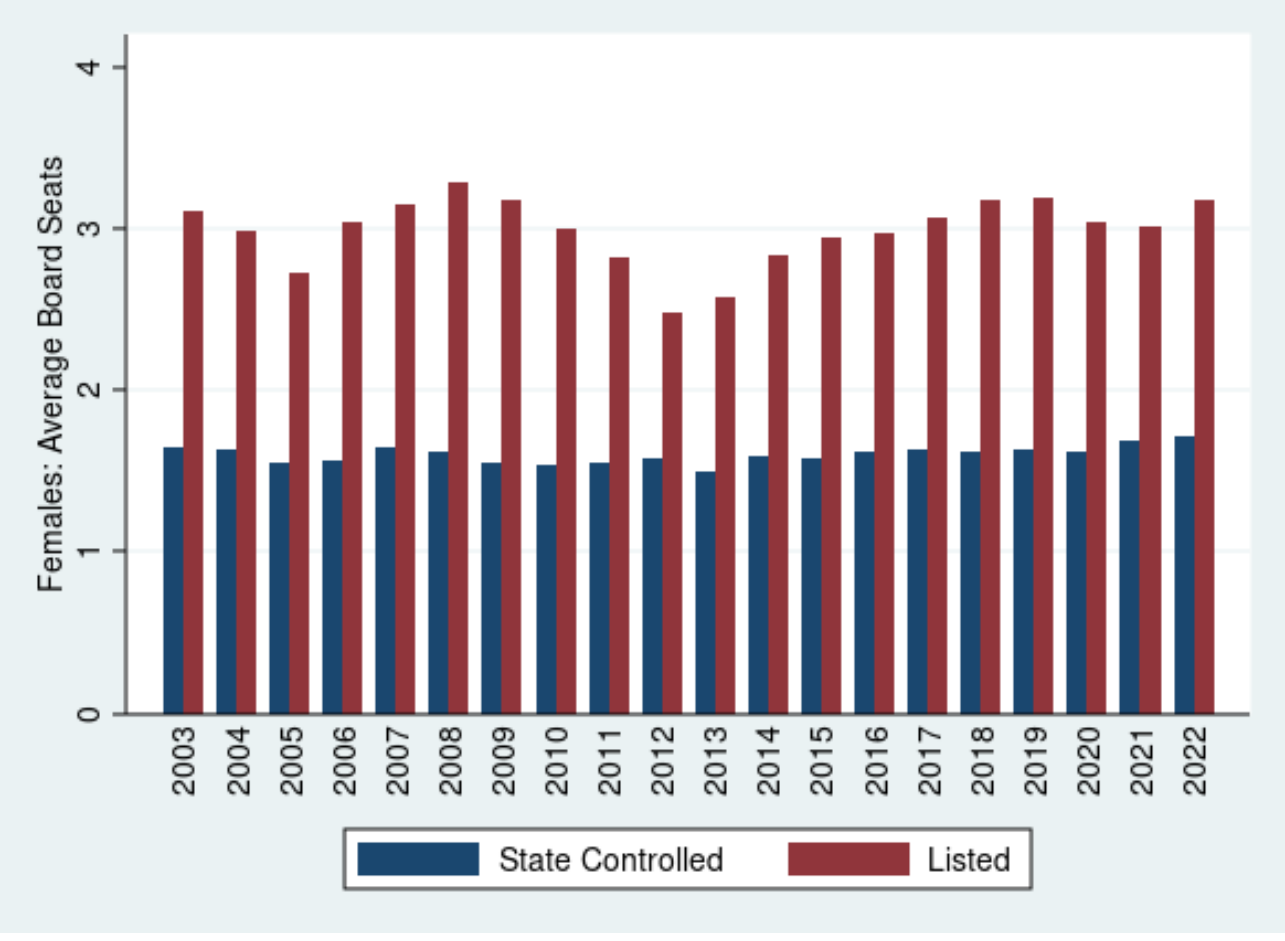

- The law forced larger female board representation in **target-firms** on the **extensive margin..**

Spillovers on Non-target Firms?

Core Sample ($\sim$ 26k firms per year, 2006-2022). *Source: Cerved* *(includes: financial statements, ownership, directors)*

- **Non-target Firms = Joint-Stock Companies (SpA)**
  - **Unlisted**
  - **Not State Controlled**
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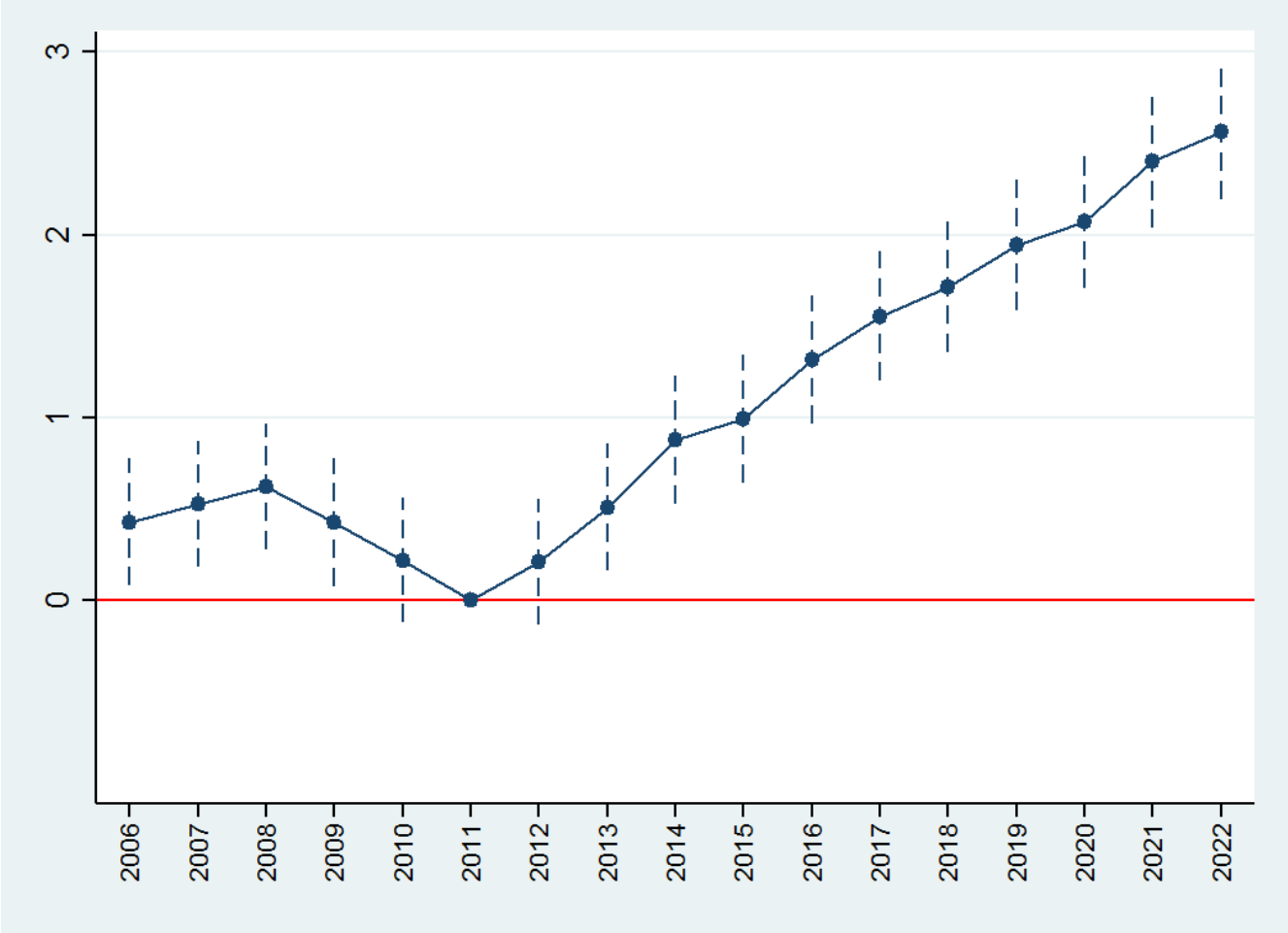
Connected$_i$ = 1 if **in any of the 3 years before the reform** firm *i* shared **at least 1 BM** with **target firms** (listed or state controlled)

- $\sim$ 33% of firms in the core sample

Main Specification: TWFE Diff-in-Diff

$$F_Share_{i,t} = \sum_{s \neq 2011} \beta_t 1_{\{s=t\}} Connected_i + \delta X_{i,t} + \alpha_i + \gamma_t + \varepsilon_{i,t}$$



Robustness: PS Matching

- Estimate $P\left(Connected_i | \bar{X}_{i,2009-2011}\right)$
- Use firms with $\hat{P} > x$ as controls; $x =$ median $\hat{P}$ of connected
- Estimate TWFE Diff-in-Diff model on matched controls + treated

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- **Within Connected Firms:** differential effects come from connections with **exposed target companies** ($<$ 20% share pre-reform)
  - Exposed target companies faced a much larger shortfall, that had to be addressed with more aggressive changes to their current recruiting practices

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- **Future listing**
- **Ownership links**
- **Proximity** to target companies
  - Large presence of target companies in *i*'s ***province***
  - Large presence of target companies in *i*'s ***province&industry***

Size of Spillover Effects

- **Direct Effects on Target Firms**
  - $\Delta WoB_T = \Delta Share * \overline{BoardSize_{2011}} * \#Boards_{2011}$
    - $\approx \mathbf{2,600}$
- **Spillover Effects on Connected Firms**
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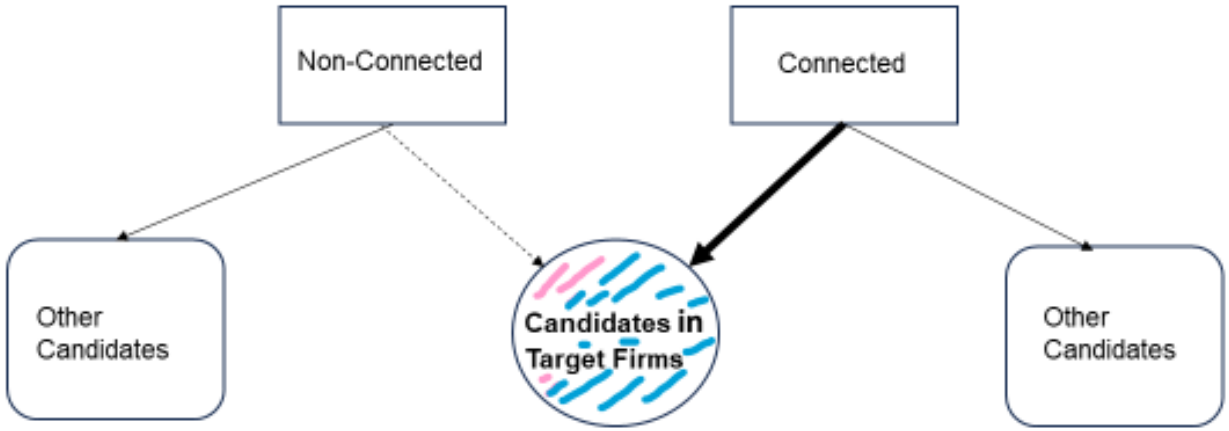
- ***..+ Second Order Effects?*** ≈ 600

Total Spillover Effects $\geq$ 98% Direct Effects

Mechanisms

Relationship Keeping



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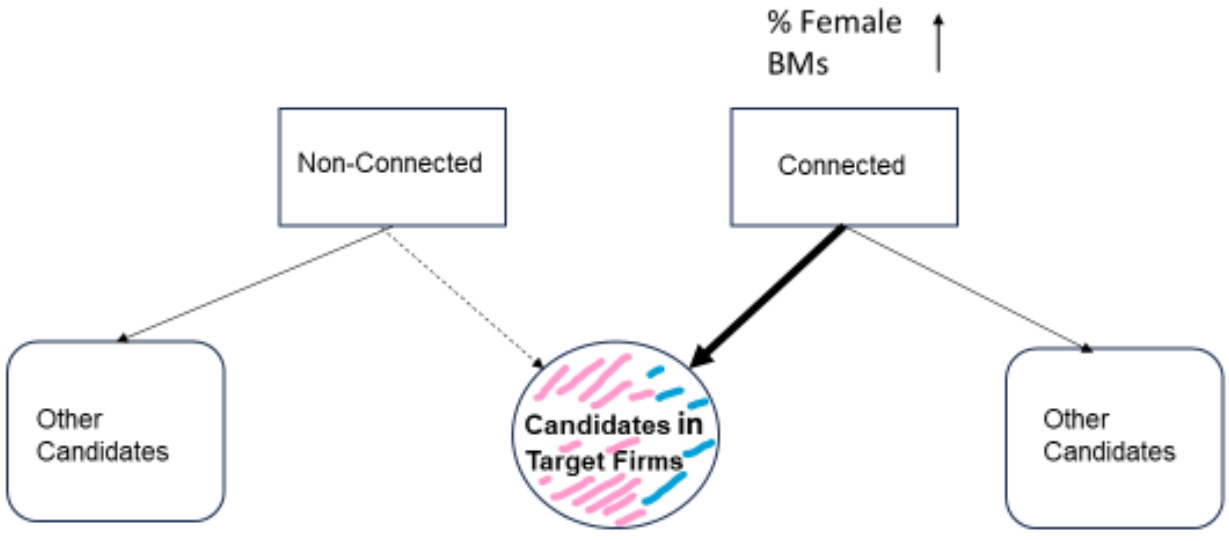

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- $\Delta P\left(F_j = 1 | InTarget_{j,t} = 1\right) = 0$
- **Pure supply-composition effect !**
  Conditional on hiring in-target candidates, no preferences for women..

Mechanisms: Search Technology

"[...] the imposition of quotas and goals has resulted not just in ***greater gender diversity****, but to* ***a more professional and formal approach to board selection****."*

("What Board Directors Really Think of Gender Quotas?" Wiersema and Mors, Harvard Business Review)

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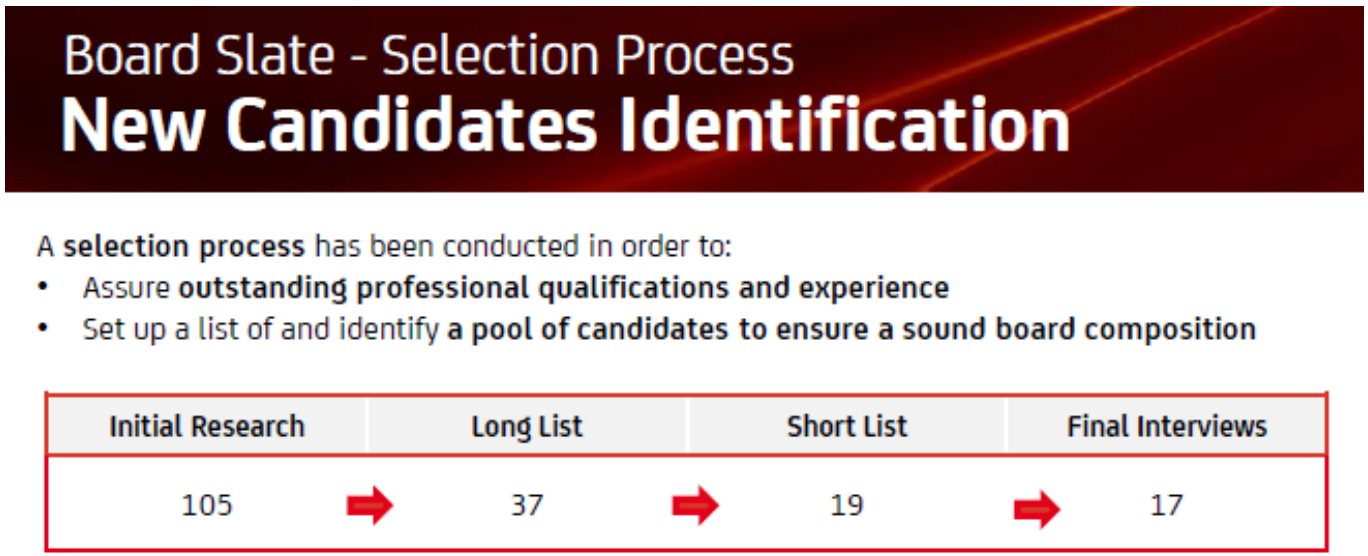

Source: Unicredit "Renewal of the Board of Directors" February 2024

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- **Outsider/Insider?**
- **Native?**
- **Experience?**
- **Contacts?**

Search Technology Spillovers

- **Female** recent hires in connected firms (out-of-target candidates)

	(1) Outsider	(2) Foreign	(3) Current App.	(4) First App.	(5) Contacts
Post X Connected	0.0295***	0.0064*	0.3323***	-0.0024	-0.1300***
	(0.0058)	(0.0034)	(0.0448)	(0.0048)	(0.0337)
Connected	0.0085*	-0.0009	-0.3927***	0.0007	-0.0650**
	(0.0048)	(0.0027)	(0.0355)	(0.0040)	(0.0270)
Post	0.0281***	0.0119***	0.0801***	-0.0228***	-0.0437***
	(0.0034)	(0.0019)	(0.0243)	(0.0028)	(0.0161)
Tenure	-0.0293***	-0.0072***	0.1530***	-0.2295***	2.1390***
	(0.0016)	(0.0010)	(0.0125)	(0.0015)	(0.0100)
Observations	115829	85161	85161	85161	71500
R-Squared	0.008	0.010	0.216	0.270	0.615
Mean Dep. Var.	0.74	0.06	2.98	0.16	4.57

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- **Male** recent hires in connected firms (out-of-target candidates)

	(1) Outsider	(2) Foreign	(3) Current App.	(4) First App.	(5) Contacts
Post X Connected	0.0104***	0.0203***	0.3019***	0.0103***	-0.0418***
	(0.0025)	(0.0018)	(0.0302)	(0.0019)	(0.0156)
Connected	0.0094***	-0.0125***	-0.4308***	-0.0121***	-0.1035***
	(0.0020)	(0.0014)	(0.0242)	(0.0015)	(0.0121)
Post	0.0208***	-0.0047***	0.0495***	-0.0229***	-0.0200**
	(0.0016)	(0.0011)	(0.0183)	(0.0012)	(0.0080)
Tenure	-0.0265***	-0.0101***	0.2326***	-0.1606***	2.4057***
	(0.0007)	(0.0005)	(0.0089)	(0.0006)	(0.0046)
Observations	557657	400216	400216	400216	356347
R-Squared	0.005	0.011	0.205	0.186	0.626
Mean Dep. Var.	0.72	0.08	4.29	0.11	4.72

To Conclude..

Spillovers of Quotas to non-target **connected** firms

- We find evidence for mechanisms based on
  - *Relationship Keeping*
  - *Changes in Search Technology*

$\Rightarrow$ Spillovers are due to **supply (composition of candidates pool)** rather than **demand (changes in preferences, culture, etc)**

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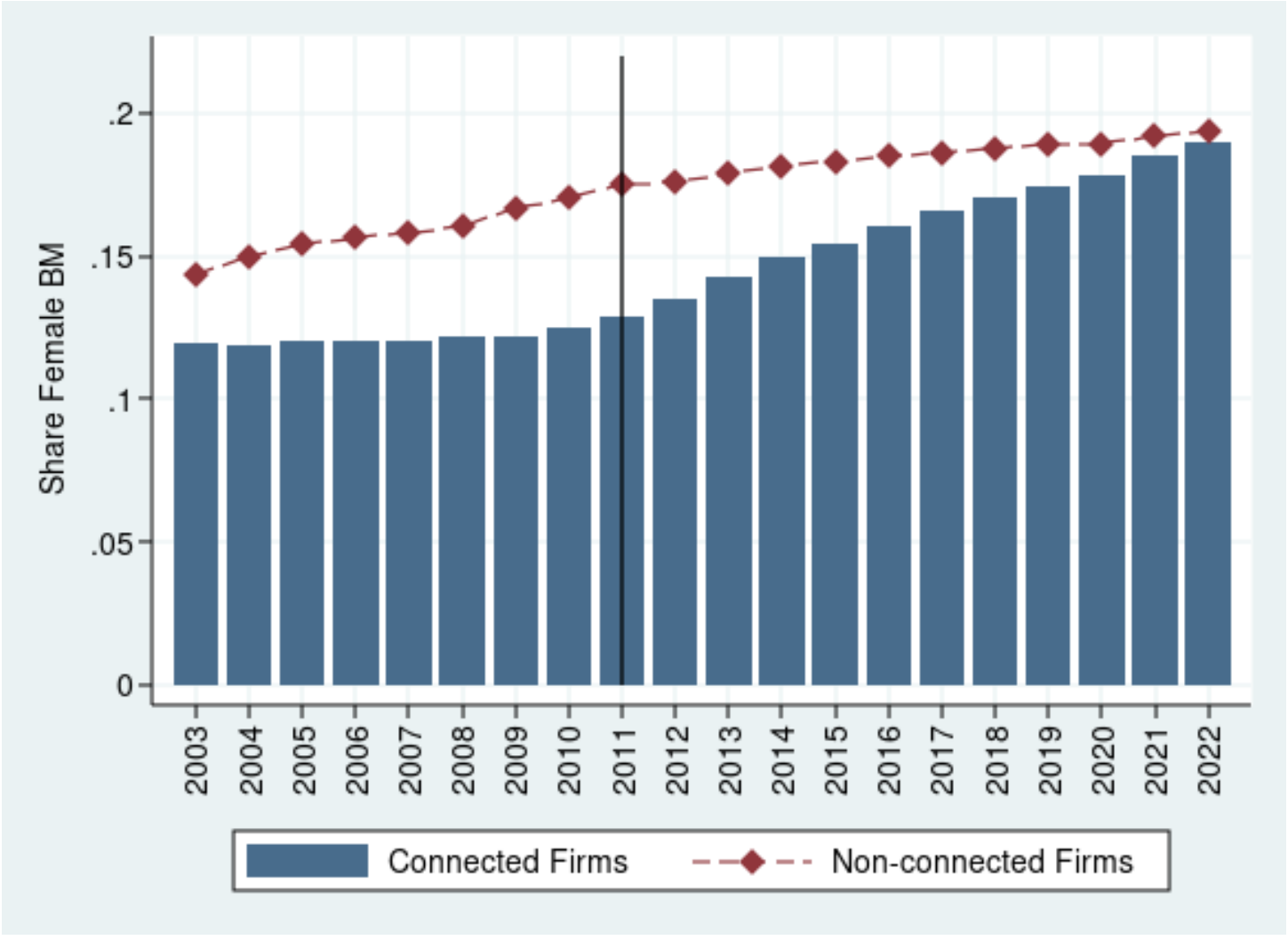
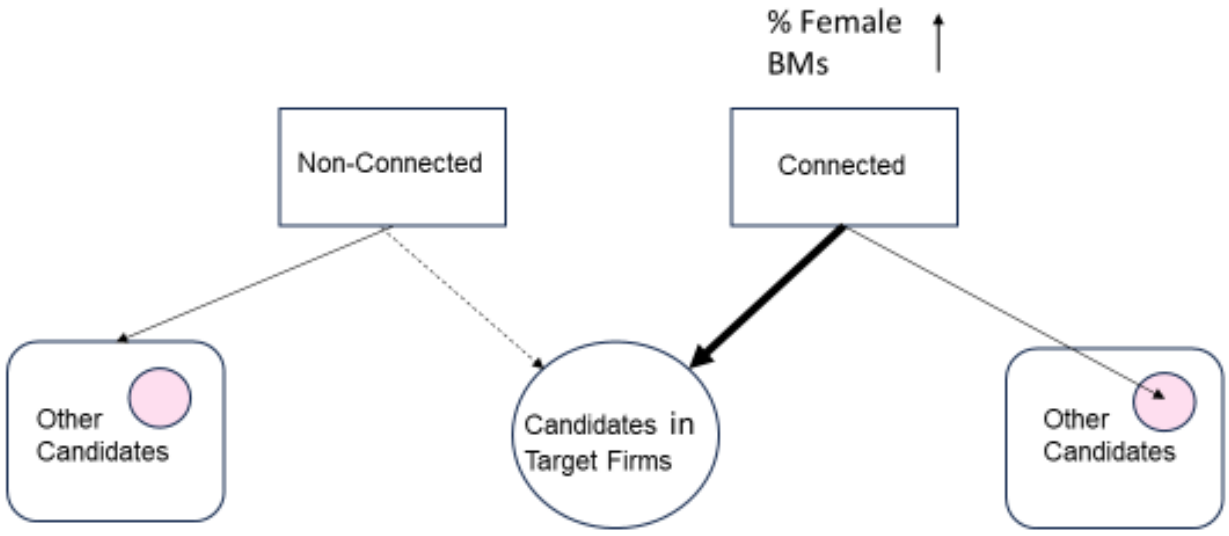
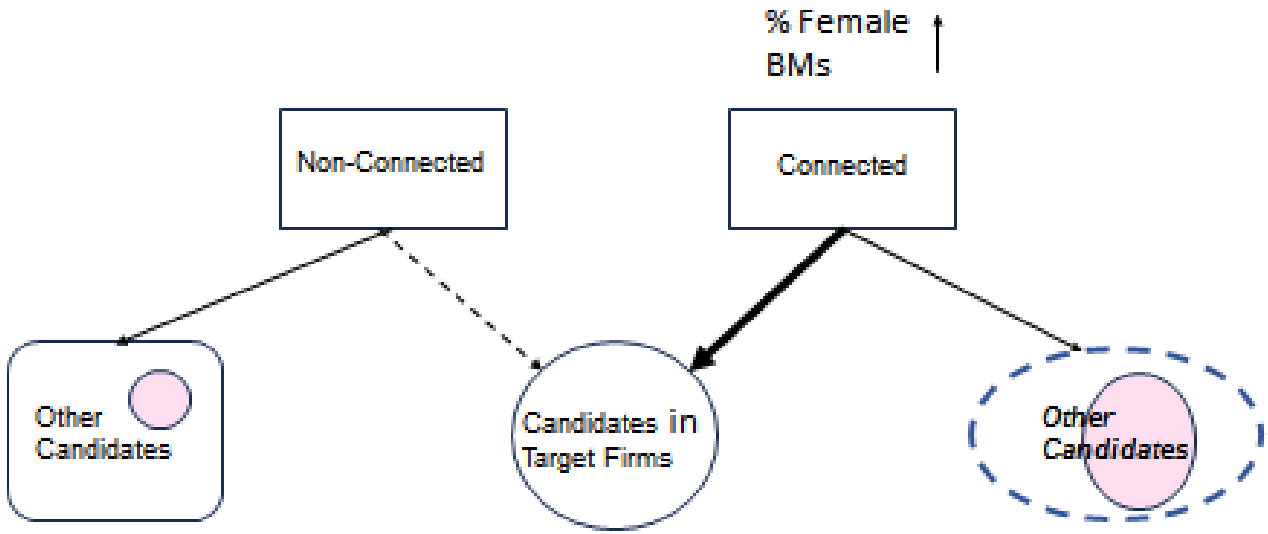


Other Candidates: Changes in Preferences..?



Other Candidates: ..or Changes in Pool?