Board Quotas and Director-Firm Matching

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- Poor matches are likely to be terminated.
- The turnover rate is a measure of match stability.
- Director turnover gives us insights into the functioning of director labor markets

The intervention: Gender board quota in France, 2011

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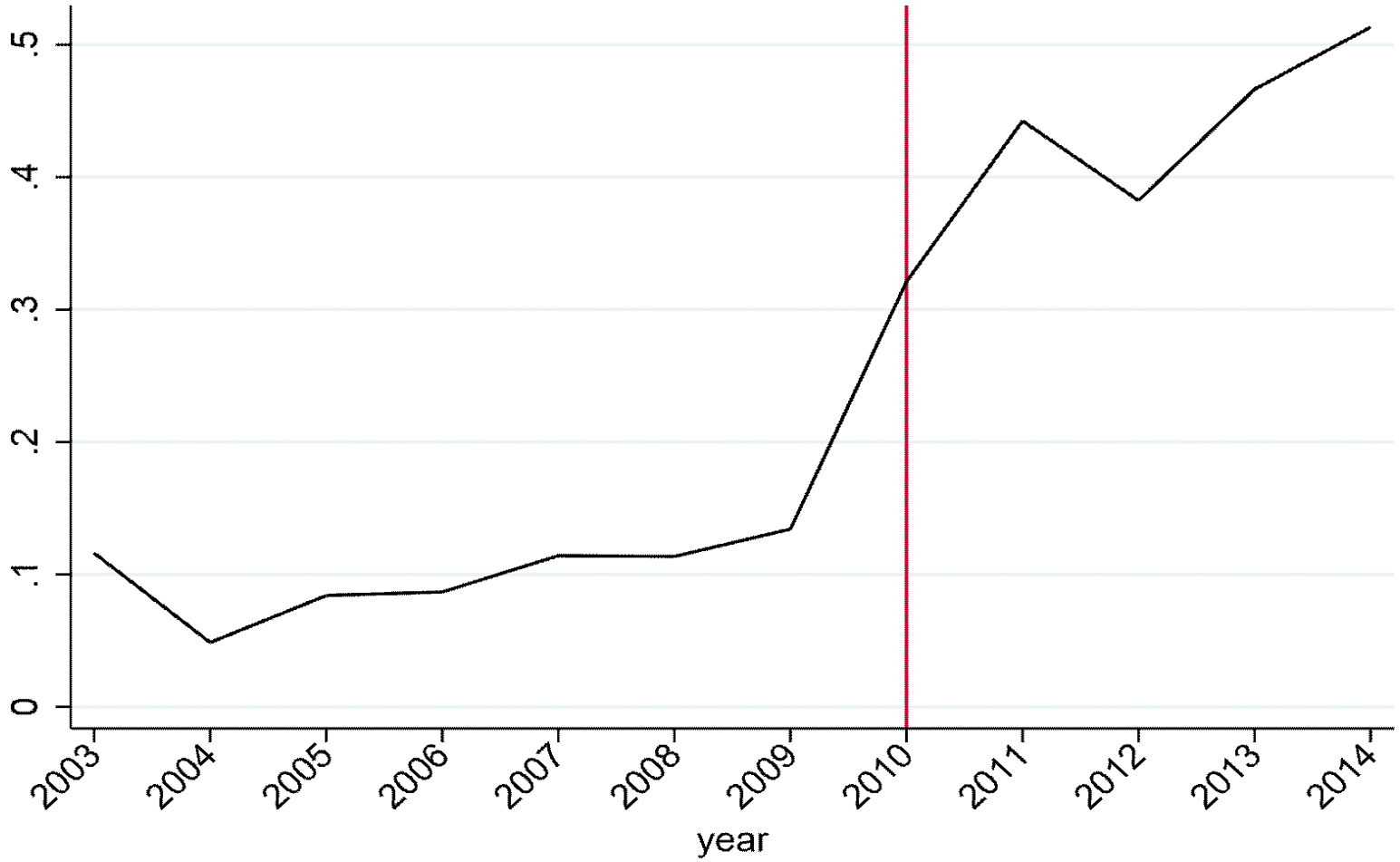
- Policy intervention in a thin labor market.
- The quota is a shock to the demand for female directors.
- Effect on match stability is ambiguous:
  - Increase turnover if (i) better director outside opportunities and/or (ii) lower quality directors.
  - Decrease turnover if (i) higher replacement costs and/or (ii) higher quality directors.

Proportion of new female positions over total new positions in France

Takeaway: Adjustment is mostly through new appointments



Female director characteristics

Averages, non-executive directors, 2010 excluded.

	Before 2010	After 2010	Diff.
Female outside directors			
Age	53	54	-1**
Time on board	5.90	3.96	1.94***
Family	0.17	0.08	0.09***
Independent	0.34	0.58	-0.24***
Number of directorships	1.8	1.9	-0.1
Major Committee Member	0.55	0.60	-0.05***
Industry Expert	0.09	0.13	-0.04***
MBA	0.12	0.15	-0.03*
Grande Ecole	0.27	0.21	0.06***
CEO Experience	0.244	0.318	-0.074***
C-Suite Experience	0.015	0.039	-0.024***
Turnover	11%	6%	5%***

Empirical model

$$y_{dft} = a_1 w_d + a_2 w_d p_t + \alpha_{ft} + \boldsymbol{\beta} \mathbf{x}_{dft} + u_{dft}$$

where

- y_{dft} is an indicator equal to one if a director d from firm f turns over in the year following the fiscal year end t
- w_d is a female indicator
- p_t is an indicator of "post 2010"
- α_{ft} are firm-year fixed effects
- $\mathbf{x}_{dft}$ is a vector of director characteristics

Note: we use linear models for ease of interpretation. Using a discrete response model (Logit) yields similar qualitative results, but we can't recover the average partial effect a_2 without making assumptions about the unobserved effects α_{ft}.

The effect of the French quota

	(1)	(2)	(3)	(4)
Female*Post 2010	-0.051***	-0.042***	-0.034**	-0.031**
t-stat (f clustered)	[-3.89]	[-2.94]	[-2.30]	[-2.11]
Female	-0.014	-0.011	-0.010	-0.019
t-stat (f clustered)	[-1.23]	[-0.93]	[-0.79]	[-1.42]
Post 2010	0.004			
t-stat (f clustered)	[0.51]			
Observations	19,360	19,360	19,360	17,680
Firm-year FE	NO	YES	YES	YES
Age (quartic) and tenure	NO	NO	YES	YES
Additional controls	NO	NO	NO	YES

The effect of the French quota

Diff-in-diff: US as control

	(1)	(2)	(3)	(4)
Female*Post 2010*France	-0.048***	-0.042***	-0.035**	-0.030**
t-stat (f clustered)	[-3.53]	[-2.84]	[-2.35]	[-2.01]
Female	-0.017***	-0.016***	-0.006***	-0.003
t-stat (f clustered)	[-8.28]	[-7.38]	[-2.71]	[-1.30]
Female*Post 2010	-0.004	0.000	0.005	0.005
t-stat (f clustered)	[-1.20]	[0.05]	[1.63]	[1.41]
Female*France	0.003	0.005	-0.007	-0.022*
t-stat (f clustered)	[0.28]	[0.39]	[-0.57]	[-1.66]
Post 2010	-0.007***			
t-stat (f clustered)	[-4.83]			
France	0.031***			
t-stat (f clustered)	[5.48]			
Observations	333,052	333,052	333,052	304,257
Firm-year FE	NO	YES	YES	YES
Age (quartic) and tenure	NO	NO	YES	YES
Additional controls	NO	NO	NO	YES

The effect of the French quota

Post 2010 appointments

	(1)	(2)	(3)
Female	-0.046**	-0.048**	-0.055**
t-stat (f clustered)	[-2.52]	[-2.50]	[-2.53]
Observations	1,822	1,822	1,584
Firm-year FE	YES	YES	YES
Age (quartic) and tenure	NO	YES	YES
Additional controls	NO	NO	YES

Turnover in High-Elitism Boards vs Low-Elitism Boards

	(1)	(2)	(3)
Quota effect on high-elitism boards	-0.063***	-0.054***	-0.054***
	[-3.17]	[-2.67]	[-2.73]
Quota effect on low-elitism boards	-0.012	-0.004	0.004
	[-0.61]	[-0.21]	[0.21]
Difference	-0.051*	-0.049*	-0.058**
	[-1.80]	[-1.76]	[-2.03]
Observations	19,360	19,360	17,680
Firm-year FE	YES	YES	YES
Age (quartic) and tenure	NO	YES	YES
Additional controls	NO	NO	YES

Is board elitism a proxy for fewer women on boards?

	(1)	(2)	(3)
Female*Post 2010*Elite	-0.069**	-0.069**	-0.078***
t-stat (f clustered)	[-2.47]	[-2.43]	[-2.70]
Female*Post 2010*Few Women	0.016	0.009	0.008
t-stat (f clustered)	[0.48]	[0.26]	[0.22]
Female	-0.018	-0.011	-0.02
t-stat (f clustered)	[-1.07]	[-0.60]	[-1.34]
Female*Post 2010	-0.018	-0.007	0.001
t-stat (f clustered)	[-0.88]	[-0.32]	[0.06]
Female*Elite	0.030	0.028	0.041*
t-stat (f clustered)	[1.35]	[1.15]	[1.63]
Female*Few Women	-0.027	-0.031	-0.030
t-stat (f clustered)	[-1.12]	[-1.13]	[-1.08]
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Hypothesis: Quota improves match quality

- Before the quota, some firms used hiring practices (i.e., a **search technology**, in the language of Diamond and Maskin, 1979) that "discriminated" against female candidates
- Quota forces firms to change their hiring practices; firms now find even better female candidates.
  - See Mailath, Samuelson, and Shaked (2000, AER) for a theory of discrimination based on search frictions.
  - See Cornell and Welch (1996, JPE) for a theory of "screening discrimination" based on commonality of backgrounds.

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4. After the quota, newly appointed male directors are also less likely to be Grande Ecole graduates.

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1. Quota effects operate mainly through new appointments.
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4. After the quota, newly appointed male directors are also less likely to be Grande Ecole graduates.
5. Consistent with some anecdotal evidence

Anecdotal evidence: Media

"The transformation induced by the Copé-Zimmermann Law had several consequences, amongst which more professional recruitment methods. Careful selection of candidates replaced old friendly cooptation."

Source: Le Nouvel Economiste (January 2016)

"From 2011, when Hubert Sagnières [CEO of Essilor] received a large amount of unsolicited applications and recommendations for joining the board [particularly women], he wished to ensure the independence of the hiring decision by using a headhunter."

Source: Les Echos Business (March 2016)

Additional results

- Post-quota women are more independent and less likely to have family connections to owners
  - Lower turnover is unlikely to be explained by an increase in private benefits or "entrenchment."
- After the quota, incumbent female directors display **higher** turnover probabilities in poor-performing and high-volatility firms.
- The evidence suggests that improved labor market opportunities allow female directors to "cherry pick" the boards on which they sit.

Main takeaway

The evidence suggests that the quota has improved the stability of director-firm matches **by changing the search technology (i.e., hiring practices)**.

Interpretation

The **net surplus** of a match ("match quality") is

$$Q_{fd} \equiv S_{fd} - V_f - U_d$$

where:

- S_{fd} is the joint gross surplus (or "internal match quality")
- V_f is the firm's outside option (including "replacement costs")
- U_d is the director's outside option (including search costs)

"Theory": Turnover occurs if $Q_{fd} < 0$.

- Female director turnover falls after quota
  - Net surplus (match quality) for female matches is larger after quota. But why?

Hypothesis 1: Can't let you go

A decrease in V_f, i.e., an increase in replacement costs?

- But the effect is stronger for post-quota appointments.
  - If anything, pre-quota female appointments should be harder to replace.
- Effect is **not** stronger for firms with fewer women.

Hypothesis 2: Directors with worse outside opportunities

A lower U_d for new female appointments?

- Quota should **increase** U_d
- But perhaps rookie directors have lower U_d
- However, turnover falls equally for **both rookie and seasoned directors**

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The effect of the French quota

Pre 2010 appointments

	(1)	(2)	(3)
Female*Post 2010	-0.032**	-0.026*	-0.023
t-stat (f clustered)	[-2.16]	[-1.72]	[-1.52]
Observations	17,538	17.538	16,096
Firm-year FE	YES	YES	YES
Age (quartic) and tenure	NO	YES	YES
Additional controls	NO	NO	YES

Male director characteristics

Averages, non-executive directors, 2010 excluded.

	Before 2010	After 2010	Diff.
All male directors			
Age	59.1	60.2	-1.20***
Time on board	5.65	7.05	-1.39***
Family	0.05	0.07	-0.02***
Independent	0.46	0.49	-0.03***
Number of directorships	2.45	2.09	0.35***
Major Committee Member	0.68	0.70	-0.02***
Industry Expert	0.18	0.22	-0.04***
MBA	0.15	0.16	-0.01**
Grande Ecole	0.41	0.38	0.03***
CEO Experience	0.46	0.47	-0.01
C-Suite Experience	0.03	0.03	-0.00
Turnover dummy	12%	12%	-0%

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Quota effect on high-elitism boards	-0.066***	-0.069***	-0.073***
	[-2.77]	[-2.81]	[-2.82]
Quota effect on low-elitism boards	-0.012	-0.013	-0.010
	[-0.45]	[-0.45]	[-0.32]
Difference	-0.054	-0.056	-0.063
	[-1.46]	[-1.50]	[-1.61]
Observations	1,822	1,822	1,584
Firm-year FE	YES	YES	YES
Age (quartic) and tenure	NO	YES	YES
Additional controls	NO	NO	YES

Gender board quotas

- Mandatory gender quota laws have been passed in Norway, France, Italy, Belgium, The Netherlands, Spain, and Germany.
- Such laws typically require firms to have a minimum proportion of each gender on their boards.
- Ex.: In January 2011, the French National Assembly approved a law imposing 20% of women on (supervisory) boards from January 2014 on, rising to 40% in 2017. It applies to all listed and non-listed companies with at least 500 employees, or with revenues of at least EUR 50 million.
- The average proportion of female directors was 10% just before the law (2009).

The effect of the French quota

Performance interactions; pre-2010 directors only

	(1)	(2)	(3)
Quota effect on low-ROA firms	0.169**	0.17**	0.202***
	[2.21]	[2.35]	[2.75]
Quota effect on high/median-ROA firms	-0.040***	-0.034**	-0.031**
	[-2.68]	[-2.23]	[-2.06]
Difference (low minus high)	0.210***	0.210***	0.234***
	[2.67]	[2.73]	[3.07]
Observations	16,686	16,686	15,490
Firm-year FE	YES	YES	YES
Age (quartic) and tenure	NO	YES	YES
Additional controls	NO	NO	YES

Turnover regressions

France, 2004-2014 (ignoring the quota)

	(1)	(2)	(3)	(4)
Female	-0.046***	-0.036***	-0.029***	-0.035***
t-stat (f clustered)	[-8.57]	[-6.05]	[-4.58]	[-5.12]
Constant	0.122***	0.121***		
t-stat (f clustered)	[30.67]	[157.20]		
"Unexplained Gap"	100%	79%	63%	77%
Observations	21,367	21,367	21,367	19,561
Firm-year FE	NO	YES	YES	YES
Age (quartic) and tenure	NO	NO	YES	YES
Additional controls	NO	NO	NO	YES

Turnover regressions

France vs US, 2004-2014 (ignoring the quota)

	France	US
Female	-0.035***	-0.000
Family Director	-0.090***	-0.043***
Independent	-0.042***	-0.065***
Number of directorships	-0.006***	-0.002***
Major Committee Member	-0.054***	-0.041***
Industry Expert	-0.011*	-0.001
Time on Board	0.002***	0.002***
Age	0.17***	0.18***
Age^2	-0.45***	-0.50***
Age^3	0.05***	0.06***
Age^4	-0.002***	-0.002***
Observations	19,561	314,131
Firm-Year FE	YES	YES

Turnover

US, 2004-2014

	(5)	(6)	(7)	(8)
Female	-0.019***	-0.016***	-0.003*	-0.000
t-stat (f clustered)	[-13.18]	[-10.54]	[-1.89]	[-0.16]
Constant	0.087***	0.086***		
t-stat (f clustered)	[124.19]	[556.19]		
"Unexplained Gap"	100%	84%	15%	2%
Observations	344,552	344,552	344,552	314,131
Firm-Year FE	NO	YES	YES	YES
Age (quartic) and tenure	NO	NO	YES	YES
Additional controls	NO	NO	NO	YES

Who are board directors, and who appoints them?

Board directors can be executive or non-executive (outside).

Directors have fixed-term appointments (typically 1-3 years), are nominated by the board's nominating committee, and approved by shareholders in annual shareholder meetings.

They normally hold multiple board seats and/or executive positions in other firms.

What do they do, and how are they paid?

- They monitor and advise top executives.
- They meet between 5 to 10 times per year.
- (In France) they have fiduciary duties toward the corporation as a whole.

Remuneration: about EUR 40k per year. Within a board, pay varies only because of differences in:

- Attendance
- Committee membership
- Additional roles, such as committee chairs.

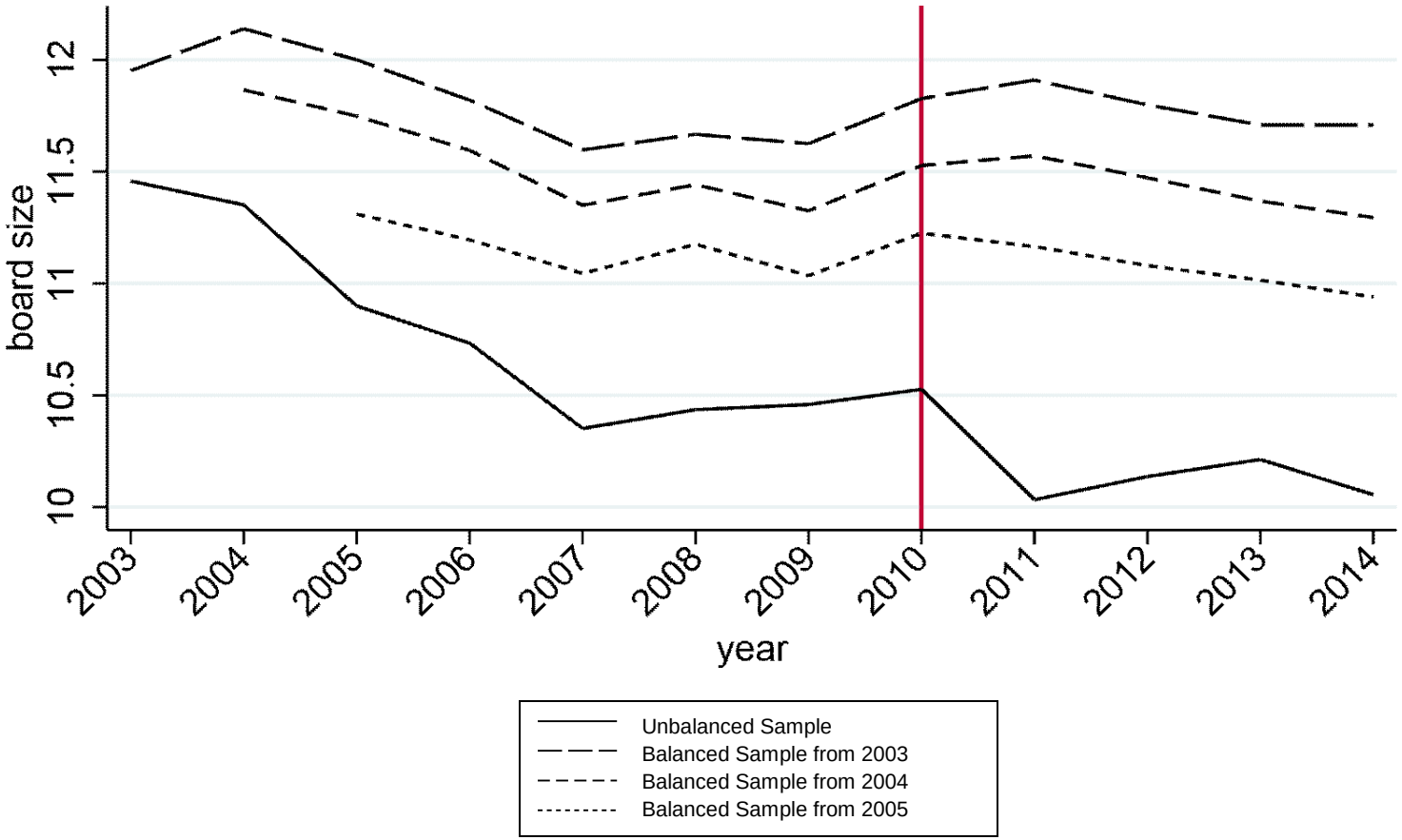
Anecdotal evidence: Headhunters and board training

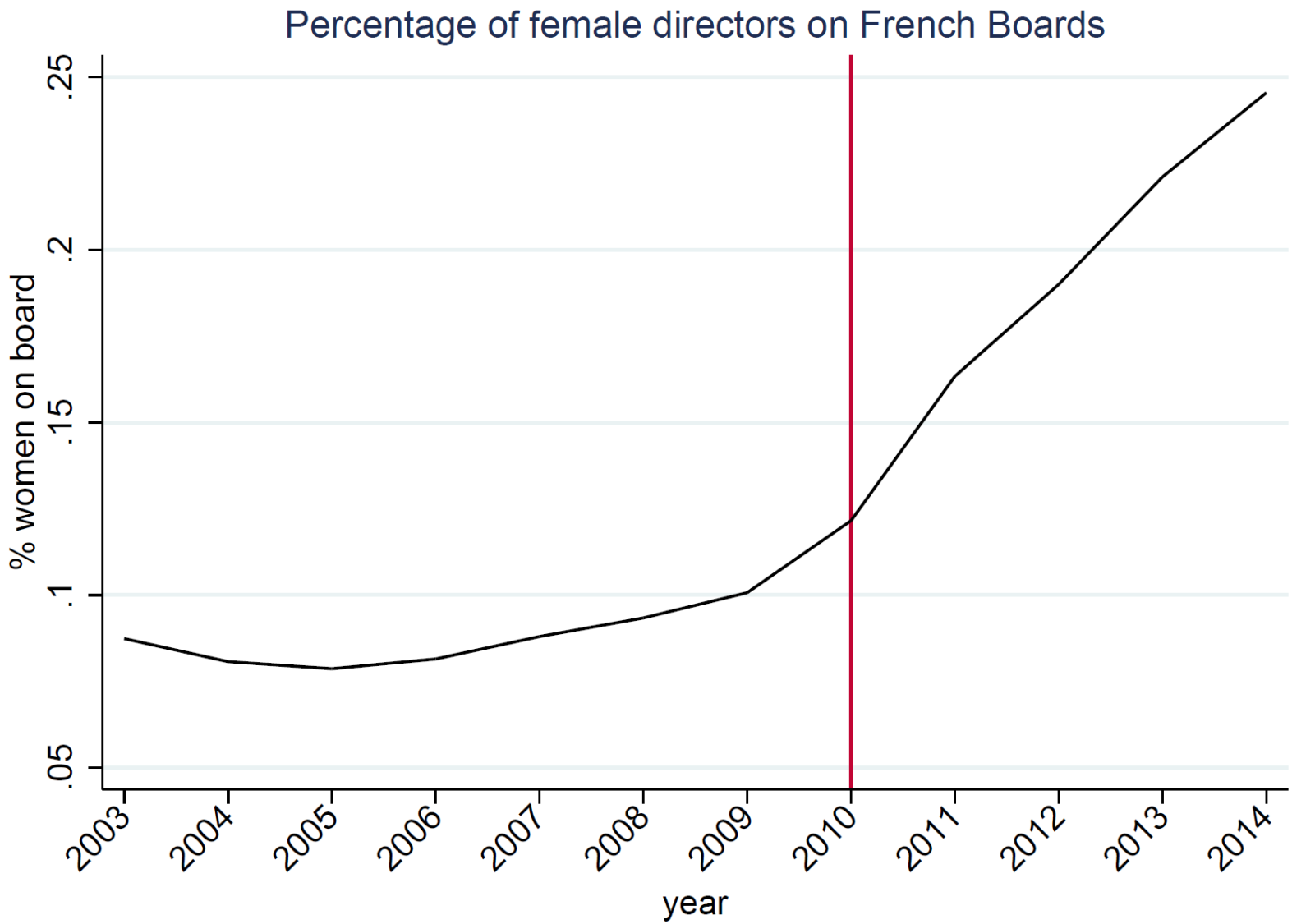
Some head hunters have created departments for women (for example "Femmes au Cœur des Conseils" by Leyders and associates). They have more than 1000 women in their pool of candidates; 60% of them have at least one C-suite experience.

Women comprised 54% of the participants in “Le Certificat Administrateur de Sociétés” (board director training over 6 months) over the period 2010-2016.

Average Board Size in France

Adjustment is not through reduction in board size





Full sample: 3,369 firm-year observations for 414 unique publicly-listed French firms (average size EUR 14B); only 377 unique firms included above due to incomplete data.

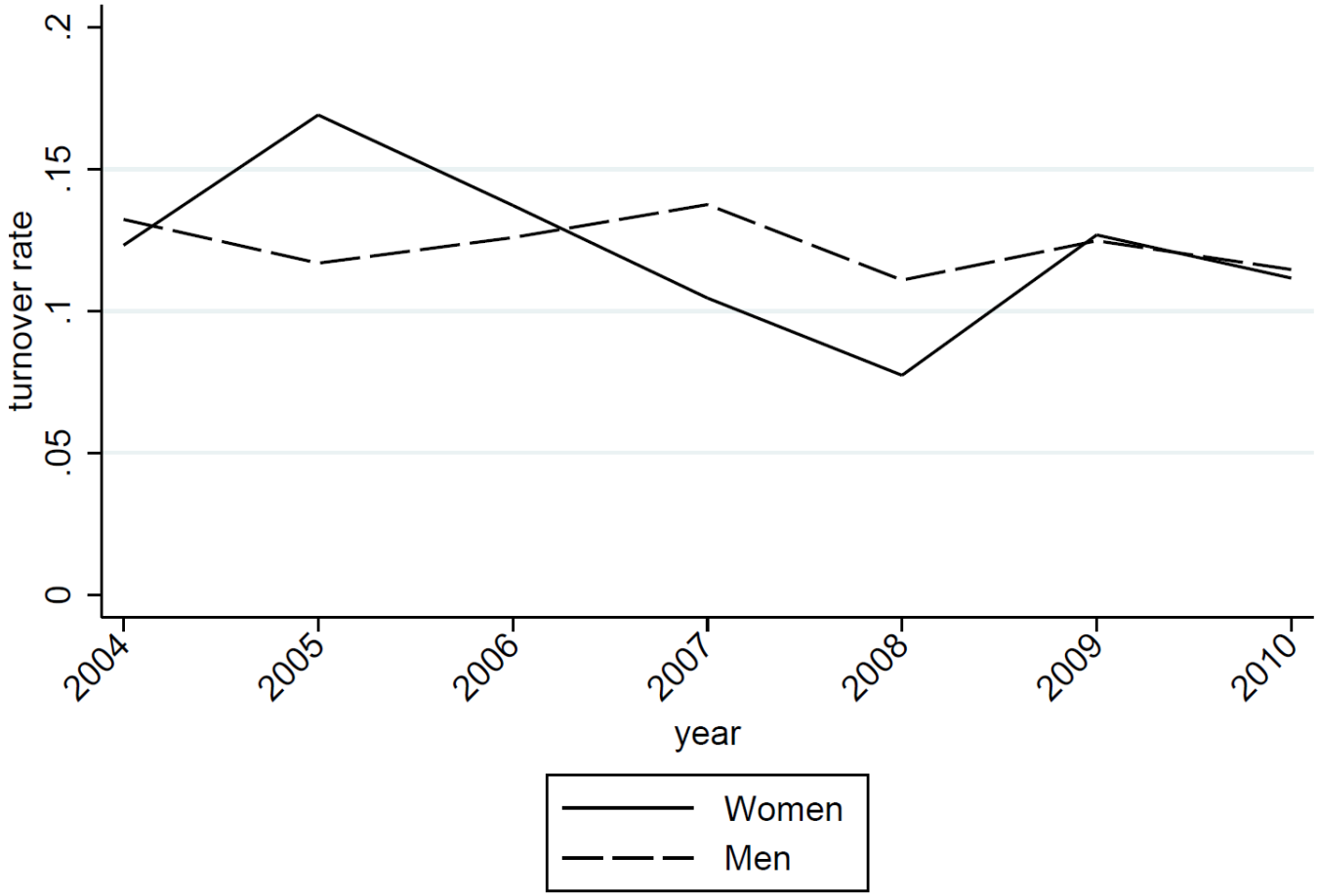
Director characteristics (France, 2004-2014)

Averages, all directors in publicly-listed firms, between 25k and 35k director-years.

	Women	Men	Difference
Age	53.2	58.2	5.0***
Time on board	4.88	6.66	1.78***
Family director	0.14	0.10	-0.04***
Independent	0.42	0.35	-0.07***
Number of directorships	1.69	2.04	0.35***
Major committee member	0.53	0.58	0.05***
Industry Expert	0.10	0.18	0.08***
MBA	0.14	0.15	0.01*
Grand Ecole	0.23	0.38	0.15***
Ivy League	0.05	0.08	0.03***
CEO experience	0.29	0.49	0.20***
C-Suite experience	0.04	0.05	0.01**

Average turnover rate in France (2004-2010)

Turnover rate: Proportion of directors who are not renewed



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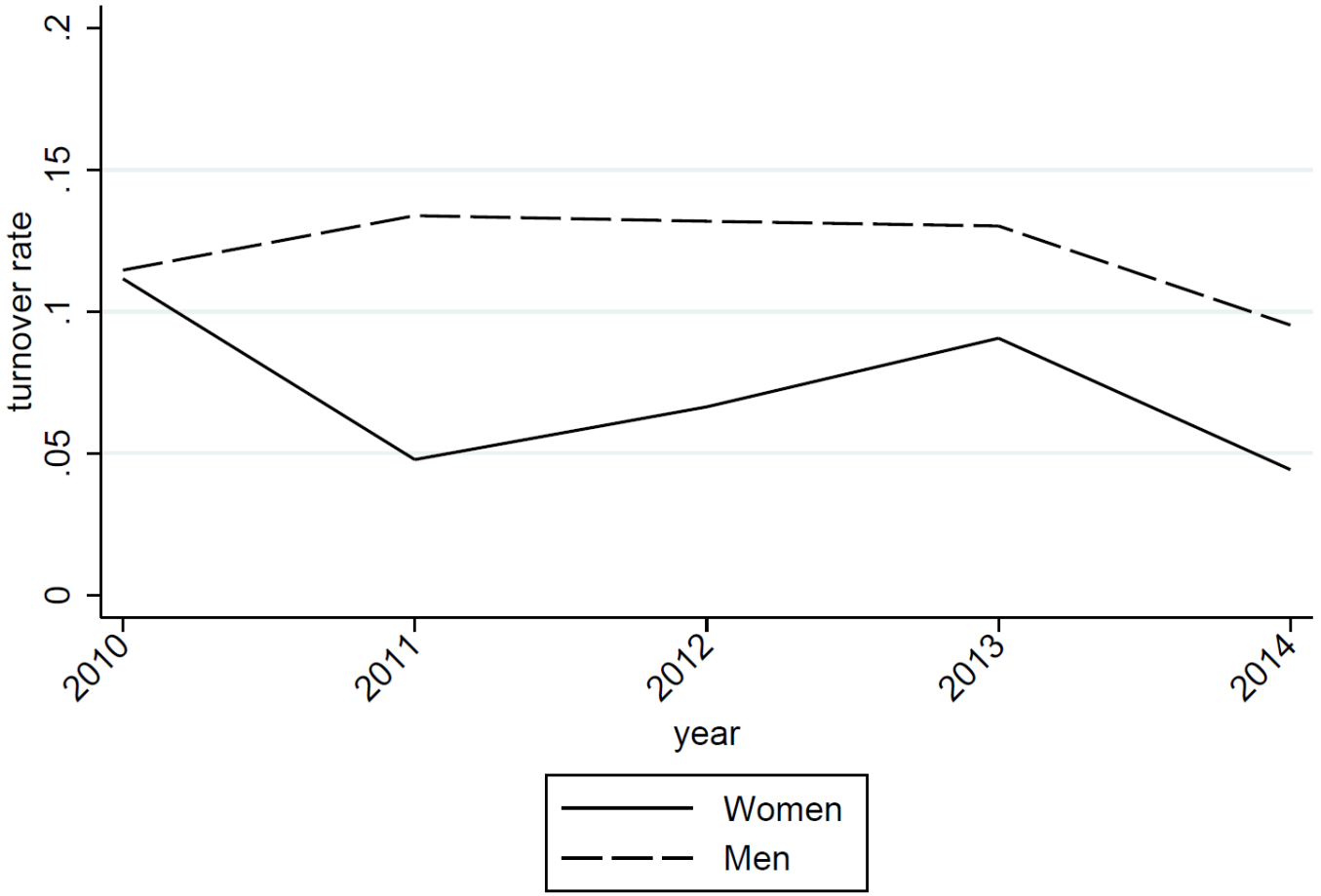

Main takeaway

The evidence suggests that the quota has improved the stability of director-firm matches **by changing the search technology (i.e., hiring practices)**.