

Stock Market Reaction to Female CEO Nominations: Is the Market Gendered?

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The fact

Stock markets react more negatively following the appointment of a female CEO than following that of a male CEO (Lee and James, 2007).

The literature

Lee and James (2007)

- Top executive (CEO, CFO, COO...) announcements from firms 1990 to 2000 in publicly listed companies in the US.

Dixon-Fowler et al. (2013)

- Female CEO announcements and dismissals between 1991 and 2006 in the US.

Zhang and Ku (2016) examine CEO succession with gender change and future firm performance

- CEO successions in companies listed in China's Shanghai and Shenzhen Stock Exchanges from 1997 to 2010

Why does it matter?

- Firms may be reluctant to appoint women if they expect a negative stock market reaction
- This can contribute to higher gender inequality and inefficient talent allocation at both the firm and the societal levels

Existing explanations

Media biases female CEO reporting (Lee and James, 2007)

Table 2. Most influential words in manifest text analysis of articles announcing newly appointed CEOs

Rank	Male CEOs		Female CEOs	
	Top 15 influential words	Influence	Top 15 influential words	Influence
1	Company	0.20770	Company	0.21556
2	Mr.	0.08567	President	0.10132
3	President	0.05834	Woman	0.08742
4	Year	0.05480	Executive	0.06783
5	Business	0.05257	New	0.05482
6	Inc.	0.04782	Year	0.05155
7	New	0.04669	Inc.	0.04732
8	Chairman	0.03342	Corp.	0.04352
9	Market	0.03113	Family	0.03854
10	Analyst	0.02833	Chairman	0.03761
11	Product	0.02764	Industry	0.03645
12	Board	0.02587	Time	0.03522
13	CEO	0.02543	Business	0.03239
14	Time	0.02251	Springs	0.03080
15	Share	0.02182	Sale	0.02540
	Last 15 influential words		Last 15 influential words	
50	People	0.00672	Large	0.00802
51	Financial	0.00664	Job	0.00698
52	Family	0.00658	Manager	0.00693
53	Manager	0.00657	Photo	0.00682
54	Top	0.00653	Financial	0.00669
55	Headquarters	0.00611	Chief Executive Officer	0.00662
56	Job	0.00498	Change	0.00599
57	Large	0.00466	Co.	0.00508
58	Position	0.00431	Software	0.00460

Our main hypothesis

'The market is gendered'

...in other words we ask

Does the gender diversity of market participants play a role in explaining the negative stock market reaction to a female CEO nomination?

Methodology

Simulation-based lab experiment where participants trade their portfolio (stocks and cash) in response to news including

- the announcement of the new CEO of the company SunCar
- the announcement of the result of a tender offer (placebo event)

“SunCar designs, produces and sells low-speed electric vehicles for city use. The batteries of these solar-powered cars can be refilled at public charging points. Due to a severe illness, Jack Dallara, founder and CEO, will be relinquishing his operational duties soon. At midday, SunCar is expected to announce the name of his successor. The two candidates for the CEO position are Anna Farrell and Henri Villa.”

Methodology

Participants: 126 students, 71 female, 55 male.

All students come from the same course track (same background in finance, same age, same entry exam, nationality, similar average grades)

Methodology: why using an experiment?

Two dimensional approach to gender

- we randomize the gender of the appointed CEO
- we know the gender of the market participant

Improve on endogeneity concerns and also deals with two key issues

- No information leaking
- Less limited attention

Methodology

Participants are told to act as investors

- to maximize their gains out of the trading day

Participants trading decision to buy or sell stocks signals their beliefs or expectations regarding the new CEO's impact on future firm performance

Null hypotheses regarding the gender of the CEO

Hypothesis 1: The proportion of buy/sell orders sent by all participants **when a female CEO** is nominated equals the proportion of buy/sell orders sent by all participants **when a male CEO** is nominated.

- Hypothesis 1a: The proportion of buy/sell orders sent by female participants when a female CEO is nominated equals the proportion of buy/sell orders sent by female participants when a male CEO is nominated.
- Hypothesis 1b: The proportion of buy/sell orders sent by male participants when a female CEO is nominated equals the proportion of buy/sell orders sent by male participants when a male CEO is nominated.

Null hypotheses regarding the gender of participants

Hypothesis 2: After the nomination of a CEO of any gender, the proportion of buy/sell orders sent by **female participants** equals the proportion of buy/sell orders sent by **male participants**.

- Hypothesis 2a: After the nomination of a female CEO, the proportion of buy/sell orders sent by female participants equals the proportion of buy/sell orders sent by male participants.
- Hypothesis 2b: After the nomination of a male CEO, the proportion of buy/sell orders sent by female participants equals the proportion of buy/sell orders sent by male participants.

Results

Table 1. Participants' trading reaction following CEO nomination announcement

	Pooled simulations	Female CEO simulations	Male CEO simulations
Pooled participants	Buy: 44% Sell: 56%	Buy: 43% Sell: 57%	Buy: 44% Sell: 56%
Female participants	Buy: 42% Sell: 58%	Buy: 55% Sell: 45%	Buy: 33% Sell: 67%
Male participants	Buy: 47% Sell: 53%	Buy: 27% Sell: 73%	Buy: 63% Sell: 37%

Note: This table gives the statistics of trading reaction by participants (female/male participants) following the nomination of the new CEO (female/male CEO) in the simulations. In each cell, we indicate the percentage of participants who bought or sold SunCar stocks just after the announcement of the nomination of SunCar new CEO (within a one-hour time-window after the announcement). The participants were recruited among ESSEC Business School students. The experiments were done in the ESSEC experimental research lab designed for conducting experiments in a controlled environment. The first row of the table considers the pooled sample with all participants (both female and male participants); the first column considers the pooled sample with all simulations (simulation variants in which either a female or a male CEO was nominated).

Statistical tests

At the aggregated level

- Following the announcement of the CEO nomination the probability of sellers and buyers is not significantly different from 50% at conventional levels.
- Pooled participants react in the same manner when a male or a female CEO is nominated (the difference between participants' trading is not statistically significant), which fails to reject Hypothesis 1.

Statistical tests

Conditional on the gender of the participants

- female participants react significantly differently when a male or a female CEO is nominated but that the difference is not statistically significant at conventional levels (chi-square test of 3.51 with a p-value of 0.17).
- male participants react differently when a male or a female CEO is nominated and that the difference is statistically significant at conventional levels (chi-square test of 5.66 with a p-value of 0.06).

Statistical tests

Conditional on the gender of the CEO

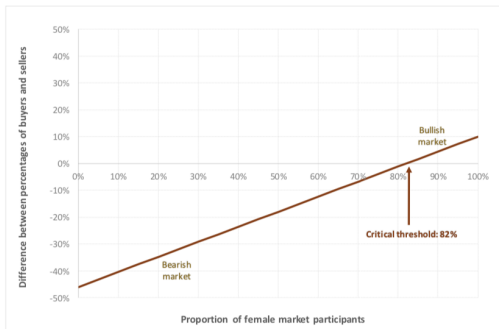
- when a female CEO is nominated, the difference between female and male participants' trading is not statistically significant at conventional levels (chi-square test of 3.18 with p-value of 0.20).
- when a male CEO is nominated, the difference between female and male participants' trading is statistically significant at conventional levels (chi-square test of 6.12 with p-value of 0.09).

We also build a **market gender bias indicator** based on the proportion of female market participants that would be needed to have a gender-neutral market reaction.

Findings: quantitative importance

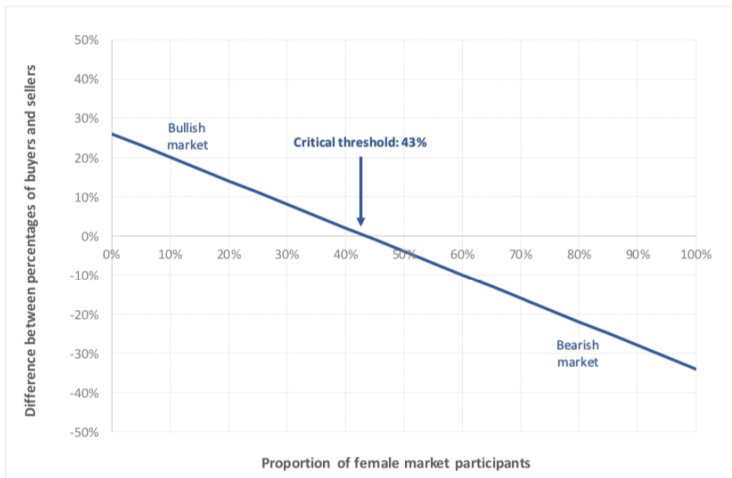
Figure 1. Difference between the percentage of buyers and sellers as a function of the proportion of female market participants

A. Following the nomination of a female CEO



Findings: quantitative importance

B. Following the nomination of a male CEO



Robustness checks

Placebo event

- non-gendered event (result of the tender offer will be announced during the day that the company SunCar may win it or not) that takes place after the CEO nomination.

Findings

- when SunCar wins the tender offer participants perceive this event positively: 80% are buyers, and 20% are sellers.
- when SunCar loses the tender offer participants perceive this event negatively: 64% are sellers, and 36% are buyers.
- These results are statistically significant at conventional levels (chi-square test of 10.18 with p-value lower than 0.01).

Importantly for us, we find no statistical difference as function of the gender of participants

Interpretations?

- Homophily
- Entitativity
- Expectations

Policy implications?

The policy implication of our study is that gender is not only an issue at the corporate level reflected in the need to nominate more female CEOs but also an issue at the financial industry level reflected in the need to increase its gender diversity by attracting more women in investment occupations; finally it is an issue at the societal level reflected in the need to change individual and collective gender stereotypes about leadership.

Future work

So far, the only information about the CEO is the name and surname (allowing to infer the gender of the CEO)

Forthcoming simulation where we enrich the description of the CEO

- personal (age, marital status, work availability...)
- professional (educational background, work experience, insider/outsider status)

SunCar is a company in a ‘stereotypical male industry’

- We could change that in future simulations

We could also explore the impact of diversity in the experimental lab (all male participants, or all female or mixed student pool)...

Thank you for your attention !