

# Board gender-balancing, network information, and insider trading

B. Espen Eckbo and Bernt Arne Ødegaard

Nov 2021

## Abstract

Following Norway's forced board gender-balancing (12/2007), which more than doubled the network of female directors, the short-term market reaction to the population of primary female insider purchases has become significantly positive. However, accounting for insiders' actual holding periods, this positive network-driven information effect does not map into positive abnormal insider trading performance. During the financial crisis period (10/2008–12/2010), both male and female insiders of the by then gender-balanced boards significantly increased their stock purchases. This increase, which we show does not reflect inside information, suggests that female directors are not more risk averse than their male counterparts.

### Primary Insider trades

Trades by executives or directors in own company stock.

### Source of trading profit

Trades reflect knowledge/understanding/experience of

- Own company
- Industry in which company operates

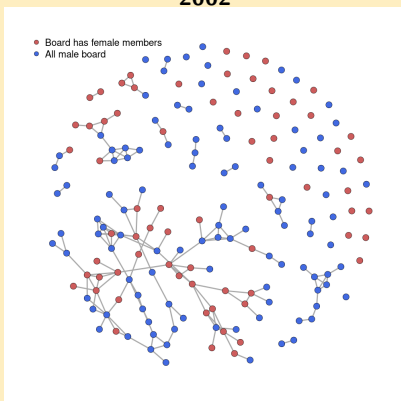
### Sources of gender differences?

- *Network* of insiders (e.g. board memberships) determine information (Inci, Narayanan and Seyhun, 2017)
- When females few, trades reflect less inside information
- Norway: Shock to gender network: Board reform – 40% minimum female representation on boards of OSE listed companies. (Eckbo, Nygaard and Thorburn, 2021)

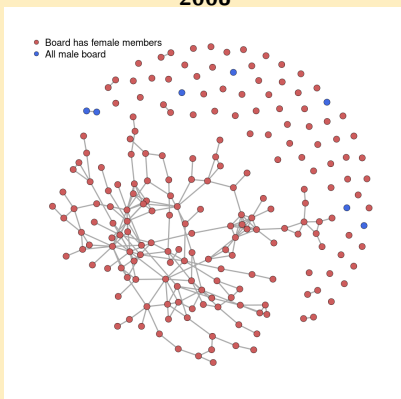
### Evolving connectedness of board networks

#### Board network maps

2002



2008



Blue: All male boards;  
Red: Boards with at least one female director

### This investigation

Norway: All reported inside trades 1997–2016.

### Measure gender differences in

- Short term market *reaction* when insiders trade.
- Long term *performance* measuring the actual gains implied in insider's trading.

### Short term price movements when insiders trade

- Timing by insiders (insider knowledge)
- Market's evaluation of the fact that an insider traded.

### Method: Event study

Market reaction (CAR): Coefficient  $\Gamma$  in

$$r_{it}^e = a_i + b_i r_{mt}^e + \Gamma D_{it}^{event} + \varepsilon_{it}$$

Event windows: (-1, 1) (-1, 5) (-1, 25) (-1, 50)

	(-1, 1)	(-1, 5)	(-1, 25)	(-1, 50)
<b>A: Female Insiders 1997–2007</b>				
CAR	0.0039 (0.002)	-0.0008 (0.001)	-0.0150 (0.001)	-0.0151 (0.0005)
<b>B: Male Insiders 1997–2007</b>				
CAR	0.0163*** (0.001)	0.0148*** (0.001)	0.0117 (0.0003)	0.0104 (0.0003)
<b>C: Female Insiders 2008–2016</b>				
CAR	0.0154*** (0.002)	0.0212*** (0.001)	0.0172 (0.001)	0.0161 (0.0004)
<b>D: Male Insiders 2008–2016</b>				
CAR	0.0167** (0.002)	0.0083 (0.002)	-0.0141 (0.001)	-0.0429 (0.001)

Market reaction to female trades larger as the female network increases

### Gender difference in long term performance

Construct portfolio incorporating information in insider trades

- Ownership weights
- Value weights

→ Monthly series of portfolio weights.

### Performance evaluation

- Holdings-based evaluation
  - Do weight changes in (inside) portfolio predict performance?
- Returns-based evaluation
  - "Alpha"

### Results of long term performance comparison

Point estimate: Females do (slightly) better.  
Statistically: No significant performance differences

### Risk aversion and gender - the '08 crisis

Insider reactions to '08 fall in equity values

- buy stocks to rebalance portfolios.
- higher potential for inside view to differ from consensus view (increase inside holdings if positive view).

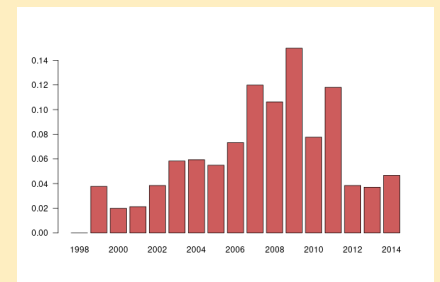
Risk aversion's influence on this decision  
More risk averse:

- Less equity in optimal portfolio
- Less willing to lower diversification to concentrate holdings in own company stocks.

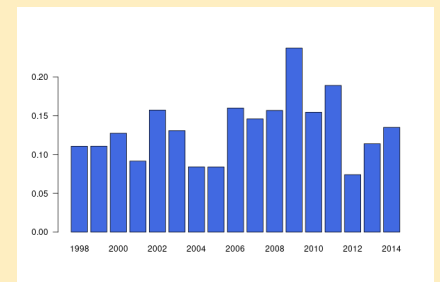
**Prediction** More risk averse individuals will buy less equity following the fall in stock values.

### Propensity to trade by directors

#### Females



#### Males



### Key takeaways

Gender based performance differences?

- Positive short term market reaction higher for male trades.
- No significant long term differences

Board reform: influx of female directors

- Market reacts *more positively* to inside trades by females after board reform.

Financial crisis and risk aversion

- Female insiders increase equity buying during crisis.
- Not consistent with female executives/directors being more risk averse than their male colleagues.