

Insider trading and gender

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Introduction

Why gender and inside?

Performance
differences?

Short-term (event) reaction

Norway's forced
board
gender-balancing

Long term performance

Risk aversion and
gender - the crisis

Conclusion

References

(Legal) trading by corporate insiders

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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

This investigation

Norway: All reported inside trades 1986–2016.
Split by gender.

Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

References

Fraction females among primary insider trades

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Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

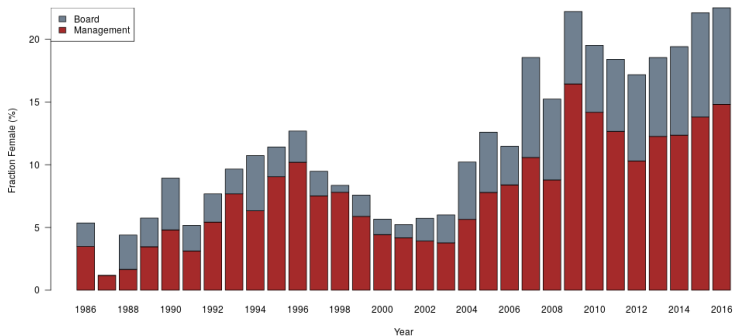
Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

References



Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

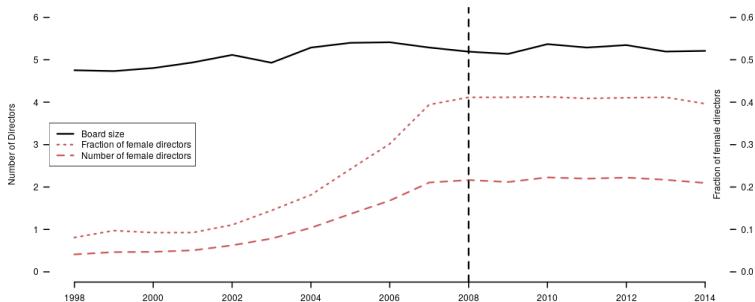
Conclusion

References

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-specific network
Board reform – Enforce a 40% minimum female representation on boards of all OSE listed companies. (Eckbo, Nygaard, and Thorburn, 2021)

Fraction females on board



Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

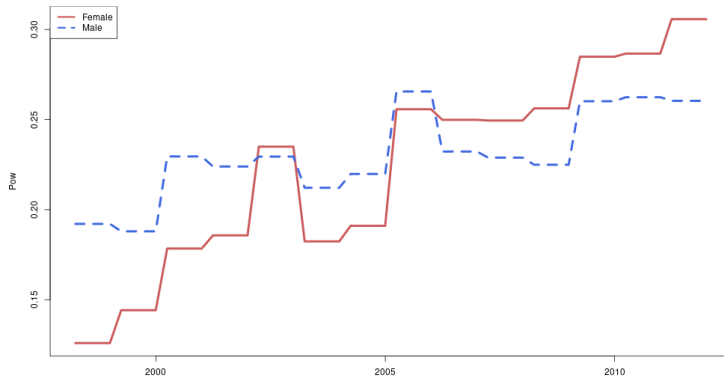
References

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Board Network

Measure of quality of *network* among board members.



Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

References

Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

References

Measure gender differences in

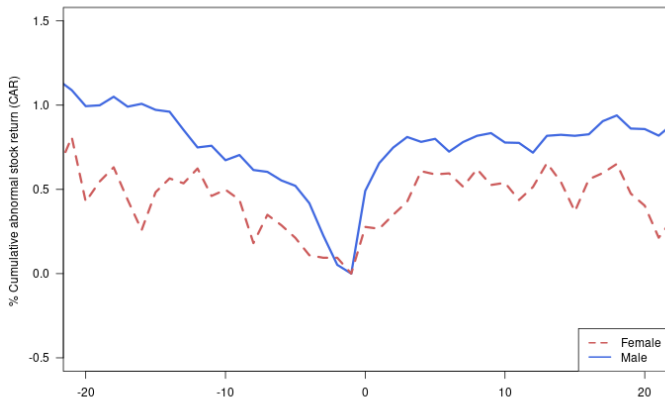
- ▶ Short term market *reaction* when insiders trade.
- ▶ Long term *performance* measuring the actual gains implied in insider's trading.

Gender differences in short term market reaction

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Stock price reaction to announced insider trades reflect

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



Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

References

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Method: Event study

Market reaction (CAR): Dummy D in

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

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

A: Female Insiders

CAR	0.012*** (0.001)	0.014*** (0.001)	0.007 (0.0004)	0.005 (0.0003)
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B: Male Insiders

CAR	0.015*** (0.001)	0.014** (0.001)	-0.001 (0.001)	-0.016 (0.0004)
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Event Study Results

Market reaction to female lower than male trades.

Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

References

Consequences of influx of female directors

Event Study of insider trades: Is the market reaction to female trades larger as the female network increases?

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

Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

References

Construct portfolio incorporating information in insider trades

Match aggregate portfolio of insiders

- Ownership weights

$$\omega_{it}^{ow} \equiv (s_{it}/S_{it}) / \sum_{i=1}^{N_t} (s_{it}/S_{it})$$

(s : insiders \neq shares, S shares outstanding)

- Value weights

$$\omega_{it}^{vw} \equiv h_{it} / \sum_{i=1}^{N_t} h_{it}$$

(insider holding $h = p \cdot s$, where p is stock price)

→ Monthly series of portfolio weights.

Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

References

Performance evaluation

- ▶ Returns-based evaluation → “Alpha”

$$\alpha_{pt}^{4f} \equiv r_{pt}^e - [\hat{\beta}_p^m RMRF_t + \hat{b}_p^2 SMB_t + \hat{b}_p^3 HML_t + \hat{b}_p^3 MOM_t]$$

- ▶ Holdings-based evaluation
 - ▶ Do changes in (inside) portfolio predict performance?

$$HM = \frac{1}{T-2} \sum_{t=2}^T \frac{1}{N_t} \left(\sum_{t=1}^{N_t} Cov(\Delta w_{it}, (r_{i,t+\tau} - E[r_{i,t+\tau}])) \right)$$

Results of long term performance comparison

Point estimate: Females do (slightly) better.

Statistically: No significant performance differences

Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

References

Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

References

Gender differences in risk aversion?

In general

- ▶ Females more risk-averse than males (experimental studies) (Croson and Gneezy, 2009; Eckel and Grossman, 2008; Sapienza, Zingales, and Maestripieri, 2009)

However, female *executives/directors* not a random sample:

- ▶ Female executives and directors are, if anything, *less* risk averse than their male counterparts. (Adams and Funk, 2012)

Insider reactions to '08 fall in equity values

1. → buy stocks to rebalance portfolios.
2. → 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:

1. → Less equity in optimal portfolio
2. → 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.

Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

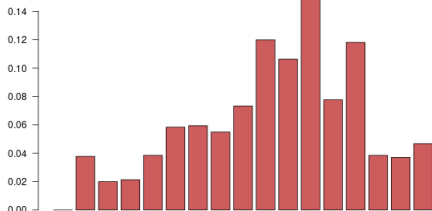
Risk aversion and gender - the crisis

Conclusion

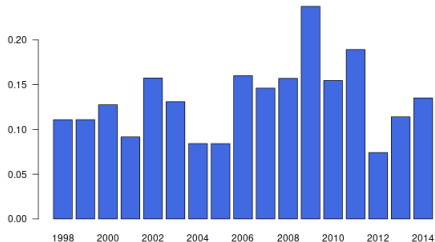
References

Probability of a trade among directors

Females



Males



Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

References

Gender based performance differences?

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

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.

Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

References

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Introduction

Why gender and inside?

Performance differences?

Short-term (event) reaction

Norway's forced board gender-balancing

Long term performance

Risk aversion and gender - the crisis

Conclusion

References