

Internet Appendix to Board gender-balancing, network information, and insider trading

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1 Board network among public firms

This section complements the paper section 2.2.

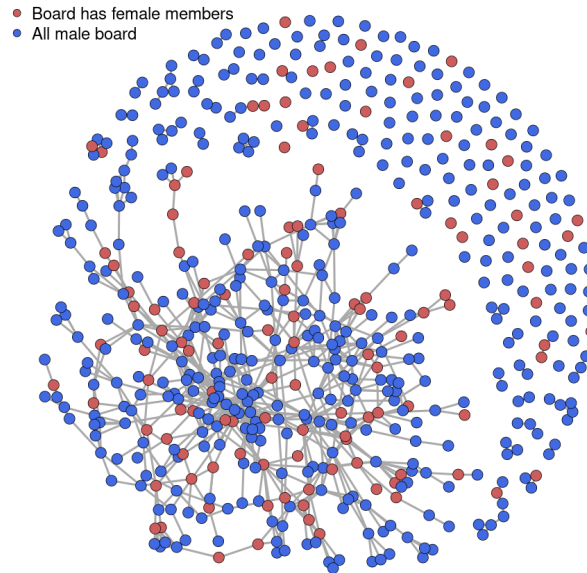
Figure **IA.1** uses all public (ASA) companies to construct the board networks, not just the listed firms used to construct Figure 2 in the paper.

Figure IA.2 below shows the distribution of the number of boards each director sits on, for all public (ASA) firm. The paper Figure 1.B shows a similar picture, but only for listed firms.

Figure IA.1: Evolution of board network links and gender composition - ASA firms

The figure illustrates the network structure of the boards of Norwegian public (ASA) companies. Each node is a company board. A link (line) between two boards indicates that at least one director sits on both boards. Solid (red) dots are companies with at least one female on the board, while grey (blue) dots represent all-male boards. Plot produced using the R library *igraph* (Csardi and Nepusz, 2006). Board data are from the national *Brønnøysund Registry Centre*, 1998-2016.

Year 2002



Year 2008

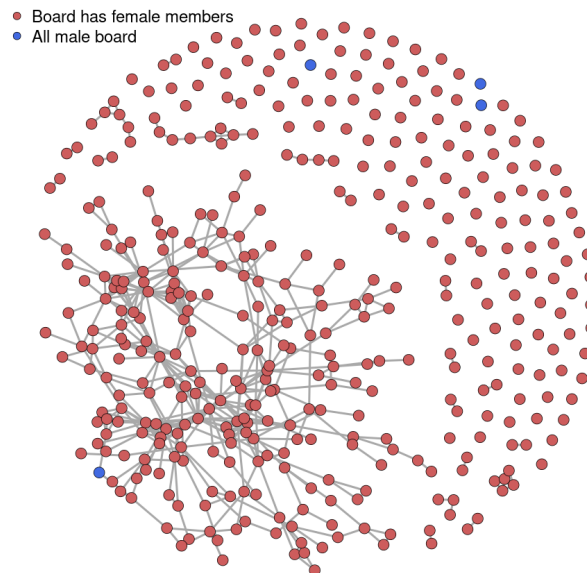
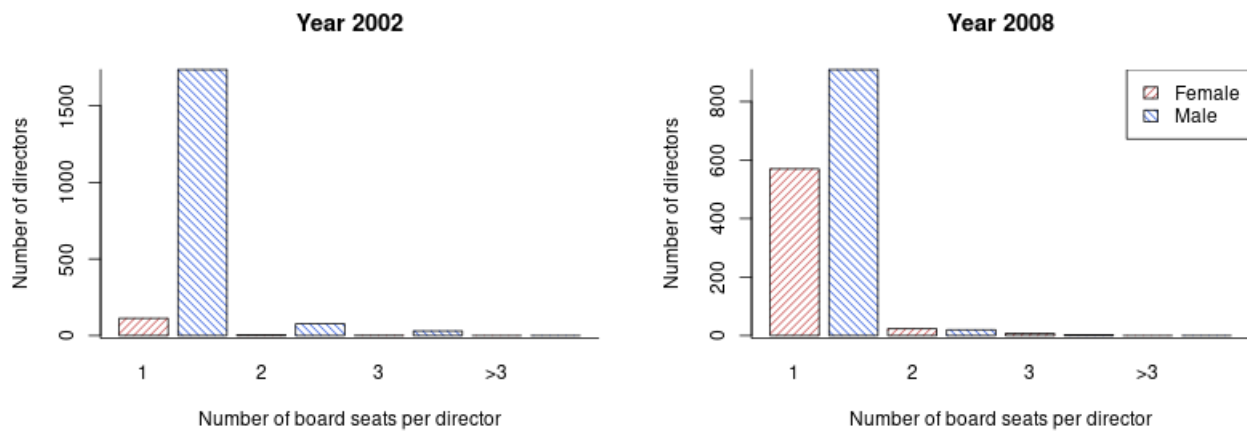


Figure IA.2: Number of board seats held by male and female directors in 2002 and 2008 - ASA firms

The distribution of the number of directorships in public (ASA) companies held by individual male and female directors in years 2002 and 2008, respectively. Board data are from the national *Brønnøysund Registry Centre*, 1998-2016.



2 Insider trades, additional descriptives

This section complements Section 2.4 of the paper. Table IA.1 shows the same descriptives as Table 1 in the paper, but calculated separately for the two subperiods 1997–2007 and 2008–2016.

Tables IA.2 and IA.3 breaks descriptives down by year.

Table IA.1: Insider trades before and after quota compliance (1997–2007 v. 2008–2016)

The tables provided describe the insider sample for the two periods 1997–2007 and 2008–2016. In Panel A, the number of distinct insiders is the number of primary insiders with transactions (excluding insiders who never transact). Panel B characterizes insider trading on an individual trader basis, using the insiders’ trading history. The trading history begins with the first reported trade and ends with the last reported trade. We first compute the annual number of trades and trade values for each insider, and then form the sample period average for each insider (including years without trades). Panel B then reports the averages of these per insider averages. All values are in constant 2016 kroner (NOK) using the consumer price index supplied by the Norwegian Bureau of Statistics (SSB). Data only for primary insiders.

A: Transaction totals and averages

	Primary Insiders							
	1997–2007				2008–2016			
	Total	Male	Female	Female(%)	Total	Male	Female	Female(%)
Number of distinct insiders	3394	3059	335	9.9	2913	2612	640	22.0
Total transaction value (million)								
Buys	45438	45229	208	0.5	9787	9261	526	5.4
Sells	54892	54235	657	1.2	5522	4995	528	9.6
Number of transactions								
Buys	5935	5512	423	7.1	6688	5665	1023	15.3
Sells	2397	2265	132	5.5	983	857	126	12.8
Average transaction (1,000)								
Buys	7656	8206	493		1463	1635	514	
Sells	22900	23945	4978		5618	5828	4187	
Median transaction (1,000)								
Buys	138	147	56		127	144	82	
Sells	742	793	168		505	611	195	

B: Individual insiders’ trading frequency and intensity

	Primary insiders					
	1997–2007			2008–2016		
	All	Female	Male	All	Female	Male
Number of trades in year						
Buys	1.29	1.23	1.29	1.27	1.16	1.30
Sells	1.16	1.08	1.17	1.15	1.09	1.16
Annual transaction value (thousands)						
Buys	7529	698	8273	1725	613	1995
Sells	29795	6266	31652	5704	2107	6298

Table IA.2: Annual primary insider trades by gender and value, OSE 1997-2016

This table shows the annual distribution of the primary insider trades. Primary insiders are directors and executives. 100K means NOK 100.000.

Year	Primary Insider Purchases					Primary Insider Sales				
	Number of Transactions		% Female			Number of Transactions		% Female		
	<100K	>100K	Female	Male	by value	<100K	>100K	Female	Male	by value
1997	353	488	60	781	0.43	281	111	20	372	0.20
1998	187	230	21	398	0.05	87	28	7	108	0.10
1999	477	554	60	977	0.78	270	105	18	357	0.28
2000	277	270	20	529	0.15	218	34	13	239	14.24
2001	227	221	18	431	3.25	154	54	6	202	2.22
2002	261	286	24	523	0.12	69	43	3	109	0.01
2003	159	196	18	338	1.38	120	63	6	177	0.05
2004	149	168	25	294	0.26	123	38	15	146	0.59
2005	163	143	32	278	2.49	156	32	16	174	0.10
2006	306	156	41	424	0.32	223	26	15	235	0.69
2007	429	213	104	539	0.37	145	13	13	146	2.49
2008	345	275	84	538	7.31	61	15	3	73	0.04
2009	520	643	205	971	6.49	104	33	17	120	0.35
2010	487	531	162	866	14.50	98	31	14	115	3.00
2011	508	425	139	797	4.76	65	26	10	81	21.79
2012	314	191	66	440	1.45	80	24	17	87	14.17
2013	349	198	68	479	1.46	97	32	19	110	14.79
2014	402	247	91	559	2.77	96	35	20	111	25.61
2015	338	284	102	521	10.35	53	26	13	66	4.23
2016	295	302	106	494	10.37	69	38	13	94	2.39
All	6546	6021	1446	11177	1.47	2569	807	258	3122	2.09

Table IA.3: Annual primary insider trades by gender and position, OSE 1997-2016

This table shows the annual distribution of the primary insider trades. Primary insiders are directors and executives. 100K means NOK 100.000.

Year	Primary Insider Purchases				Primary Insider Sales			
	Female		Male		Female		Male	
	Mgmt	Board	Mgmt	Board	Mgmt	Board	Mgmt	Board
1997	42	18	523	258	13	7	228	144
1998	20	1	244	154	7	0	70	38
1999	40	20	618	359	14	4	241	116
2000	16	4	329	200	7	6	159	80
2001	13	5	261	170	4	2	123	79
2002	14	10	307	216	1	2	61	48
2003	7	11	195	143	5	1	111	66
2004	10	15	213	81	8	7	87	59
2005	16	16	171	107	8	8	113	61
2006	23	18	226	198	11	4	145	90
2007	45	59	348	191	8	5	99	47
2008	40	44	382	156	2	1	54	19
2009	136	69	662	309	10	7	79	41
2010	102	60	607	259	12	2	78	37
2011	84	55	557	240	6	4	63	18
2012	33	33	289	151	8	9	67	20
2013	39	29	253	226	5	14	61	49
2014	44	47	331	228	11	9	56	55
2015	49	53	310	211	7	6	41	25
2016	55	51	306	188	9	4	57	37
All	828	618	7132	4045	156	102	1993	1129

3 Event study whole period 1997–2016

Table IA.4 gives the results for the event study for the whole period 1997-2016, to complement Table 2 in the paper, which shows the results for the subperiods 1997–2007 and 2008–2016.

Table IA.4: Market reaction to insider purchases, 1997–2016

The table reports the cumulative abnormal abnormal stock return $CAR \equiv \tau\gamma$, where γ is the average daily abnormal return over τ days in event time centered on the day of insider purchases (day 0) and estimated using the following one-factor return-generating process for firm i :

$$r_{it}^e = a_i + b_i r_{mt}^e + \gamma_i D_{it} + \varepsilon_{it},$$

where r_{mt}^e is the return on the market portfolio in excess of the risk-free rate on day t , and D_{it} is a dummy variable that takes a value of one inside the event window and zero otherwise. There are four alternative event windows around day 0: days $(-1, 1)$, $(-1, 5)$, $(-1, 25)$, and $(-1, 50)$. The estimation in Panel A (Panel B) uses trades of primary female (male) insiders only. We remove routine trades as in Cohen, Malloy, and Pomorski (2012). Standard errors in brackets. Statistical significance is indicated by: *= $p < 0.1$, **= $p < 0.05$, ***= $p < 0.01$. Data on insider trades and holdings are from OSE electronic records (<https://newsweb.oslobors.no/>).

	Event windows for the cumulative abnormal return			
	$CAR(-1, 1)$	$CAR(-1, 5)$	$CAR(-1, 25)$	$CAR(-1, 50)$
A: Female Insiders				
CAR	0.012*** (0.001)	0.012*** (0.0008)	0.007 (0.0004)	0.003 (0.0003)
Observations	643,261	643,261	643,261	643,261
\bar{R}^2	0.030	0.030	0.030	0.030
B: Male Insiders				
CAR	0.014*** (0.001)	0.014*** (0.001)	0.003 (0.001)	-0.009 (0.0004)
Observations	1,013,513	1,013,513	1,013,513	1,013,513
\bar{R}^2	0.005	0.005	0.005	0.005

4 Performance analysis whole period 1997–2016

Table IA.5 gives holdings based performance analysis using the whole period 1997–2016, to complement the paper Table 4, which shows the same analysis for the two subperiods 1997–2007 and 2008–2016.

Table IA.5: Holdings-based primary insider performance, 1997–2016

Performance estimates using holdings-based performance evaluation. The three sets of portfolio weights are defined in Eqns. (XX) and (XY) in the text. The Insider-ownership-weight of firm i (columns 1-3) is the insiders' percentage ownership of firm i divided by the sum of the percentage insider holdings across all OSE firms. The Insider-value-weight (columns 4-6) of firm i is the value of insider holdings in i divided by the value of all insider holdings in all OSE firms. The holdings-based estimates are based on covariances between monthly changes in insider holdings (weights) and subsequent returns, as follows:

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

where Δw_{it} is the change in the weight of stock i in the insider portfolio from month $t-1$ to t , and $r_{i,t+T} - E[r_{i,t+T}]$ is the abnormal returns over the subsequent T months ($T = 1, 3, 6$). Δw_{it} is either the monthly change in insider holdings, $w_{it}^{ins} - w_{i,t-1}^{ins}$, or the monthly change in insider holdings relative to the firm's weight in the OSE market portfolio (a CAPM "buy and hold" weight). $E[r_{i,t+T}]$ is the predicted return using the Fama-French-Carhart risk factors estimated using five years of monthly data prior to time t . The columns labelled p(diff) report the p-value for the test of difference between the male and female portfolio performance metrics. The p-values are calculated using standard errors that are robust to autocorrelation. Standard errors are in brackets, with p-values indicated as: *=p<0.1, **=p<0.05, ***= p<0.01. Data on insider trades and holdings are from OSE electronic records (<https://newsweb.oslobors.no/>).

	Insider-ownership portfolio weights			Insider-value portfolio weights		
	Female	Male	p(diff)	Female	Male	p(diff)
	(1)	(2)	(3)	(4)	(5)	(6)
A: Short-lived insider information: one-month future return horizon ($T = 1$)						
<i>Δ_{it}: lagged insider portfolio weights</i>						
$cov(w_{it}^{ins} - w_{i,t-1}^{ins}; r_{i,t+1} - E[r_{i,t+1}])$	0.0010	0.0000	0.46	0.0007	0.0008	0.93
<i>Δ_{it}: market portfolio weights</i>						
$Cov(w_{it}^{ins} - w_{i,t-1}^m; r_{i,t+1} - E[r_{i,t+1}])$	0.0018	-0.0028	0.34	-0.0015	-0.0029	0.72
B; Intermediate-lived inside information: three-month future return horizon ($T = 3$)						
<i>Δ_{it}: lagged insider portfolio weights</i>						
$cov(w_{it}^{ins} - w_{i,t-1}^{ins}; r_{i,t+3} - E[r_{i,t+3}])$	0.0025	0.0003	0.31	0.0018	-0.0002	0.40
<i>Δ_{it}: market portfolio weights</i>						
$cov(w_{it}^{ins} - w_{i,t-1}^m; r_{i,t+3} - E[r_{i,t+3}])$	0.0030	-0.0058	0.48	-0.0079	-0.0092	0.92
C: Long-lived insider information: six-month future return horizon ($T = 6$)						
<i>Δ_{it}: lagged insider portfolio weights</i>						
$cov(w_{it}^{ins} - w_{i,t-1}^{ins}; r_{i,t+6} - E[r_{i,t+6}])$	0.0009	0.0002	0.70	0.0000	0.0003	0.95
<i>Δ_{it}: market portfolio weights</i>						
$cov(w_{it}^{ins} - w_{i,t-1}^m; r_{i,t+6} - E[r_{i,t+6}])$	-0.0009	-0.0048	0.84	-0.0215	-0.0139	0.73

Table IA.7 shows returns-based performance estimates using data for the whole period 1997–2016, to complement the paper table 5, which shows the same analysis for the two subperiod 1997–2007 and 2008–2016.

Table IA.6: Returns-based primary insider portfolio performance, 1997–2016.

The performance estimates reported in this table are based on monthly portfolio returns and rebalancing. The three sets of portfolio weights are defined in Eqns. (YY) and (YX) in the text. The Insider-ownership-weight of firm i (columns 1-3) is the insiders' percentage ownership of firm i divided by the sum of the percentage insider holdings across all OSE firms. The Insider-value-weight (columns 4-6) of firm i is the value of insider holdings in i divided by the value of all insider holdings in all OSE firms. The equally weighted "buy signal" portfolio contains stocks with insider buys in a previous period. The Male–female portfolio is long in male and short in female insider weights, respectively. In Panel A, Sharpe Ratio is $\text{mean}(r_p - r_f)/\text{sd}(r_p - r_f)$ and, for the long-short portfolio, $\text{mean}(r_p)/\text{sd}(r_p)$. The two performance metrics, α_p^{4f} in Panel B and α_p^{rb} in Panel C, are defined in the text. The first is the constant term in a four-factor Fama–French–Carhart regression, while the second is the average constant term in a rolling-beta CAPM regression. Standard errors are in brackets. Statistical significance indicated as *= $p < 0.1$, **= $p < 0.05$, ***= $p < 0.01$. Data on insider trades and holdings are from OSE electronic records (<https://newsweb.oslobors.no/>).

	Insider-ownership portfolio weights			Insider-value portfolio weights		
	Female (1)	Male (2)	Male– Female (3)	Female (4)	Male (5)	Male– Female (6)
A: Average raw returns and Sharpe Ratio						
$(1/N) \sum r_{pt}$	0.0116	0.0094	–0.0023	0.0099	0.0119	0.0020
$(1/N) \sum r_{pt}^e$	0.0085	0.0063		0.0068	0.0088	
Sharpe Ratio	0.0991	0.0930	–0.0259	0.0912	0.1133	0.0313
B: Four-factor alpha estimate						
α_p^{4f}	–0.001 (0.005)	–0.006** (0.003)	–0.008 (0.006)	–0.005 (0.004)	–0.004 (0.003)	–0.002 (0.004)
β_p^m	0.774*** (0.113)	1.142*** (0.055)	0.378*** (0.119)	1.063*** (0.076)	1.258*** (0.060)	0.204** (0.087)
b_p^{SMB}	0.217 (0.135)	0.088 (0.066)	–0.126 (0.142)	–0.014 (0.091)	–0.219*** (0.072)	–0.203* (0.104)
b_p^{HML}	0.304*** (0.110)	–0.042 (0.053)	–0.346*** (0.116)	–0.134* (0.074)	–0.163*** (0.059)	–0.029 (0.085)
b_p^{UMD}	0.081 (0.091)	–0.072 (0.044)	–0.148 (0.095)	0.025 (0.061)	0.002 (0.049)	–0.017 (0.070)
Observations	240	240	240	240	240	240
\bar{R}^2	0.158	0.674	0.098	0.493	0.703	0.039
C: Average rolling-beta CAPM estimate of alpha						
α_p^{rb}	0.0008 (0.0052)	–0.0038 (0.0026)	–0.0076 (0.0055)	–0.0036 (0.0054)	–0.0096*** (0.0031)	–0.0091 (0.0056)
$\bar{\beta}_p^{rb}$	0.6179	0.9916	0.3737	1.1551	1.4559	0.3009

Table IA.7: Returns-based primary insider portfolio performance, equal weights, 1997–2016.

The performance estimates reported in this table are based on monthly portfolio returns and rebalancing. The equally weighted “buy signal” portfolio contains stocks with insider buys in a previous period. The Male–female portfolio is long in male and short in female insider weights, respectively. In Panel A, Sharpe Ratio is $\text{mean}(r_p - r_f) / \text{sd}(r_p - r_f)$ and, for the long-short portfolio, $\text{mean}(r_p) / \text{sd}(r_p)$. The two performance metrics, α_p^{4f} in Panel B and α_p^{rb} in Panel C, are defined in the text. The first is the constant term in a four-factor Fama-French-Carhart regression, while the second is the average constant term in a rolling-beta CAPM regression. Standard errors are in brackets. Statistical significance indicated as $*=p<0.1$, $**=p<0.05$, $***=p<0.01$. Data on insider trades and holdings are from OSE electronic records (<https://newsweb.oslobors.no/>).

	Buy Signal portfolio weights		
	Female (1)	Male (2)	Male– Female (3)
A: Average raw returns and Sharpe Ratio			
$(1/N) \sum r_{pt}$	0.0381	0.0242	−0.0149
$(1/N) \sum r_{pt}^e$	0.0340	0.0211	
Sharpe Ratio	0.1593	0.2371	−0.0854
B: Four-factor alpha estimate			
α_p^{4f}	0.019 (0.015)	0.006 (0.004)	−0.017 (0.013)
β_p^m	1.309*** (0.312)	1.450*** (0.079)	0.176 (0.272)
b_p^{SMB}	0.241 (0.358)	0.223** (0.094)	−0.035 (0.313)
b_p^{HML}	−0.662** (0.299)	−0.033 (0.077)	0.664** (0.261)
b_p^{UMD}	0.029 (0.261)	−0.126** (0.064)	−0.131 (0.228)
	205	240	205
\bar{R}^2	0.108	0.612	0.016
C: Average rolling-beta CAPM estimate of alpha			
α_p^{rb}	0.0230 (0.014)	0.0097*** (0.0037)	−0.0164 (0.0123)
$\bar{\beta}_p^{rb}$	1.1078	1.0925	−0.0075

5 The Crisis Analysis

We complement the crisis analysis in section 5 of the paper with two additional sets of analysis. First we break the probit analysis of primary insiders into separate analyses of directors and executives. Second we introduce alternative measures of propensity of insiders to trade, and investigate their behaviour during the financial crisis.

5.1 Propensity to trade – subgroups of primary insiders

The probit analysis in Table 7 of the paper is calculated using the trades of all primary insiders. In Table IA.8 we show the same analysis estimated separately for executive and director primary insiders.

Table IA.8: The likelihood of trades by primary insiders during the financial crisis

The table reports coefficient estimates in probit regressions of the likelihood of observing at least one insider trade in a given company. Estimated separately for gender using firm-quarter observations. In a given firm-quarter, the left-hand-side variable takes a value of one if there is an insider trade and zero otherwise. The explanatory variables include the indicator variable *Crisis*, which takes a value of one during the financial crisis period 2008:10–2010:12. The firm-level explanatory variables include the log of the *Market Capitalization* of the firm, stock *Volatility* (the quarterly volatility of the firm’s stock return), stock *Liquidity* (last quarter’s average daily quoted stock bid/ask spread), and stock *Beta* (estimated over the past 36 months). The regressions include industry fixed effects for the 10 GICS industry codes. The estimation period is 1998-2016. Statistical significance is indicated by p-values as follows: *= $p < 0.1$, **= $p < 0.05$, ***= $p < 0.01$.

Panel A: Directors

Insider trade among	Female Directors		Male Directors	
	Purchases	Sales	Purchases	Sales
Constant	-3.176*** (0.368)	-5.190*** (0.705)	-1.413*** (0.220)	-2.170*** (0.308)
Crisis	0.343*** (0.057)	-0.262 (0.174)	0.136*** (0.040)	-0.278*** (0.069)
Market Cap	0.061*** (0.016)	0.113*** (0.030)	0.007 (0.010)	0.019 (0.014)
Volatility	0.559 (0.481)	0.765 (0.570)	1.006*** (0.329)	0.823** (0.361)
Liquidity	-3.417*** (1.036)	-1.943 (2.178)	-2.085*** (0.539)	-2.550*** (0.794)
Beta	-0.110*** (0.041)	-0.037 (0.079)	-0.019 (0.023)	0.028 (0.030)
Industry Fixed Effects	Y	Y	Y	Y
Observations	14, 837	14, 837	14, 837	14, 837
<i>Note:</i>	* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$			

Panel B: Executives

Insider trade among	Female Directors		Male Directors	
	Purchases	Sales	Purchases	Sales
Constant	-4.248*** (0.353)	-3.397*** (0.629)	-2.038*** (0.202)	-2.630*** (0.266)
Crisis	0.459*** (0.054)	0.037 (0.113)	0.196*** (0.036)	-0.108** (0.053)
Market Cap	0.107*** (0.015)	0.059** (0.027)	0.050*** (0.009)	0.050*** (0.012)
Volatility	0.884** (0.423)	-0.303 (2.236)	0.694** (0.326)	0.887** (0.352)
Liquidity	-2.623*** (0.984)	-7.369*** (2.597)	-2.864*** (0.516)	-4.008*** (0.728)
Beta	-0.090** (0.040)	-0.188** (0.075)	-0.045** (0.022)	-0.013 (0.028)
Industry Fixed Effects	Y	Y	Y	Y
Observations	14, 837	14, 837	14, 837	14, 837
<i>Note:</i>	* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$			

5.2 Alternative measures of insider trading – crisis analysis

For purposes of robustness, we also estimate the effect of the financial crisis on the following two alternative measures of monthly aggregate insider trades, used previously by Lakonishok and Lee (2001) and Anginer, Donmez, Seyhun, and Zhang (2020):

$$Insider\ Direction_{it} = \frac{\sum_j Buy_{ijt} - \sum_j Sell_{ijt}}{\sum_j Buy_{ijt} + \sum_j Sell_{ijt}}, \quad (1)$$

where a Buy (Sell) is an indicator variable that takes a value of one if insider j in firm i has made a purchase (sale) in month t , and

$$Insider\ Shares_{it} = \frac{Shares\ Purchased_{it} - Shares\ Sold_{it}}{Shares\ Purchased_{it} + Shares\ Sold_{it}}, \quad (2)$$

where $Shares\ Purchased\ (Sold)_{it}$ is the total number of shares of company i purchased (sold) by insiders in month t . *Insider Direction* treats each insider trade equally, independent of the trade size, while *Insider Shares* gives more weight to larger trades in terms of the number of shares purchases or sold.

Figure IA.3 plots the fraction of companies at the OSE with positive *Insider Direction*, calculated separately for the trades of female and male insiders. The number of firms with a positive aggregate direction of inside trading clearly increases at the beginning of the crisis. This effect of the crisis is confirmed in Table IA.9, which reports coefficient estimates from panel regressions with either *Insider Direction_{it}* or *Insider Shares_{it}* as dependent variable. Again, the coefficient estimate for *Crisis* is positive and significant for both female and male insiders. Also as before, independent of gender, the coefficients indicate more insider trading in larger, more volatile, more liquid, and less risky firms.

Figure IA.3: Fraction of positive *Insider direction*, 1997–2016

The figure plots the quarterly fractions of OSE-listed firms with positive aggregate *Insider Direction*, where

$$Insider\ Direction_{i,t} = \frac{\sum_j Buy_{ijt} - \sum_j Sell_{ijt}}{\sum_j Buy_{ijt} + \sum_j Sell_{ijt}}.$$

Buy (Sell) is an indicator variable that takes a value of one if insider j in firm i has made a purchase (sale) in quarter t . Population data on insider trades and holdings are from OSE electronic records (<https://newsweb.oslobors.no/>).

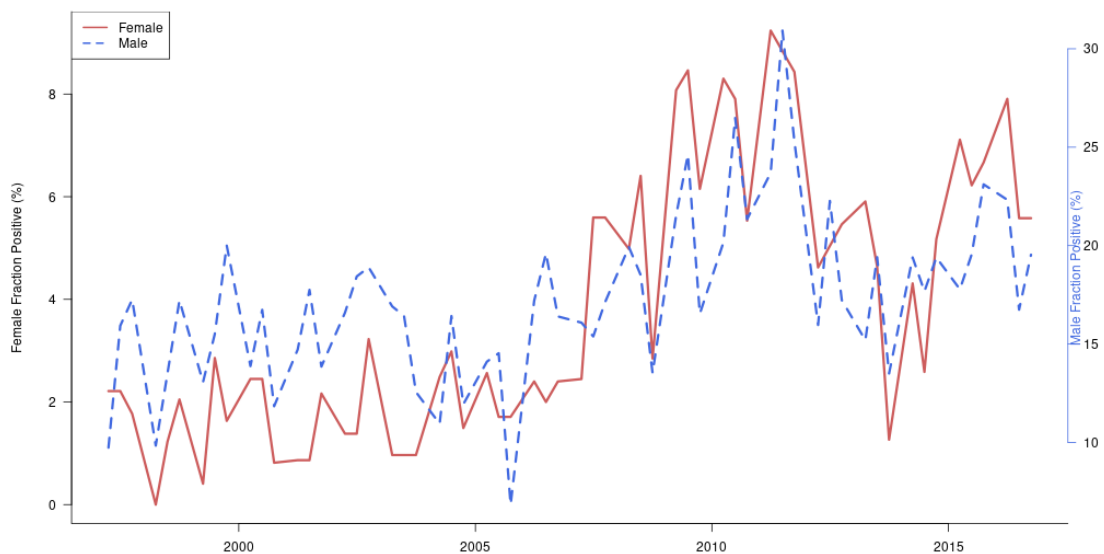


Table IA.9: Effect of financial crisis on two alternative measures of insider trades

The table reports coefficient in cross-sectional regressions with the following two alternative measures of monthly aggregate insider trade as dependent variable:

$$Insider\ Direction_{it} = \frac{\sum_j Buy_{ijt} - \sum_j Sell_{ijt}}{\sum_j Buy_{ijt} + \sum_j Sell_{ijt}}$$

where Buy (Sell) is an indicator variable that takes a value of one if insider j in firm i has made a purchase (sale) in month t , and

$$Insider\ Shares_{it} = \frac{Shares\ Purchased_{it} - Shares\ Sold_{it}}{Shares\ Purchased_{it} + Shares\ Sold_{it}}$$

where $Shares\ Purchased\ (Sold)_{it}$ is the total number of shares of company i purchased (sold) by insiders in month t . The explanatory variables include the indicator variable $Crisis$, which takes a value of one during the financial crisis period 2008:10–2010:12. The firm-level explanatory variables include the log of the *market capitalization* of the firm, stock *volatility* (the quarterly volatility of the firm’s stock return), stock *liquidity* (last quarter’s average daily quoted stock bid/ask spread), and stock *beta* (estimated over the past 36 months). The estimation period is 1998-2016. Standard errors in brackets. Statistical significance is indicated by p-values as follows: *= $p < 0.1$, **= $p < 0.05$, ***= $p < 0.01$. Data on insider trades and holdings are from OSE electronic records (<https://newsweb.oslobors.no/>).

	Alternative measures of insider trades			
	<i>Insider Direction</i>		<i>Insider Shares</i>	
	Female	Male	Female	Male
	(1)	(2)	(3)	(4)
Constant	−0.059*** (0.016)	0.026 (0.031)	−0.058*** (0.016)	0.032 (0.031)
Crisis	0.011*** (0.002)	0.012** (0.005)	0.011*** (0.002)	0.010** (0.005)
Market Capitalization	0.004*** (0.001)	0.002 (0.001)	0.003*** (0.001)	0.002 (0.001)
Volatility	0.067** (0.029)	0.120** (0.055)	0.067** (0.029)	0.120** (0.056)
Liquidity	−0.088** (0.039)	−0.273*** (0.074)	−0.092** (0.039)	−0.264*** (0.075)
Beta	−0.002 (0.002)	−0.003 (0.003)	−0.002 (0.002)	−0.003 (0.003)
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	24,143	24,143	24,143	24,143
\bar{R}^2	0.005	0.004	0.005	0.004

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