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Insider trading, Corporate Governance and Earnings Management

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Earnings management

Earnings management has long attracted the public interest and academic research effort since Healy (1985) documents that accruals can be used to manipulate managers' bonus income.

Earnings management is not an illegal activity to manipulate financial reports that do not reflect the firm's actual economic outcome

Corporate executives' intent to manipulate earnings to affect stock prices or meet analyst forecasts, as well as determine the factors influencing earnings management at the country-level.

- Leuz et al. (2003) and Bhattacharya et al. (2003)

Corporate governance practice have an influence over this lack of transparency and reliability

Insider trading

Many studies show that corporate insiders outperform all other market participants in their trading. have significant short and long-term selectivity skills, are consummate market timers, and are able to see through the noisy information content of major corporate announcements

- Ali, Wei and Zhou, 2011; Brochet, 2010; Cheng and Lo, 2006; Cheng, Nagar and Rajan, 2007; Fidrmuc, Goergen and Renneboog, 2006

Extant research in the area has led to the general view that corporate employees should be restricted from exploiting their informational advantage.

A number of possible objectives for insiders to manage reported earnings.

- avoid losses (Burgstahler and Dichev, 1997)
- meet analyst forecast (Degeorge et al., 1999)
- increase stock prices (Dechow et al., 1995)
- maximize compensation (Healy, 1985)
- achieve debt covenant (DeFond and Jiambalvo, 1994)

Insider trading and earnings quality

- Nue (1999): Insider trading may take place to modify reported earnings after observing innovation to earning
- Beneish and Vargus (2002): Earnings quality can be assessed by informative insider trading.
- Ke et al. (2002): Insider trading can indicate earnings quality.
- Jaggi and Tsui (2007): Earnings quality decrease, no matters the motivation of earnings management is.
- Baryeh et al. (2012: Firms with insider sale typically manage earnings more aggressively than firms with insider buy.

Insiders trade on their informational advantage of future firm performance as well as on other private information to anticipate stock prices in response to future corporate disclosures.

Earnings no longer truly reflect firm fundamentals and earnings management makes financial reports opaque. As a result, insider trading can be an alternative information source.

Main research question

- Is earnings management associated with insider trading and the mediating effect of corporate governance practice?

The Thai insider trading regulatory environment

Prohibitions on illegal insider trading are documented by the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET) in many forms.

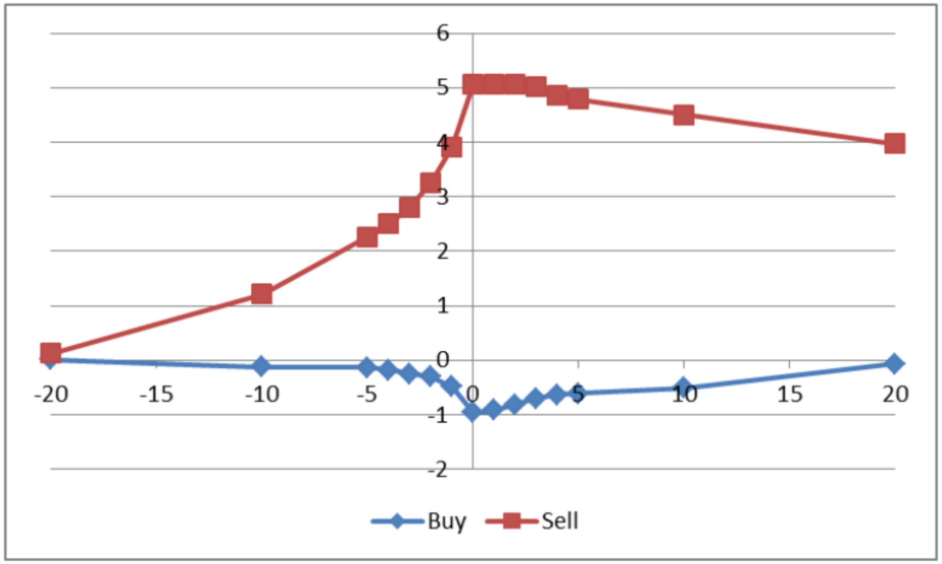
- The Securities and Exchange Act no. 241, the Codes of Best Practice for Directors of Listed Companies, the Principles of Security Regulations- no. 10 and 28, the Principles of Good Corporate Governance for Listed Companies, and the Guidelines on Disclosure of Information of Listed Companies- Section 3.6(2)

A company's directors are not allowed to trade during a period in which they are likely to be in receipt of important non-public information.

Regulations do not mandate the exact number of days before a corporate announcement

- SET recommends that "*Insiders should wait for at least twenty-four hours after the general publication is adequately disseminated.*
- SEC recommends that the report explain how the company monitors the directors' trading behavior and how the company punishes its directors who use inside information on trading, especially in the one-month period prior to the disclosure of a financial statement.

Insider trading around Earnings Announcements in SET (Budsaratragoon, Lhaopadchan, Hillier; 2012)



- Insiders earn abnormal returns from their trades most time of the year.
- Corporate executives are skilled at timing the market with their personal trading activity and are contrarian in nature.
- They are regular participants in the market and enhance the information quality of their firm's stock price.

Literature Review

Signaling theory

- Insider trading can convey private information about a firm's prospects to the market
- Kabir and Vermaelen (1996), Garfinkel (1997), Bettis et al. (2000), Fredereich et al. (2002), Hauser et al. (2003), Darrough and Rangan (2005), Barron et al. (2005), Louis and White (2007), and Prentice and Donelson (2010)

Earnings management and insider trading

- A firm's accruals are of high or low quality can be reflected by the contemporaneous insider trading
- Beneish and Vargus (2002) and Tang et al. (2012)

Long-term View

Manager will hold more (less) shares when they manage earnings higher (lower)

Short-term View

When insiders intend to buy (sell), they manage earnings to a worse (better) performance to send a negative (positive) signal to the market

The role of corporate governance on earnings management

Board composition of non-executive directors will be a factor of better monitoring effectiveness (Vafeas, 2000; Xei et al., 2003)

Non-executive directors may not act as good monitors if they have other directorship that compete for their time or if they have limited time to devote to company (Luan and Tang, 2007; Peasnell et al., 2005; Tosi et al., 2003)

Family involvement on board may lead to higher earnings management (Varma et al., 2009)

No significant relationship between CEO duality and earnings management (Bugshan, 2005; Cornet et al., 2006; Rahman and Ali, 2007; Meca and Ballesta, 2009)

Discretionary accruals in companies audited by big 4 firms have less discretionary accruals than others (Balsam et al. , 2003; Siregar and Utama, 2008; Teoh and Wong , 1993)

H1: Abnormal insider buying (selling) is associated with upward (downward) adjustment on discretionary accruals.

H2: Insider gains in high adjustment of discretionary accruals are higher than insider gains in low adjustment of discretionary accruals.

H3: Returns of hedge portfolio conditioned on insider trading in line with its right signal on earnings management to the market are positive.

H4: Corporate governance practices have a positive (negative) impact on earnings management adjustment in firms with insider purchase (sale).

Sample

- Period 2002 to 2011
- Analyzed separately between non-financial firms and financial firms due to different regulatory regimes.

Data sources

- Corporate governance data: Manually collected from Form 56-1
- Corporate executive trading data : Both manually collected and downloaded Form 59-2 from SEC website
- Accounting and financial data: Datastream

Filtering rules to ensure that the sample of insider trades is not confounded by exogenous corporate events and poor data characteristics.

- Transaction includes equity transactions in publicly traded only.
- Omit all transactions that are related to warrant and option exercise.
- Must have accounting and financial data.

Examine characteristics of insider trading in Thailand

Relate insider trading behavior with firm characteristics, firm performance, corporate governance and earnings management

Examine the impact of insider trading and corporate governance on earnings management

Analyze portfolio performance based on insider trading and earnings management

$$NST_i = \sum\left(\frac{SharesPurchased_i}{SharesOutstanding_i}\right) - \sum\left(\frac{SharesSold_i}{SharesOutstanding_i}\right)$$

Abbuy is the firm that has NST greater than zero and the median of all buying firms in year i.
Absell is the firm that has NST less than zero and the median of all selling firms in year i.

Discretionary accrual estimation (DACCR)	Jones (1991) $\mathrm{ACCR_{it}} = \beta_0 + \beta_1 \Delta \mathrm{REV_{it}} + \beta_2 \mathrm{PPE_{it}} + \varepsilon_{it}$
	Dechow et al. (1995) $\mathrm{ACCR_{it}} = \beta_0 + \beta_1 (\Delta \mathrm{REV_{it}} - \Delta \mathrm{REC_{it}}) + \beta_2 \mathrm{PPE_{it}} + \varepsilon_{it}$
	Kasznik (1999) $\mathrm{ACCR_{it}} = \beta_0 + \beta_1 (\Delta \mathrm{REV_{it}} - \Delta \mathrm{REC_{it}}) + \beta_2 \mathrm{PPE_{it}} + \beta_3 \Delta \mathrm{CFO_{it}} + \varepsilon_{it}$

$$DACCR = \beta_0 + \beta_1 \ln mv + \beta_2 td\_ta + \beta_3 rroa + \beta_4 abbuy$$
$$+ \beta_6 \ln bsize + \beta_7 daudit\_big4 + \beta_8 ptned + \beta_9 ptfn\exp + \beta_{10} split$$
$$+ \beta_{11} dfamfirm$$

$$DACCR = \beta_0 + \beta_1 \ln mv + \beta_2 td\_ta + \beta_3 rroa + \beta_5 absell$$
$$+ \beta_6 \ln bsize + \beta_7 daudit\_big4 + \beta_8 ptned + \beta_9 ptfn\exp + \beta_{10} split$$
$$+ \beta_{11} dfamfirm$$

$$R_{hp,t} = \alpha_p + \beta_p \left(R_{m,t} - R_{f,t} \right) + \delta_p SMB_t + \upsilon_p HML_t + \varepsilon_t$$

Classify the firms in our sample into 10 groups by discretionary accruals.

- The bottom three deciles are defined as low discretionary accruals group
- The top three deciles are defined as high discretionary accruals group.

Construct hedged portfolio:

- Long firms with insider purchase & short firms with insider sale
- Long high opaque firms with insider trading signal & short low opaque firms with insider trading signal

	Purchase	Sells
High DACC	Signaling	
Low DACC		Signaling

Sample distribution

Year	Full			Non-financial			Financial		
	No. of firm-years	Firm-years with ins	%	No. of firm-years	Firm-years with ins	%	No. of firm-years	Firm-years with ins	%
2002	464	120	25.86%	336	95	28.27%	128	25	19.53%
2003	464	166	35.78%	336	122	36.31%	128	44	34.38%
2004	464	150	32.33%	336	105	31.25%	128	45	35.16%
2005	464	157	33.84%	336	115	34.23%	128	42	32.81%
2006	464	165	35.56%	336	120	35.71%	128	45	35.16%
2007	466	131	28.11%	338	100	29.59%	128	31	24.22%
2008	466	144	30.90%	338	112	33.14%	128	32	25.00%
2009	468	136	29.06%	338	109	32.25%	130	27	20.77%
2010	467	176	37.69%	337	138	40.95%	130	38	29.23%
2011	473	179	37.84%	337	140	41.54%	136	39	28.68%
Total no. of firm-years	4660	1524	32.70%	3368	1156	34.32%	1292	368	28.48%
No. of firms	474	354	74.68%	338	278	82.25%	136	76	55.88%

Descriptive statistics of insider transactions

	Purchases			Sales		
	Full	Non-financial	Financial	Full	Non-financial	Financial
Tnumber	1,468,790.00	486,196.20	4,531,211.00	1,655,811.00	1,771,303.00	1,300,872.00
	25,000.00	20,000.00	50,000.00	18,000.00	13,750.00	21,700.00
Tprice	34.25	37.02	26.14	41.36	47.69	22.99
	12.62	14.70	9.30	13.50	14.10	12.67
Tvalue	4,572,522.00	4,143,211.00	5,961,385.00	5,987,585.00	6,566,836.00	4,030,197.00
	320,000.00	316,500.00	332,150.00	300,000.00	292,500.00	340,000.00
MV	26,487.85	30,052.65	15,814.33	56,183.55	68,342.59	20,776.68
	3,063.88	2,696.57	3,688.46	6,947.32	7,783.71	5,856.81

Summary statistics of net shares traded by insider trading

	Non-financial				Financial			
	nst	no.of firms	no.of firms	no.of firms	nst	no.of firms	no.of firms	no.of firms
		nst > 0	nst < 0	nst = 0		nst > 0	nst < 0	nst = 0
2002	0.2649	45	0	95	-0.374	11	0	25
	0.0021				0.0013			
2003	-0.4827	40	82	0	-1.0068	17	27	0
	-0.0396				-0.0092			
2004	0.0428	65	39	1	0.1683	26	19	0
	0.0058				0.0051			
2005	0.121	54	57	4	-0.1418	17	24	1
	0				-0.0024			
2006	-0.4627	59	59	2	-0.3256	14	30	1
	0				-0.0097			
2007	-2.585	0	100	0	-1.5234	0	31	0
	-0.0001				-0.0001			
2008	-1.221	0	112	0	-0.368	0	32	0
	-0.0002				-0.0002			
2009	-1.2833	5	104	0	-1.4787	1	26	0
	-0.0001				-0.0002			
2010	0.5323	58	77	3	0.697	19	17	2
	-0.007				0.0001			
2011	-0.5023	69	67	4	-0.4608	15	24	0
	0				-0.032			

Firm characteristics, firm performance, corporate governance and net shares traded by abnormal insider trading

	Non-financial					Financial				
	Full	Abbuy	Absell	Normal		Full	Abbuy	Absell	Normal	
rroa	0.1036	0.1146	0.1039	0.1187		0.0676	0.0832	0.0892	0.0716	
	0.0912	0.1106	0.1024	0.1064		0.0578	0.0681	0.0788	0.0613	
uroa_jones	0.1284	0.1302	0.1253	0.1454	*	0.0539	0.0694	0.0778	0.0572	
	0.1166	0.1233	0.128	0.139		0.0398	0.067	0.0685	0.0343	
uroa_dss	0.1285	0.1344	0.1265	0.1453	*	0.0569	0.0671	0.0754	0.0752	
	0.1152	0.124	0.1307	0.1356		0.0467	0.0521	0.0687	0.068	
uroa_kasz	0.1287	0.1373	0.124	0.1452	*	0.0583	0.0777	0.0759	0.0753	
	0.116	0.1252	0.1242	0.1352		0.0467	0.0646	0.0564	0.0713	
fage	12.8254	12.1582	11.5203	12.9792	*	11.6143	12.9821	11.0789	14.732	*
	13	12	12	12		11	13	10	14	
mv	12608.75	4537.182	7437.16	37962.38	*	12529.4	12007.33	7021.687	30308.63	*
	1560	1589	1767.5	5164.29		2140	2502.46	3447.67	5790.265	
td_ta	0.2595	0.2475	0.2588	0.2633		0.2622	0.2314	0.2935	0.2448	
	0.2179	0.2381	0.2248	0.2546		0.2131	0.2233	0.2786	0.1782	
mtbv	1.34	1.5739	1.7401	1.4367		1.2843	1.1984	1.5058	1.5018	
	1.08	1.205	1.37	1.42		0.95	0.91	1.12	1.22	

	Non-financial					Financial				
	Full	Abbuy	Absell	Normal		Full	Abbuy	Absell	Normal	
bsize	10.7701	11.0311	10.3693	11.8107	*	10.2245	10.7297	10.7079	10.9758	
	11	11	10	12		10	10	11	11	
ptned	0.3705	0.3444	0.3862	0.3738	*	0.4046	0.3663	0.403	0.3895	
	0.3333	0.3333	0.375	0.3333		0.375	0.3333	0.375	0.3636	
ptfnexp	0.267	0.2266	0.2938	0.2682	*	0.4065	0.2929	0.3477	0.3908	
	0.2143	0.1667	0.25	0.2222		0.4	0.2222	0.3	0.3333	
split	0.7438	0.6825	0.7759	0.8273	*	0.7423	0.7297	0.7701	0.7984	
	1	1	1	1		1	1	1	1	
pt_diown	20.6425	26.0134	24.0928	15.0815	*	19.4152	20.8425	20.3846	36.5922	
	12.02	21.305	20.135	4.58		6.19	16.45	14.17	5	
pt_famown 1	36.6567	36.3323	33.9585	35.6154		29.716	28.4051	29.4776	28.52	
	34.96	36.79	33.84	34.78		24.898	24.5	25.655	24.89	
ddr_fam1	0.8931	0.9215	0.8886	0.898		0.7785	0.8462	0.8857	0.874	
	1	1	1	1		1	1	1	1	
dum_mls	0.6298	0.7592	0.6686	0.4921	*	0.5431	0.5	0.581	0.4409	
	1	1	1	0		1	0.5	1	0	
dfamfirm	0.6354	0.6387	0.5894	0.6213		0.4446	0.4808	0.4952	0.4646	
	1	1	1	1		0	0	0	0	
no_aud	2.3955	2.399	2.3277	2.3107		2.0885	1.9459	2.0337	1.9919	
	3	3	3	3		3	2	2	3	
daudit_big 4	0.5492	0.5771	0.6006	0.6429		0.6224	0.8571	0.5488	0.7311	*
	1	1	1	1		1	1	1	1	

Abnormal insider trading and discretionary accruals

	Purchases						Sales					
	Non-financial			Financial			Non-financial			Financial		
	Normal	Abbuy		Normal	Abbuy		Normal	Absell		Normal	Absell	
dacc_jones	-0.0211	-0.016		0.0218	0.0241		-0.0299	-0.0213	*	0.0212	0.0165	
	-0.0257	-0.0196		0.0245	0.022		-0.0332	-0.0252		0.0238	0.0208	
dacc_dss	-0.019	-0.0199		0.0299	0.0279		-0.0309	-0.0225	*	0.0202	0.0195	
	-0.0218	-0.0213		0.025	0.017		-0.0323	-0.0251		0.0227	0.0227	
dacc_kasz	-0.0172	-0.0226		0.0269	0.0174		-0.0318	-0.02	*	0.0216	0.018	
	-0.0204	-0.0261		0.0257	0.0137		-0.0348	-0.0274		0.0177	0.0188	

Regression results of earnings management, insider trading and corporate governance

	Non-financial		Financial	
	Purchases	Sells	Purchases	Sells
Intercept	-0.0234	-0.0448	0.0780	0.0936
	(-1.06)	(-3.10)	(2.30)	(2.43)
lnmv	0.0007	0.0018	0.0010	-0.0003
	(0.55)	(2.04)	(0.44)	(-0.13)
td_ta	0.0213	0.0167	0.0104	0.0110
	(2.79)	(2.88)	(0.75)	(0.76)
rroa	-0.0060	-0.0070	0.0769	0.0846
	(-0.39)	(-0.72)	(2.49)	(2.12)
abbuy	0.0026		0.0177	
	(0.84)		(2.44)	
absell		-0.0009		0.0190
		(-0.37)		(3.17)
lnbsize	0.0143	0.0217	0.0133	-0.0383
	(1.97)	(3.85)	(2.50)	(-2.45)
daudit_big4	0.0050	0.0002	-0.0295	0.0013
	(1.50)	(0.06)	(-2.11)	(0.20)
ptned	0.0159	0.0263	-0.0022	0.0039
	(0.91)	(3.53)	(-0.37)	(0.20)
ptfnexp	0.0016	-0.0013	-0.0025	0.0070
	(0.25)	(-0.26)	(-0.13)	(0.69)
split	-0.0002	-0.0006	0.0091	0.0060
	(-0.07)	(-0.20)	(1.02)	(0.85)
dfamfirm	-0.0000	0.0040	-0.0012	0.0078
	(0.00)	(1.57)	(-0.20)	(1.28)
Adj r-square	0.0690	0.0965	0.1484	0.1865

Insider exploitation of asymmetric information as characterized by earnings management measures

	Purchases			Sells		
	Mean	Median		Mean	Median	
A. Univariate Returns						
No condition	0.1962	0.165	*	0.1114	0.0889	*
High DACC (> median)						
dacc_jones	0.2227	0.1886	*	0.1325	0.109	*
dacc_dss	0.2015	0.1668	*	0.1243	0.093	*
dacc_kasz	0.2239	0.1771	*	0.1178	0.0903	*
Low DACC (< median)						
dacc_jones	0.1733	0.1427	*	0.0925	0.0746	*
dacc_dss	0.1974	0.1625	*	0.1077	0.0844	*
dacc_kasz	0.1756	0.1542	*	0.1116	0.0857	*

B. Three-factor model returns		
Insider with net purchase - Insider with net sell	-0.03994	
Insider with net purchase & high DACC - Insider with net sell & low DACC		
dacc_jones	-0.03027	
dacc_dss	-0.03992	
dacc_kasz	-0.03914	

Key findings

- Firms with abnormal insider trading have different firm characteristics, firm performance and corporate governance from firms without abnormal insider trading.
- Discretionary accruals are generally in downward trend in non-financial firms, but in upward trend in financial firms irrespective of abnormal insider trading behavior.
- Abnormal insider trading does not affect the upward/downward adjustment on discretionary accruals in non-financial firms
- An association between abnormal insider trading and upward discretionary accruals in financial firms
- Hedge portfolios that use earnings management as the proxy for information asymmetries can offer positive returns, but become negative excess returns after risk adjustment.

Implications

- Although there is indication of information asymmetry in the market, the exploitation of this information disadvantage is not empirical evidence. Insider trading can serve as another information signal to the market
- In financial firms, earnings management is sophisticated. A further investigation will enhance the transparency.
- In non-financial firms
  - As the higher proportion of NED relates to the upward adjustment on earnings management in case of insider sale, suggesting an effort to improve NED's role and to evaluate the procedures for appointment of NED to ensure his/her independence and monitoring effectiveness of corporate board on controlling earnings management in non-financial firms.
  - As firm leverage in non-financial firms is positively associated with the upward adjustment on discretionary accruals, suggesting an awareness on earnings management to meet the covenants for outside investors in this kind of firms.