

IV 韓国セッション報告

Aggressive Earnings Management around IPOs and Involuntary Delisting in KOSDAQ

Moontae Kim
Chosun University

I . Introduction

This study is to examine the impact of aggressive earnings management in the before, during, and after period of initial public offerings (hereafter, 'IPO') on mandatory delisting firms listed in Korean Securities Dealers' Automated Quotation (hereafter, 'KOSDAQ').

Because firms can be benefited through IPO such as raising funds, enlarging stock price and reducing tax burdens, it's national that managers should have an incentive for IPO. Some researchers, however, have documented that IPOs have been associated with more earnings management to meet a necessary condition for the firm operating performances required by authorities (Teoh, Welch and Wong 1998; Kim et al. 2004; Kyoko and Toyohiko, 2007; Ball and Shivakumar, 2008).

KOSDAQ firms have more incentives for earnings management under the existing conditions of less tight financial disclosure system than Korea composite Stock Price Index (KOSPI) in Korea Exchange (KRX). However, if firms could not recover their

transiently enhancing earnings toward an intrinsic qualities, they would be faced with danger of insolvency resulted from cumulative loss. Moreover, in the case of KOSDAQ, there has been frequent examples that owners, managers and block-holders tend to commit moral hazards such as embezzlement or breach of trust, so it is necessary that ethical contemplation of delisting should be traced back to the IPO period on the financial reporting point of view, especially earnings management.

This study sets up a hypothesis that there is a positive relation between earnings management and delisting of IPO firms in KOSDAQ. To analyze this hypothesis, this study collects firms-year data on IPO firms. All the samples of IPOs are 910, which are consist of 670 listing and 240 delisting companies (DEL), selected from the KOSDAQ in the year 2000~2013. Earnings management is proxied by signed discretionary accruals (DA) estimated using a cross-sectional version of Kothari, Leone, Wasley (2005), representing the direction of earnings management. This is why firms may exercise opportunistically or

strategically earnings enhancement around IPO.

Main findings are simple and clear. In the case of IPO in KOSDAQ firms, the more they practice earnings management to exceed thresholds, the higher they meet danger of delisting. This means the degree of earnings management in the IPOs should impair with the quality of IPO, while the bad accounting quality of IPO is inversely related to future delisting risk.

This study connects the four factors of literature on KOSDAQ market, IPOs, earnings management and delisting possibilities. This study will contribute to presenting the basis of an argument to work out a scheme for policies and improving accounting transparency in IPO firms. Also, these results can be useful for the users of accounting in getting a line on delisting to minimize the potential losses with regard to earnings stabilities in IPO firms.

II . Literature Review and Hypothesis Development

Several studies have found evidence of earnings management surrounding an IPO, and the main reason of earnings management is related to raising capital funds. Teoh, Welch, and Wong (1998), Teoh, Wong, and Rao (1998), and Erickson and Wang (1999) report that enhanced earnings prior to IPOs would related to seasoned equity offers and stock financed acquisitions. Teoh, Wong, and Rao (1998) also provide evidence of a subsequent reversal of

unexpected accruals following IPOs and stock financed acquisitions. Healy and Wahlen (1999) conclude that some managers inflate reported earnings before public equity offers in order to influence investors' expectations of future performance and increase the offer price. Ball and Shivakumar (2008), however, show that the evidence reported by Teoh, Welch and Wong (1998) is unreliable for a variety of reasons, providing cleaner evidence, from samples of U.K. and U.S. IPO firms, which are conservative by several financial standards. Li and Zhou (2006) find that IPOs associated with aggressive earnings management are more likely to delist for performance failure, and tend to delist sooner. Furthermore, they show that IPO firms associated with conservative earnings management are more likely to be merged or acquired and they earn positive abnormal returns. Likewise, Kyoko and Toyohiko (2007) investigate whether the extent of earnings management has any impact on offer price in IPOs. Using a sample of 581 JASDAQ IPO firms, they find that offer price reflects earnings management to some extent. Firms with conservative earnings management tend to have higher offer prices, and firms managing earnings aggressively tend to be discounted when they fail to exhibit smooth earnings growth.

Yoon (2001) report that the KOSDAQ firms, as compared to the KRX (former days KSE, nowadays KOSPI) firms, increase accruals more heavily when operating cash flows are poor and decrease accruals more when operating cash flows are high. In other

words, the KOSDAQ firms more aggressively employ income-smoothing strategies than the KSE firms do. Lee, Park and Kim (2005) make clear the earnings management behavior of KOSDAQ IPO firms. The major findings of empirical tests are motivated at earnings management in newly going public by two reasons, raising the offering prices and satisfying qualifications in pre-going publics. Choi, Kwak and Baek (2010) also find that in spite of rapid expansion of the market in terms of capitalization, KOSDAQ firms mislead to frequent moral hazards such as embezzlement around IPOs. The result suggests that the privately-held companies have stronger incentives to manage earnings upward around their IPO time in the KOSDAQ market relative to their counterparts in the KRX, and/or the monitoring and checking mechanism exercised by underwriters and external auditors in the KOSDAQ might not be as effective as in the KRX market. Shon and Yum (2013) revealed that firms with a higher propensity of being delisted tend to manipulate earnings to avoid the delisting. Especially, they also find out that firms with a high risk of delisting tend to use real earnings management while accrual manipulation is more likely to be caught. In addition to, Kim (2014) shows that opportunistic block-holders dispose of their ownership using the inside information to pass their bad condition to the naive investors.

Earnings management is managers opportunistic or strategic decision itself, but

the fundamentals of the issuing firm may related to the delisting risk. If IPO firms cannot be recovered from earnings management toward positive performances in the long term, the issuing firms tend to have detrimental impact on shareholders, and they are faced with enforced withdrawing from the market. This means the degree of earnings management in the IPOs should impair with the true value of a firm, while the bad accounting quality of IPO is inversely related to future delisting risk, especially KOSDAQ. This study is to analyze the probability of compulsory delisting caused by earnings management around IPO, and the hypothesis is developed as:

Hypothesis: KOSDAQ Firms associated with upward earnings management in the IPO around are more likely to be compulsory delisted from the market.

III. Research Design

Earnings management is proxied by discretionary accruals (DA). DA represents the direction of earnings management. Since our hypothesis does not rely on the magnitude of the accrual adjustments, but the direction of accrual, test statistics are based on the signed value of the abnormal accrual (Warfield, Wild, and Wild, 1995). This is the reason why IPO issuers may adjust their earnings to enhance raising the offering prices and going public.

Discretionary accruals are estimated using a cross-sectional version of Kothari, Leone,

and Wasley (2005), as the following regression model:

$$DA = \frac{TA}{A_{t-1}} - [a_0 + a_1(\frac{1}{A_{t-1}}) + a_2(\frac{\Delta REV_{it} - \Delta AR_{it}}{A_{t-1}}) + a_3(\frac{PPE_{it}}{A_{it-1}}) + a_4 ROA_{it-1}] \quad (1)$$

where TA is total accruals (net income minus cash flow from operations), A_{t-1} is beginning total assets, ΔREV is the change in sales revenues, ΔREC is the change in accounts receivable, PPE is property, plant and equipment, and performance matching variables (ROA) are included. Subscript i and t is a firm for any time and $a_{0,1,2,3}$ is an

estimated coefficient, respectively. Consistent with other studies, DA is assumed to be the outcome of managers' opportunistic choices of accounting decisions. To test the hypothesis, the following regression models are specified:

$$DEL = \beta_0 + \beta_1 DA + \beta_2 SIZE + \beta_3 DEBT + \beta_4 LONG + \beta_5 BIG + \beta_6 BLOK + \beta_7 FOR + \beta_8 SCOR + \epsilon \quad (2)$$

DA: signed discretionary accruals estimated by Kothari et al.(2005) model,

SIZE: the natural logarithm of total assets,

DEBT: total liabilities to total assets,

LONG: the natural logarithm of listing days,

BIG: audit dummy, IPOs aligned with a foreign big audit company 1, otherwise 0,

BLOK: the ratios of block-holders' ownership,

FOR: the ratios of foreigners' ownership,

SCOR: KIS VALUE credit scores measured by NICE INFORMATION SERVICE

This is the logistic probit analyses conducted to test the hypothesis. All the variables are designed at the time IPO_{t-1} , IPO_t , and IPO_{t+1} . Main explanatory variables are DA, and the other control variables on the right-hand side of equation (2) are adopted by previous studies on delisting.

To analyze this hypothesis, this study collects firms-year data on IPO firms. All the

samples of IPO are 910, which are consist of 670 listing and 240 delisting companies (DEL) that contain 51 firms delisted by substantial investigation of compulsory or regulatory system for deteriorating disclosure qualities, selected from the KOSDAQ in the year 2000~2013⁽¹⁾.

<Table 1> Distribution of IPO and Delisting Samples

	IPO	Delisting	Continued Listing	Delisting percentage (%)
2000	147	63	84	42.86
2001	154	66	88	42.86
2002	141	48	93	34.04
2003	69	22	47	31.88
2004	46	11	35	23.91
2005	68	14	54	20.59
2006	52	11	41	21.15
2007	59	4	55	6.78
2008	5	0	5	0.00
2009	46	0	46	0.00
2010	50	1	49	2.00
2011	53	0	53	0.00
2012	20	0	20	0.00
2013				
Sum	910	240	670	26.37

IV. Empirical Results

4.1 Descriptive Statistics

Table 2 shows the descriptive statistics for the major research variables. Mean values of DA are near 0, and run getting higher gradually from IPO_{t-1} to IPO_{t+1} . The mean of SIZE is getting bigger after IPO, and DEBT

is elastic with the current of the times for IPO. LONG is, 605 calculated in terms of days. BIG shows IPO issuers are audited by big4 auditors. BLOK grows higher but lower, and foreign investors gradually extend their investment and ownership. But credit evaluation runs lower, suggesting that IPOs may fail to recover their intrinsic value.

<Table 2> Descriptive Statistics for Major Variables (n=910)

	IPO year t-1					IPO year t					IPO year t+1				
	Mean	S.D.	Min.	Mid.	Max.	Mean	S.D.	Min.	Mid.	Max.	Mean	S.D.	Min.	Mid.	Max.
DA	-0.008	0.22	-0.75	-0.02	0.74	-0.002	0.18	-0.90	-0.01	0.90	-0.01	0.13	-0.62	-0.01	0.77
SIZE	16.87	0.81	12.98	16.81	21.23	17.36	0.75	15.39	17.30	21.38	17.49	0.80	13.35	17.47	21.61
DEBT	0.42	0.17	0.04	0.43	0.88	0.32	0.17	0.01	0.30	0.99	0.38	0.37	0.02	0.34	8.87
LONG	7.87	0.59	5.24	8.04	8.54	7.87	0.59	5.24	8.04	8.54	7.87	0.59	5.24	8.04	8.54
BIG	0.60	0.49	0.00	1.00	1.00	0.57	0.49	0.00	1.00	1.00	0.51	0.50	0.00	1.00	1.00
BLOK	20.19	23.67	0	14.66	100	28.29	13.44	0	26.25	74.99	27.76	13.11	0	26.07	75.4
FOR	0.39	4.63	0.00	0.00	98.3	3.09	8.81	0.00	0.01	99.9	3.71	8.62	0.00	0.20	68.3
SCOR	69.68	11.02	0.00	70.0	96.5	68.65	12.21	0.00	70.0	98.0	62.00	17.42	0.00	64.5	97.0

DA: signed discretionary accruals estimated by Kothari et al.(2005) model,

SIZE: the natural logarithm of total assets,

DEBT: total liabilities to total assets,

LONG: the natural logarithm of listing days,

BIG: audit dummy, IPOs aligned with a foreign big audit company 1, otherwise 0,

BLOK: the ratios of block-holders' ownership,

FOR: the ratios of foreigners' ownership,

SCOR: KIS VALUE credit scores measured by NICE INFORMATION SERVICE

4.2 Correlation and Mean-Difference Analysis

Table 3 shows Pearson correlation coefficients between delisting (DEL) and the proxy of earnings management (DA) around IPO. The most noticeable point is that DEL is positively correlated to DA at the 1% significant level all the just pre or post IPO time. Table 4 examines the mean difference between two different groups of 670 listing and 240 delisting companies (DEL). The DA of DEL-group means for all the time are higher that of LISTING with statistical significance. All the above results show the

probabilities that earnings increasing management in the pre, just then or post IPO time will lead to the delisting.

<Table 3> Result of Correlation Tests by Pearson's Coefficients (n= 910)

	IPO year t-1		IPO year t		IPO year t+1	
	DEL	DA	DEL	DA	DEL	DA
DA	.256 .000		.180 .000		.100 .002	1
SIZE	-.215 .000	-.142 .000	-.203 .000	.050 .131	-.205 .000	.040 .228
DEBT	.118 .000	-.008 .815	.178 .000	.078 .018	.140 .000	.078 .018
LONG	-.133 .000	.018 .583	-.133 .000	-.084 .012	-.133 .000	.010 .759
BIG	-.136 .000	-.021 .530	-.104 .002	-.044 .181	-.119 .000	.015 .653
BLOK	-.134 .003	-.089 .052	-.080 .018	-.005 .880	-.145 .000	-.060 .071
FOR	.033 .320	.044 .185	.001 .978	.014 .677	-.022 .500	.078 .019
SCOR	-.134 .000	.012 .712	-.253 .000	-.076 .023	-.334 .000	.013 .690

DEL: only 1 delisted IPOs within the year 2000-2013 after 2000 IPOs,

DA: signed discretionary accruals estimated by Kothari et al.(2005) model,

SIZE: the natural logarithm of total assets,

DEBT: total liabilities to total assets,

LONG: the natural logarithm of listing days,

BIG: if a firm would be aligned with a foreign big audit company 1, otherwise 0,

BLOK: the ratios of block-holders' ownership,

FOR: the ratios of foreigners' ownership,

SCOR: KIS VALUE credit scores measured by NICE INFORMATION SERVICE

*All the cells are coefficients (above) and p value (below) for two-tailed tests.

<Table 4> The Results of Mean Differences

Panel A. IPO year t-1					
	LISTING (n=670)		DEL (n=240)		
	mean	s.d.	Mean	s.d.	t stat.
DA	-0.042	0.169	0.086	0.305	6.165 ***
SIZE	16.978	0.810	16.581	0.753	-6.865 ***
DEBT	0.408	0.167	0.454	0.182	3.430 ***
LONG	7.912	0.609	7.733	0.523	-4.349 ***
BIG	0.651	0.477	0.500	0.501	-4.000 ***
BLOK	39.646	19.391	33.456	17.863	-3.089 ***
FOR	0.298	3.752	0.646	6.514	0.783
SCOR	70.958	9.075	68.176	9.206	-4.021 ***
Panel B. IPO year t					
	LISTING (n=670)		DEL (n=240)		
	mean	s.d.	Mean	s.d.	t stat.
DA	-0.021	0.153	0.052	0.230	4.575 ***
SIZE	17.455	0.748	17.109	0.709	-6.397 ***
DEBT	0.302	0.161	0.371	0.191	5.019 ***
LONG	7.912	0.609	7.733	0.523	-4.349 ***
BIG	0.604	0.489	0.488	0.501	-3.123 ***
BLOK	29.508	13.243	27.166	11.812	-2.514 **
FOR	3.105	7.686	3.123	11.436	0.023
SCOR	70.761	10.273	64.535	11.238	-7.522 ***
Panel C. IPO year t+1					
	LISTING (n=670)		DEL (n=240)		
	mean	s.d.	mean	s.d.	t stat.
DA	-0.021	0.123	0.009	0.152	2.747 ***
SIZE	17.591	0.792	17.218	0.770	-6.396 ***
DEBT	0.350	0.382	0.466	0.309	4.705 ***
LONG	7.912	0.609	7.733	0.523	-4.349 ***

BIG	0.548	0.498	0.413	0.493	-3.635 ***
BLOK	29.246	13.021	25.021	11.600	-4.648 **
FOR	3.843	8.351	3.404	9.393	-0.639
SCOR	66.636	12.913	56.006	14.427	-10.019 ***

LISTING: continued firms after 2000 IPOs

The definition of other variables is the same as the above Table 2 and Table3.

***, and ** indicate that the means are significantly different at <.01 and <.05 levels for two-tailed tests.

4.3 Results of Logistic Regression Analysis

Table 5 is the result of possibilities of delisting owing to upward earnings management around IPO on delisting after controlling of other variables. The coefficients of DA are 2.45, 1.42, and 1.09, indicating earnings management to exceed thresholds affects delisting with statistical significance in the time around IPO. But with the current of the three diverse time, the effects of earnings enhancing

management on delisting are all different, and weakly fallen. This implies that the managers in IPO firms are involved in opportunistic financial reporting to meet the requirements for going public, in consequence, IPO firms' aggressive earnings management will likely be avoided by capital market. This results suggest that the finance or invest authorities should strengthen the regulations from the IPO in order to protect market participants.

<Table 5> The Impacts of Upward Earnings Management around IPO on Delisting (n=910)

	IPO year t-1			IPO year t			IPO year t+1		
	coef.	s.e.	Wald	coef.	s.e.	Wald	coef.	s.e.	Wald
Constant	19.33	3.99	23.49 ***	22.76	3.02	56.73 ***	20.27	2.93	47.73 ***
DA	2.45	0.63	14.99 ***	1.42	0.51	7.63 ***	1.09	0.67	2.67 *
SIZE	-0.86	0.21	17.07 ***	-0.92	0.15	40.45 ***	-0.60	0.13	21.38 ***
DEBT	1.44	0.86	2.80 *	1.90	0.56	11.67 ***	-0.09	0.29	0.09
LONG	-0.70	0.21	10.80 ***	-0.84	0.15	30.69 ***	-0.95	0.16	33.60 ***
BIG	-0.66	0.27	6.24 ***	-0.38	0.17	4.77 **	-0.47	0.17	7.60 ***
BLOK	-0.02	0.01	5.49 **	-0.01	0.01	1.10	-0.01	0.01	3.95 **
FOR	0.06	0.04	2.38	0.02	0.01	2.63	0.03	0.01	6.06 ***

SCOR	0.00	0.01	0.06	-0.02	0.01	6.50 ***	-0.04	0.01	37.16 ***
Model	Classification accuracy:			Classification accuracy:			Classification accuracy:		
fitness	82.6%			78.6%			78.7%		
	Log Likelihood: 419.687***			Log Likelihood: 881.155***			Log Likelihood: 859.145***		

Test model:

$$DEL = \beta_0 + \beta_1 DA + \beta_2 SIZE + \beta_3 DEBT + \beta_4 LONG + \beta_5 BIG + \beta_6 BLOK + \beta_7 FOR + \beta_8 SCOR + \epsilon$$

DEL: only 1 delisted IPOs within the year 2000-2013 after 2000 IPOs,

DA: signed discretionary accruals estimated by Kothari et al.(2005) model,

SIZE: the natural logarithm of total assets,

DEBT: total liabilities to total assets,

LONG: the natural logarithm of listing days,

BIG: if a firm would be aligned with a foreign big audit company 1, otherwise 0,

BLOK: the ratios of block-holders' ownership,

FOR: the ratios of foreigners' ownership,

SCOR: KIS VALUE credit scores measured by NICE INFORMATION SERVICE

***, ** and * is significant level at the 1%, 5% and 10% respectively (two-tailed).

Table 6 is the result of replacement DA with DAJ, the alternative measures of modified Jones model (Dechow, Sloan, and Sweeney, 1995). The results of the logistic regressions are consistent with the reported

results. These results show that various measures of earnings management are positively related to involuntary delisting possibilities.

<Table 6> Sensitivity Analysis by Modified Jones Model

	IPO year t-1			IPO year t			IPO year t+1		
	coef.	s.e.	Wald	coef.	s.e.	Wald	coef.	s.e.	Wald
DAJ	0.62	0.28	4.74**	0.04	0.02	3.02*	1.25	0.39	10.31***

DAJ: signed discretionary accruals estimated by modified Jones model (1995)

V. Conclusion

IPO firms are given the various favors, and this may act on the earnings enhancing management to obtain opportunistic or strategic gain through IPO. The degree of

excessive earnings management, however, may impair intrinsic firms' value and decrease with real performance qualities.

This study hypothesize that the degree of upward earnings management in the IPO process is positively related to the delisting.

Empirical results strongly are supported significantly. Concretely, the main results of this study can be summarized as follows:

Firstly, an analysis on the correlation shows that DA at t-1, t and t+1 of IPO period have a strongly positive relation to DEL in KOSDAQ firms.

Secondly, in the two-sample independent t-test, DA of DEL group are significantly higher than those of listing firms.

Finally, the results of multiple logistic regression model containing control variables show that DA at t-1, t, and t+1 of IPO period have a significantly positive effect on DEL in KOSDAQ firms. Futhermore, findings of additional analysis using DA estimated by the modified Jones model (Dechow et al., 1995) are robustly consistent with main results.

This results will contribute much to the prediction of IPO failure through earnings management and emphasize the fundamentals of IPO firms related to delisting risk.

Notes

- (1) Substantial Investigation System of Delisting is executed from 2009 by Substantial Investigation Committee in order to improve the health of the market and restore market confidence.

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