BOK Working Paper

Takeover, Distress,
and Equity Issuance:
Evidence from Korea

Euna Cho

2019. 6

BANK OF KOREA

Economic Research Institute
Bank of Korea

Publisher
Juyeol Lee
(Governor of Bank of Korea)

Editor
Woon Shin
(Director General of the Institute)

Requests for copies of publications, or for
addition/changes to the mailing list, should be
sent to:

Economic Research Institute
Bank of Korea
39 Namdaemunno Jung-Gu
Seoul, 110-794, Korea

E-mail: eso@bok.or.kr

Fax: 82-2-759-5410

This publication available on the BOK
Economic Research Institute website
(<http://imer.bok.or.kr>)

BOK Working Paper is occasionally published
by the Economic Research Institute, Bank
of Korea. This is circulated in order to stimulate
discussion and comments. Articles include research
achievement by the staff and visiting scholars, and
selected works sponsored by the Institute.

The views expressed in this paper do not necessarily
reflect those of Bank of Korea or the Economic
Research Institute.

© Bank of Korea, 2019
All rights reserved.

Reproduction for educational and
non-commercial purposes is permitted provided
that the source is acknowledged.

Takeover, Distress, and Equity Issuance: Evidence from Korea

Euna Cho*

The views expressed herein are those of the authors and do not necessarily reflect the official views of Bank of Korea. When reporting or citing this paper, the authors' names should always be explicitly stated.

* Economist, Economic Research Institute, Bank of Korea, Tel: +82-2-759-5483, E-mail: echo@bok.or.kr.

I deeply thank to my advisor Woojin Kim for his guidance, continuous interest, and support. I also would like thank Professor Jung-Wook Kim, Jongsub Lee, Noolee Kim, Joon-Ho Hwang, Saeyeul Park, Dr. Jieun Lee and other seminar participants at Seoul National University and Bank of Korea for helpful comments. This study is an extension of the first chapter of Cho's Ph.D. dissertation at Seoul National University Business School.

Contents

I. Introduction	1
II. Data and Variables	5
III. Empirical Analysis	14
IV. Estimates of Takeovers' Effect on Financial Distress	25
V. Conclusion	33
References	35
Appendix	40

Takeover, Distress, and Equity Issuance: Evidence from Korea

We study the motive and the economic effects of takeover in Korea, which has not been actively studied due to difficulties in collecting data. Using the data of largest shareholder change disclosed in the Korea Exchange's public disclosure system in 2004-2017, we estimate logit regressions of the likelihood that the firms to be a target. We also estimate panel regressions to examine the effect of takeovers on financial performances. The results show that takeovers in Korea occur in relation to financial distress, and that some companies tend to be targeted repeatedly. However, after the takeover, the financial distress is not resolved, indicating poor performance of takeovers motivated by financial distress.

Keywords: Takeovers, Financial distress, Equity issuance, Financial Performance, Method of Takeover

JEL Classification: G34, G32, G30, L25

I . Introduction

Korea's M&A environment is quite different from that of the US and other countries in that the market for corporate control is well-developed. First of all, the control of Korean companies usually changes through control stake acquisition that is less likely to incur a potential loss of control benefits through dilution (Kim, 2012). Due to the lack of a mandatory takeover bid rule, M&A occurs by transferring the shares held by a small number of controlling shareholders. Second, most targets are listed even after the change in controlling shareholders. Third, hostile M&As are hardly observed and therefore have only a small disciplinary role (Park et al, 2017). Finally, the level of M&A activity is very low. According to Rossi and Volpin (2004), the M&A volume of Korean listed companies is 4.81%, which is much lower than the world average of 23.54%. These differences in M&A market characteristics are largely attributable to differences in company ownership structures. In other words, unlike US companies that have dispersed ownership structures, Korean companies have significant stakes in their controlling shareholders.

This study is initiated to find out what motivates takeovers in this environment. Many explanations based on the US market have been suggested and tested to explain the motive for takeovers. Among them, the four major motives are synergy, agency problems, hubris, and mispricing. The synergy motive is related to the economic gains of the target and acquirer such as revenue enhancement, cost reduction, and tax benefits. The agency problem motive is related to the private interest of the acquirer's manager such as empire building preferences. The hubris motive is related to a misjudgment due to the overconfidence of the acquirer's manager. Lastly, the mispricing motive is related to the undervaluation of the target or overvaluation of the acquirer in the stock market. However, these studies have mainly looked at countries where the market for corporate control is well-developed, so they can only partially explain the motive for takeovers in countries where the M&A market is

less developed. Nevertheless, little is known about the motives behind acquisitions of Korean companies. This study contributes to the related literature by empirically studying the influence of controlling shareholders on the motive for and process of takeovers, as follows.

First, it seems that the target company is often a financially distressed company whose controlling shareholders have difficulty in pursuing private benefits. We also find that such firms tend to be repeatedly taken over by other controlling shareholders. Second, a frequently used method is to issue new shares and assign them to the new controlling shareholder. This method is different from what previous M&A studies analyzed in that the acquirer pays to the target, not to the shareholders of the target. Third, a takeover between controlling shareholders tends to occur for the pursuit of private benefits, and thus does not increase the corporate value after the takeover.

We first looked at cases in order to find out the cause of changes in controlling shareholders in Korean listed companies, and found several features of such changes. First of all, despite the very low level of M&A activity, some companies are targeted repeatedly. Another notable feature is that the target firm issues new shares to the acquirer for the control transfer. Anecdotal evidence suggests that these are related to the distress of the target firm and its shareholders. For example, the largest general transport company in Korea, Korea Express, was an affiliated firm of Dong-Ah business group. When Dong-Ah Group went bankrupt in 2000, Korea Express was in severe financial distress and its shares were transferred to creditors. In 2005, STX Group became the largest shareholder by acquiring shares from the creditors, and the next year, Goldman Sachs became the largest shareholder through a debt-equity swap. In 2008, Kumho-Asiana Group was selected as the preferred bidder and acquired newly issued shares through private placement. However, Korea Express was eventually sold to CJ Group when Kumho-Asiana Group fell into financial distress under the influence of the global financial crisis. In the case of Korea Express, the transfers of corporate

control were largely related to the financial distress of the target or of its controlling shareholders. Debt-equity swaps and private placement equity issuance were used as the methods of transferring control.

A hypothesis based on this anecdote is as follows. In Korea, managers and shareholders are reluctant to transfer corporate control because they value the private benefits of control. In particular, Cronqvist and Nilsson (2003) show that the controlling family does not want to give up control, which leads to a lower probability of a takeover, or a higher probability of financial distress. Meanwhile, the private benefits of control are positively related with firm performance (Albuquerque and Schroth, 2010; Barclay and Holderness, 1989). When the deficit continues and financial distress becomes severe, the private benefits of control are reduced due to the depletion of resources and heavy scrutiny. Therefore, we hypothesize that a takeover is likely to occur when the target firm is financially distressed and the motive of M&A is the resolution of the financial distress.

On the other hand, distressed firms need to raise funds to resolve their losses. Funding through capital markets is crucial for the survival of the company. However, due to high debt ratios, companies with financial distress usually have difficulty in taking out additional loans or issuing debt securities. Alternatively, to avoid bankruptcy, a firm may choose to raise capital by issuing shares (Moreno-Bromber and Vo, 2017). This can be interpreted in line with the pecking order theory, in that firms issue equity as a last resort. Högfeldt and Oborenko (2005) also argue that equity issuance reflects a lack of internal capital and difficulty issuing liabilities, i.e. financial distress, especially when a large wedge exists between control and ownership. Since controlling shareholders can use the whole sum of retained earnings with a smaller proportion to cash flow rights, internal capital is a less expensive method of financing for them. On the other hand, external capital is costly for the incumbent controller because control is diluted and a compensating transfer is required from incumbent shareholders to outside shareholders. In this context, equity would be issued when the firm's internal reserves have been depleted. In

particular, distressed firms may be expected to choose private placements when issuing shares because most of them have high degree of uncertainty and information asymmetry (Gomes and Phillips, 2012; Cronqvist and Nilsson, 2005; Wu, 2004; Chaplinsky and Haushalter, 2010; Chakraborty and Gantchev, 2013). This prediction is supported by empirical evidence suggesting private placements are related to financial distress (Krishnamurthy, Spindt, Subramaniam and Woidtke, 2005; Chakraborty and Gantchev, 2013; Kim, Ko, and Wang, 2018). Thus, the method of issuing new shares to the acquirer is expected to be used primarily in takeovers for firms with financial distress since the funds are infused to the target firm and mitigate financial distress at the same time as the takeover.

In addition, we hypothesize that the financial distress of the shareholders could also be a motive. According to Boone and Mulherin (2007), the takeover process usually begins when the target firm decides to sell and seek potential bidders. In Korea, where there are few hostile takeovers, a seller's decision whether to sell or not has a decisive effect on whether a takeover transaction occurs. So why do the bidders acquire a distressed firm? We hypothesize that the reason could be an agency problem such as an empire-building preference. Managers have an incentive to acquire other companies even if it does not maximize shareholder value because the greater the size of the company controlled by the manager, the more power the manager has, and compensation is also tied to firm size (Jensen, 1986). For this reason, mergers aimed at the manager's private benefits tend to overpay and have low synergy, resulting in bad M&A performance (Harford, Humphery-Jenner, and Powell, 2012). Such takeovers are thus not effective in resolving the financial distress and the distressed company is repeatedly targeted.

Of course, other restructuring methods, such as a corporate rehabilitation process, can be used to ease financial distress. In reality, however, M&A is actively encouraged even if a Korean firm applies to the court for rehabilitation. When creditors become majority shareholders,

they tend to be more interested in the redemption of their bonds than in reviving the company. Therefore, the court actively uses M&A to secure responsible shareholders who can redeem bonds by reviving the distressed firm and continue to manage it (Lee and Kang, 2009). A straightforward alternative is a hypothesis that the acquirers buy a temporarily undervalued target to create synergies and make the M&A market efficient. This alternative hypothesis does not predict the increase in the financial distress of the targets and the acquirers after the acquisition. However, we found that the financial distress of the targets and the acquirers worsened after takeover. We further confirmed that there is no deterioration of the financial distress proxies in the non-targets and the non-acquirers through placebo tests.

To confirm whether the case of Korea Express can be generalized to a large sample of takeovers and to confirm that the hypothesis is correct, we examine takeovers of listed companies during 2004-2017 in Korea.

II. Data and Variables

1. Data

Data were collected manually from 2004 to 2017 by referring to the disclosure of the largest shareholder change of listed firms from the homepage of the Korea Exchange (KIND).

Panel A in Table 1 shows the sample selection procedure, from initial disclosures to the final sample. This study focuses on the actual changes in the control of non-financial companies. Therefore, financial targets are excluded. We also exclude takeovers between related parties since the actual control remains unchanged in these cases. Such takeovers mainly occur due to inheritance and the transition of the governance structure to the holding company system. We first determine whether the seller and the acquirer are related parties on the basis of the disclosure. In addition, if the new shareholder is a company, we identify its largest shareholder and cross check with official documents disclosed before and after the

takeover. Next, we assume that a single takeover transaction involves the transfer of control from a non-financial entity to a non-financial entity. In the case of “Indirect-type” transactions through financial institutions, we remove the intermediate financial institutions. We note that, in indirect cases, the time and method of control transfer is determined when the transfer to the financial institution occurs because we are interested in the financial distress at the time of the first transfer of control. In cases where we cannot find the non-financial entity who sold the target firm to the financial entity during the sample period, we track the transactions and identify the previous controlling shareholder and the time and method of the control transfer. In addition, we exclude control changes that occur due to unilateral declines in the equity stakes of the previous largest shareholders, because the new largest shareholder did not have an active intention to acquire control. We also exclude the cases where takeovers are canceled after disclosure, as well as miscellaneous cases such as SPAC listings. In the case of an SPAC listing, the shareholders of the merger will receive shares of the special purpose acquisition company (SPAC) in accordance with the merger ratio, so that the unlisted company goes through the SPAC for the listing and the actual control will remain unchanged. Also, takeovers in which the value of the acquired stock is less than 5% of the market value are excluded, which is similar to the filtering method of Mitchell and Lehn (1990). Finally, we exclude deals with less than 1 billion KRW to rule out the effect of very small takeovers. The amount of takeover is calculated by multiplying the stock price at the reporting date and the new controlling shareholders’ increased number of shares. We note that the date and stock price of the Indirect-type is based on the current transaction.

Panel B reports the number of times the target was acquired during the sample period. Since most targets remain listed even after the acquisition, it is possible to observe the changes of control over time. Almost half of the targets experience more than two control changes during the sample period.

Table 1. Sample Selection Procedure

This table presents the sample selection procedure of takeovers of Korean listed companies (including KRX and KOSPI) during 2004–2017. The procedure details the number of takeover transactions filtered out at each reason. The amount of takeover is calculated by multiplying the stock price at the reporting date and the new controlling shareholders' increased number of shares.

Panel A. Takeover Samples

Total disclosures	4,171
(1) Target is a financial firm	255
(2) Deals between related parties	1,038
(3) Deals between financial firms in Indirect-type takeovers	449
(4) Previous controlling shareholders unilaterally reduce their shares	209
(5) In case the contract is canceled after disclosure, financial statements are missing and miscellaneous such as SPAC listing	252
(6) If the amount purchased is less than 5% of mark value	491
(7) If the amount purchased is less than 1 billion won	94
Final sample	1,383

Panel B. Frequency of Takeovers

	Number of firms	(%)	Number of takeovers	(%)
1 time	389	(53.1)	389	(28.1)
2 times	170	(23.2)	340	(24.6)
3 times	89	(12.2)	267	(19.3)
4 times	49	(6.7)	196	(14.2)
5 times	26	(3.5)	130	(9.4)
6 times	9	(1.3)	54	(3.9)
7 times	1	(0.0)	7	(0.5)
Total	733	(100.0)	1,383	(100.0)

Further, we divide the sample into two groups according to the way that control is transferred: New-type and Old-type. New-type refers to the transfer of control through the issuance of new shares by the target, and Old-type refers to the transfer of control through the payment by the acquirer of cash or stock of the acquiring firm to the target's shareholders. Acquisition methods have been studied in a wide range of contexts such as taxes, information asymmetry, capital structures and behavioral motives (Eckbo, 2009). In the point of this new classification,

they are in fact all Old-types. Prior studies focus on cash or stocks as a means of payment, and the issuer of the stocks is the acquirer. On the other hand, in our New-type classification, the issuer is the target firm. Thus, the New-type in which target issues new shares is expected to be used primarily in takeovers for firms with financial distress since the funds are infused to the target firm and mitigate financial distress at the same time as the takeover. The shareholders of the target do not get paid and lose control. The New-type takeover, however, may also be beneficial to the shareholders of the target firm. They may be able to sell their shares at a higher price after financial distress is resolved, even though they will not be paid instantly for the transfer of control. This could be a good alternative for an incumbent controlling shareholder in a situation in which a company has to choose between liquidation or recapitalization.

In addition, we assume that a single takeover transaction involves the transfer of control from a non-financial entity to a non-financial entity. From this point a view, we define a transaction in which control is transferred from a non-financial entity to a non-financial entity as a "Direct" transaction, and a transaction via a financial institution as an "Indirect" transaction. In indirect transactions, we determine whether the target or shareholders are distressed at the moment control is transferred to the financial institution, since we are interested in whether the target experiences financial distress at the beginning of the transfer of control.

Table 2 shows the frequency and the size of each of the four types of takeover transactions. Takeovers are classified into *Direct* and *Indirect* types depending on whether it goes through a financial institution or not, and as *New* and *Old* types depending on whether the target issues new shares or not. New-type accounts for 34% of the frequency, but 50% of the total amount. Old-type accounts for the rest. Direct-type, meanwhile, accounts for 87% of the frequency, but 60% of the total amount. Indirect-type accounts for the rest. In terms of the size of the takeover, the Indirect-type is larger than the Direct-type, and New-type is larger than

the Old-type. This suggests that large takeovers tend to occur in a New-Indirect manner, given that New-Indirect takeovers account for 7% in terms of frequency but 30% in terms of total amount. The average transaction amount of this type is 212 billion KRW, which is the greatest among all types.

Table 2. Different Types of Takeovers

This table classifies takeover transactions into four types. New and old types are distinguished by the way control is transferred. Direct and indirect types are distinguished by whether the transfer goes through a financial institution. Panel A reports the number of takeover transactions and the proportion for each type. Panel B reports the total amount of takeovers and the proportion for each type. Panel C reports the average and median amounts for each type.

Panel A. Frequency of Takeovers					
	Direct		Indirect		Sum
	N	(%)	N	(%)	N (%)
New	381	(28)	86	(6)	467 (34)
Old	827	(60)	89	(6)	916 (66)
Sum	1,208	(88)	175	(12)	1,383 (100)
Panel B. Total Amounts of Takeovers (Units: KRW billions, %)					
	Direct		Indirect		Sum
New	13,219	(23)	13,419	(24)	32,821 (47)
Old	24,556	(43)	5,678	(10)	32,353 (53)
Sum	31,271	(66)	25,372	(34)	65,174 (100)
Panel C. Average [Median] Amounts (Unit: KRW billions)					
	Direct		Indirect		All
New	34.7	[5.8]	156	[12.2]	57 [6.4]
Old	29.7	[7.2]	63.8	[11.9]	33 [7.4]
Sum	31.3	[6.7]	109.1	[11.9]	41.1 [7.0]

Next, we examined the distributions of the ownership ratio of controlling shareholders before and after takeovers by year. The new controlling shareholders newly acquired 21% of shares at the time of the takeover, and they had owned 2% of shares on average even before the takeover. On the other hand, the former controlling shareholders had

held 13% of shares in the New-type and 25% in the Old-type before takeovers. Since the target firm in a new-type takeover is likely to be implementing restructuring measures such as reduction of capital, the share of existing shareholders is often lowered at the time of acquisition. The ownership after the acquisition of the former controlling shareholders is 7% in New-types and 5% in Old-types. In New-types, the ownership of the former controlling shareholders is diluted because the target firm issues shares to the new shareholders, even though they do not sell to the new shareholders. Meanwhile, the former controlling shareholders in Old-type takeovers keep their shares only below the level where they can exercise considerable control.

2. Variables

Financial distress refers to a situation where a firm is unable to meet its debt obligations (Wruck, 1990; Gilson, 1989). In particular, Purnanandam (2008) separates financial distress from insolvency and defines the former as follows: “a low cash-flow state in which the firm incurs losses without being insolvent.” Opler and Titman (1994) also make a distinction between financial distress and default in a similar context. This study follows the definition of Purnanandam (2008).

To measure financial distress, financial indicators or predicting models are mainly used. Indicators include interest coverage ratio (Bruylant and Maeseneire, 2016; Andrade and Kaplan, 1998; Bernanke and Gertler, 1995), leverage (Gilson, 1989), net profit (Ang and Nathan, 2011) and continuous deficits (Wu, 2004; Hertz and Smith, 1993). Models for predicting financial distress include Altman's Z-score and Ohlson's O-score. In this study, a variety of financial distress measures are used: three continuous variables (ROA, Lnintcov, Kscore) and three dummy variables (Deficit, Caper, Dintcov). First, ROA, Lnintcov, Deficit, and Dintcov are related to the firm's profitability. ROA is net income scaled by the book value of total assets. Lnintcov is the log value of interest coverage ratio

Table 3. Ownership of Controlling Shareholder before and after Control Changes

This table shows the number of takeover deals between 2004 and 2017 and the average ownership of the former controlling shareholders and the new controlling shareholders before and after the takeover. New and old types are distinguished by the way control is transferred.

No. of deals				Ownership (%)											
				New-type						Old-type					
Year	Sum	New-type	Old-type	Old-shareholder			New-shareholder			Old-shareholder			New-shareholder		
				Before	After	Diff	Before	After	Diff	Before	After	Diff	Before	After	Diff
2004	19	7	12	8.0	1.7	-6.3	0.1	35.3	35.2	32.5	3.1	-29.4	1.2	38.2	37.0
2005	95	26	69	12.8	6.2	-6.6	2.7	22.0	19.4	26.5	7.2	-19.3	1.6	24.6	23.0
2006	134	29	105	12.4	8.8	-3.5	1.1	19.6	18.5	25.4	6.3	-19.1	2.9	23.1	20.2
2007	220	65	155	12.0	6.6	-5.4	1.6	19.8	18.2	22.9	4.1	-18.7	2.0	20.4	18.4
2008	208	59	149	12.0	6.9	-5.1	1.3	22.4	21.1	21.4	4.6	-16.8	2.3	21.5	19.2
2009	145	60	85	12.0	6.8	-5.2	1.4	23.8	22.4	22.9	4.2	-18.6	3.3	25.2	21.9
2010	104	31	73	12.7	7.9	-4.9	1.4	23.8	22.4	25.1	5.5	-19.6	2.2	25.8	23.7
2011	49	13	36	16.6	13.0	-3.6	3.8	34.8	31.0	29.6	7.0	-22.5	3.5	24.7	21.3
2012	54	14	40	13.3	8.0	-5.3	2.3	27.8	25.5	30.0	6.2	-23.9	2.9	27.3	24.4
2013	43	17	26	19.0	9.3	-9.7	1.5	28.7	27.2	25.7	4.7	-21.1	1.4	23.8	22.3
2014	52	19	33	14.1	7.3	-6.8	2.9	25.5	22.5	34.5	4.1	-30.4	2.2	33.1	30.8
2015	80	35	45	15.9	7.7	-8.2	2.8	26.0	23.2	29.3	4.4	-24.9	0.9	26.5	25.6
2016	97	39	58	11.6	6.7	-4.9	1.6	20.3	18.7	24.8	4.4	-20.4	1.3	18.7	17.4
2017	79	30	49	11.9	8.0	-3.9	0.8	18.1	17.3	29.4	3.8	-25.5	1.4	25.2	23.8
Sum	1,379	444	935	12.9	7.4	-5.5	1.7	23.0	21.3	25.3	5.0	-20.3	2.2	23.7	21.5

plus 2, while Deficit is a dummy variable with a value of 1 if net income is negative for two consecutive years, or 0 otherwise. Dintcov is a dummy variable with a value of 1 if operating income is less than interest expenses, or 0 otherwise. Caper is related to the capital structure. A firm is considered in capital erosion when paid-in-capital (book equity – retained earnings) is greater than or equal to book equity. Finally, we use the Altman (1995) K-score, introduced to predict the probability of bankruptcy of Korean companies. The lower the index, the higher the risk of corporate insolvency. Kscore1 calculated with the market value of equity can be applied to listed firms, and Kscore2 calculated with the book value of equity can be applied to unlisted firms (see appendix for more details). Kscore1 below –2.00 or Kscore2 below –2.30 indicates severe distress potential, while Kscores above 0.75 are interpreted as distress-free for both Kscores.

Other variables that may affect the likelihood of takeover or the method of acquisition from previous studies are included as control variables. Hasbrouck (1985) uses a logit model to predict takeovers and includes size, q ratio (market to replacement value), liquidity, and leverage. Palepu (1986) uses logit estimates using sales growth, leverage, size, market-to-book ratio, price-earnings ratio, and liquidity. Schwert (2000) includes ROE, sales growth, liquidity, debt-to-equity ratio, market-to-book ratio, price-earnings ratio, and size in probit and regression models. Akhigbe, Martin, and Whyte (2007) provide logit estimates including size, institutional ownership, market-to-book ratio, free cash flow, leverage, performance, and fixed assets as the characteristics of the target.

The empirical evidence suggests that the likelihood of takeover decreases with firm size due to transaction costs. Firms with a low market-to-book ratio are more likely to be an acquisition target since they may be perceived to be undervalued. For the free cash flow, predictions diverge. Smith and Kim (1994) argue that the higher the free cash flow, the more attractive the target candidate. Alternatively, if a high free cash

flow reflects excessive private benefits, it may reduce the probability of a successful takeover by increasing the offer premium. There also seems to be no consensus on the effect of the largest shareholder ownership. Shleifer and Vishny (1986) suggest that a takeover becomes more likely as the proportion of the firm's shares held by the large shareholder rises. They assume that a large shareholder replaces ineffective managers as a monitoring activity and accepts takeover even for a small increase in the firm's profit. Alternatively, Stulz (1988) argues that an increase in the fraction of voting rights controlled by management decreases the probability of a successful tender offer. Meanwhile, firms with a high tangible asset ratio may be attractive targets because they provide additional production capacity to the bidders. With regard to institutional ownership, Clyde (1997) shows that the acquisition is used more like a disciplinary mechanism. Since most foreign investors in Korea are institutional investors, foreign rather than institutional ownership is used in this study. Faleye (2004) shows that firms with excess cash are less likely to be a target of a takeover since they have the ability to defend themselves against an unwanted bid. Lastly, since information asymmetry may affect the choice of acquisition method, age is included as a variable representing a firm's information asymmetry.

III. Empirical Analysis

1. Descriptive Statistics

We first report the descriptive statistics of key variables for the target by the types of takeovers. According to Panel A of Table 4, more than half of the targets are in financial distress. The values of the dummy variables such as Deficit, Caper, and Dintcov are greater than 0.5. Meanwhile, non-target firms (firm-year) are the listed companies that have never been a target during the sample period. The univariate analysis of both samples indicates that a target is in greater financial distress than a non-target. Targets have negative profitability (ROA) on average, and their average Kscore1 is below -2.00 , while non-targets have positive profitability and their average Kscore1 is over 0.75 . In addition, the leverage and cash holdings over total assets of the targets are significantly higher than those of the non-targets. Also, targets have lower age, size, sales growth, largest shareholder ownership, foreign ownership, free cash flows, and tangible assets over total assets than non-targets. These are generally consistent with expectations based on the previous research. Although the market-to-book ratio is the opposite of our expectations in this table, the results of its multivariate analysis after controlling other variables are consistent. Furthermore, the average financial distress of the New-type is greater than the Old-type. Deficit, Caper, and Dintcov of the New-type takeover are 0.73 , 0.83 , and 0.85 respectively, which means that 70%-80% of the targets are in financial distress. On the other hand, 40%-60% of Old-type targets are in financial distress.

We find that more than 50% of takeover targets are acquired more than one time, as shown in Table 1. Next, we check whether firms that are targeted again are less financially distressed compared to the previous acquisition. Panel B of Table 4 shows that the financial distress of target worsens as the order of takeover increases. Firms (firm-year) that are never targeted during the sample period are included in Order=0 groups, firms that are acquired for the first time are in Order=1, firms

that are acquired for the second time are in Order=2, firms that are acquired for the third time are in Order=3, and firms that are acquired for the fourth time or more are in Order=4. As the order of takeover increases, the ROA and Kscore1 monotonically decrease, and Deficit, Caper and Dintcov monotonically increase.

Table 4. Summary Statistics for Targets

This table presents the summary statistics of takeover targets. Panel A shows the summary statistics of the main variables for target firms and the comparison to non-targets. Panel B shows the distribution of target firms by the order of takeover transactions. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A. Summary Statistics of Targets by Different Types									
	Target	Non-target	Diff	NEW	OLD	Diff	Direct	Indirect	Diff
N	1,383	35,522		467	916		1,208	175	
ROA	-0.25	0.01	-0.25***	-0.40	-0.17	-0.24***	-0.24	-0.26	0.02
Lnintcov	4.66	4.82	-0.16***	4.60	4.70	-0.11***	4.67	4.63	0.04
Kscore1	-4.68	5.09	-9.78***	-11.97	-0.96	-11.01***	-4.64	-4.98	0.34*
Deficit	0.53	0.14	0.38***	0.73	0.42	0.31***	0.53	0.53	0.00
Caper	0.61	0.21	0.40***	0.83	0.50	0.33***	0.60	0.67	-0.07*
Dintcov	0.71	0.30	0.41***	0.85	0.64	0.21***	0.72	0.69	0.02
Size	17.64	18.43	-0.80***	17.62	17.65	-0.02	17.56	18.20	-0.64***
Lev	0.55	0.50	0.06***	0.71	0.47	0.23***	0.54	0.68	-0.14***
Cash	0.09	0.08	0.01***	0.08	0.09	-0.02***	0.09	0.08	0.01
Age	21.97	25.13	-3.16***	23.60	21.13	2.47***	21.71	23.76	-2.05**
Sgr	11.34	18.77	-7.42***	8.45	12.82	-4.37	12.14	5.76	6.38
Lown	26.23	40.33	-14.11***	19.08	29.87	-10.79***	26.30	25.73	0.56
Fown	3.33	6.30	-2.96***	2.45	3.78	-1.33***	3.10	4.97	-1.87***
Mtb	2.02	1.36	0.66***	2.19	1.94	0.25*	2.11	1.39	0.72***
Fcf	-0.10	0.05	-0.14***	-0.21	-0.04	-0.17***	-0.10	-0.06	-0.04
Tang	0.26	0.32	-0.05***	0.26	0.27	-0.01***	0.26	0.30	-0.04**
Panel B. Targets by Order of Control Transfer (Mean)									
	0	1	2	3	4 or more				
N	35,522	733	344	174	132				
ROA	0.01	-0.16	-0.31	-0.38	-0.39				
Lnintcov	2.25	2.05	1.18	1.14	1.01				
Kscore1	5.09	0.06	-7.66	-11.02	-14.80				
Deficit	0.14	0.42	0.60	0.70	0.72				
Caper	0.21	0.46	0.69	0.85	0.89				
Dintcov	0.30	0.61	0.78	0.85	0.89				
Size	18.43	17.84	17.48	17.37	17.28				
Lev	0.50	0.54	0.59	0.55	0.57				
Cash	0.08	0.09	0.09	0.08	0.09				
Age	25.13	21.30	22.16	22.61	24.32				
Sgr	18.77	10.20	14.63	10.10	10.72				
Lown	40.33	30.65	23.82	19.22	17.26				
Fown	6.30	4.36	2.12	1.59	3.07				
Mtb	1.36	1.79	2.27	2.21	2.44				
Fcf	0.05	-0.05	-0.16	-0.14	-0.17				
Tang	0.32	0.28	0.25	0.25	0.24				

Table 5 documents the composition of the sellers and their characteristics. According to Panel A, a largest shareholder is an individual rather than a corporation. The shares of the largest shareholders are, however, the sum of the shares held by the individual as well as the related parties, and an individual or a corporation represent them by self-reporting. When the seller (or the representative of the largest shareholder) is an individual, it is difficult to know the financial status of the controlling shareholder at the time of sale. When the seller is a company subject to mandatory disclosure, then we can examine their financial status based on financial information disclosed around the time of the sale. We first identify 376 takeovers whose largest shareholder is a company subject to mandatory disclosure. Then we filter out the firms in the financial industry or with below 10% ownership before the sale. Some firms are eliminated due to a lack of financial information. Financial statements for some years may be unavailable because the list of companies subject to mandatory disclosure changes every year. Finally, we have 242 sellers with financial data who are non-financial companies.

Panel B shows the results of the comparison between the sellers and the non-sellers. The non-sellers are the controlling shareholders of listed companies who are non-financial firms with substantial ownership (the cutoff is 10%) and have not sold the control of their subsidiary during the sample period. We find that the sellers are more financially distressed than the non-sellers. Specifically, the sellers have negative values for ROA and Kscore2, 32% are in two consecutive years of deficits, 44% are in capital erosion, and 56% cannot cover interest costs with their operating income. On the other hand, the average ROA and Kscore2 of the non-sellers are positive, and the level of financial distress proxied by other indicators is significantly lower than that of the sellers. Moreover, the sellers have higher leverage and cash holdings and lower free cash flows and tangibility than the non-sellers.

Table 5. Summary Statistics for Sellers

This table reports the composition and characteristics of the sellers. Panel A documents the frequency of each group of sellers. Panel B presents the univariate comparison of firm characteristics between the sellers and the non-sellers. The non-sellers are the controlling shareholders of a non-financial listed company with more than 10% ownership and who have not transferred corporate control during the sample period. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A. Composition of Sellers			
Company			545
	Not subject to mandatory disclosure	169	
	Subject to mandatory disclosure	376	
Individual			829
Unconfirmed			9
Total			1,383
Panel B. Comparison Statistics of Sellers			
	Seller	Non-seller	Diff
N	242	4,195	
ROA	-0.08	0.04	-0.12***
Lnintcov	4.65	4.87	-0.22***
Kcore2	-1.20	10.68	-11.88***
Deficit	0.32	0.06	0.25***
Caper	0.44	0.12	0.32***
Dntcov	0.56	0.20	0.36***
Size	18.45	19.89	-1.44***
Lev	0.59	0.39	0.20***
Cash	0.06	0.04	0.01***
Age	23.75	35.16	-11.40***
Sgr	0.20	0.15	0.05
Fcf	-0.02	0.05	-0.07***
Tang	0.20	0.22	-0.02*

2. Determinants of the Frequency of Being Targeted

In this section, we analyze the factors that affect the frequency of being a target through ordered logit analysis and examine whether the target's distress is one of the factors. The dependent variable is the number of times (never, first, second, third, fourth or more, in sequential order) to be targeted, the same as “Order” in Panel B of Table 4. Explanatory variables include proxies of a firm's financial distress and variables known to affect the likelihood of being a target introduced in Section 3.2. One-unit increase in an explanatory variable would result in the change coefficient in the ordered log-odds of being targeted a higher number of times with other variables in the model held constant. The financial distress variables are highly correlated and therefore analyzed in the separate specifications. We include 2-digit industry fixed effects to control for industry unobserved heterogeneity, and year fixed effects to control for unobserved time effects in our models. We also employ standard errors clustered at 2-digit industry level to address concerns over potential biases from correlated residuals within an industry.

Table 6 report the results of the ordered logit regression. As we predicted, financial distress is an important factor that affects the likelihood and the frequency of being a target after controlling other variables. More importantly, the number of times that a firm is targeted increases as financial distress become deeper. Specifically, lower ROA, Lnintcov, and Kscore1 would result in an increase in the ordered log-odds of being targeted a higher number of times. Also, distressed firms (deficit equals one, Caper equals one, or Dintcov equals one) are more likely to be targeted more often than non-distressed firms. In addition, smaller companies are more likely to be targeted, which are consistent with previous studies. Higher leverage also would result in being targeted a higher number of times. A low ownership share by the largest shareholder tends to increase the number of times being a target, which is consistent with Stultz (1988)'s argument that incumbent shareholders

pursuit of private benefits makes them avoid being targeted. The results suggest that companies with severe financial distress face frequent changes in corporate control. It also implies that financial distress is not resolved by a single takeover.

Table 6. Determinants of Order of Targets

This table gives coefficients of multivariate ordered logit regressions in which the dependent variable is the number of times a firm has been a takeover target. Standard errors (reported in parentheses) are clustered at the 2-digit industry level. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable=Order of takeover						
	(1)	(2)	(3)	(4)	(5)	(6)
ROA	-1.2693*** (0.2061)					
Lnintcov		-0.0905* (0.0517)				
Kscore1			-0.0158*** (0.0034)			
Deficit				0.7967*** (0.0729)		
Caper					0.8502*** (0.1008)	
Dintcov						0.8790*** (0.0857)
Size	-0.5362*** (0.0588)	-0.5793*** (0.0729)	-0.5741*** (0.0611)	-0.5776*** (0.0592)	-0.5582*** (0.0591)	-0.5883*** (0.0605)
Lev	0.7275*** (0.2618)	1.3689*** (0.2243)	0.8900*** (0.2249)	1.0385*** (0.2013)	0.9281*** (0.2001)	0.9704*** (0.1832)
Cash	0.5025 (0.6580)	0.2284 (0.8099)	0.5245 (0.6391)	0.5400 (0.6225)	0.6421 (0.6444)	0.5173 (0.6660)
Age	-0.0053 (0.0033)	-0.0084** (0.0039)	-0.0054* (0.0033)	-0.0062* (0.0033)	-0.0068** (0.0031)	-0.0055* (0.0031)
Sgr	-0.0001 (0.0006)	-0.0001 (0.0008)	-0.0007 (0.0006)	-0.0006 (0.0006)	-0.0007 (0.0006)	-0.0002 (0.0005)
Lown	-0.0320*** (0.0029)	-0.0361*** (0.0042)	-0.0338*** (0.0027)	-0.0312*** (0.0025)	-0.0290*** (0.0025)	-0.0321*** (0.0024)
Fown	-0.0004 (0.0048)	0.0076 (0.0050)	0.0008 (0.0047)	0.0015 (0.0045)	0.0013 (0.0045)	0.0021 (0.0053)
Mtb	-0.0151 (0.0180)	0.0107 (0.0288)	0.0146 (0.0196)	-0.0129 (0.0192)	-0.0237 (0.0174)	-0.0057 (0.0200)
Fcf	0.0860* (0.0489)	-0.0817 (0.0605)	0.0053 (0.0940)	0.0155 (0.0774)	-0.0200 (0.0997)	0.0376 (0.0859)
Tang	0.2958 (0.2447)	-0.4510 (0.3781)	0.1783 (0.2375)	0.1832 (0.2227)	0.2439 (0.2324)	0.2203 (0.2525)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obj.	28,258	22,600	28,252	28,252	28,257	26,966
Pseudo R ²	0.2	0.16	0.2	0.2	0.2	0.21

3. Determinants of Takeover Types

In this section, we extend the analysis to explore whether financial distress affects the determination of takeover types. We use multinomial logit analysis to examine whether financial distress affects takeover types and whether the target's distress has a significant effect. The firms that have never been a target during the sample period are the baseline group against New-type targets and Old-type targets. The explanatory variables are the same as the ordered logit model in the previous section. We also include 2-digit industry fixed effects and year fixed effects, and use industry clustered standard errors in our models.

Table 7 reports the estimates of multinomial regressions. Since non-target firms are used as the baseline, the coefficients can be interpreted as the impact on the probability of a firm being selected for a specific type of takeover relative to no takeover. As financial distress becomes severe, the probability of both types of takeover tends to be higher than that of no takeover. However, the magnitude of the coefficient is greater in New-type than Old-type. This indicates the firms with severe financial distress tend to be acquired through New-type rather than Old-type. An additional chi-square test was conducted to examine whether the coefficients are significantly different between the two types. The last rows of the table show the results and report that the two coefficients are significantly different, except for Lnintcov . More specifically, the coefficient of ROA and Kscore1 are significantly different at 95% confidence levels, and Deficit , Caper , and Dintcov are significantly different at 99% levels. This implies that severe financial distress weakens the bargaining power of the incumbent shareholders, who may be obliged to accept unfavorable terms. That is because the New-type takeover is generally more disadvantageous to incumbent shareholders than Old-type in that they are not paid immediately for the control transfer.

Table 7. Determinants of Takeover Types

This table gives coefficients of multinomial logit regressions in which the dependent variable has a value of 1 if the firm is a target of a New-type takeover, 2 if it is that of an Old-type takeover, and 3 if it is not a target. Standard errors (reported in parentheses) are clustered at the 2-digit industry level. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

	(1)		(2)		(3)		(4)		(5)		(6)	
	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
ROA	-1.5250*** (0.2227)	-0.8977*** (0.2160)										
Lnintcov			-0.1381 (0.1112)	-0.0869** (0.0412)								
Kscore1					-0.0236*** (0.0066)	-0.0080** (0.0034)						
Deficit							1.2677*** (0.1409)	0.5379*** (0.0714)				
Caper									1.4790*** (0.1675)	0.5536*** (0.1037)		
Dintcov											1.2376*** (0.1675)	0.7352*** (0.0831)
Size	-0.2841*** (0.0833)	-0.6421*** (0.0604)	-0.3317*** (0.1027)	-0.6255*** (0.0827)	-0.3005*** (0.0860)	-0.6755*** (0.0589)	-0.3246*** (0.0701)	-0.6573*** (0.0603)	-0.3073*** (0.0669)	-0.6402*** (0.0612)	-0.3627*** (0.0728)	-0.6548*** (0.0631)
Lev	1.7259*** (0.2846)	0.3577 (0.2738)	3.0027*** (0.3910)	0.2288 (0.2538)	1.9142*** (0.2956)	0.4544** (0.2246)	2.0831*** (0.2624)	0.4800** (0.2175)	1.9318*** (0.2545)	0.3981* (0.2212)	2.0989*** (0.2184)	0.3143 (0.2151)
Cash	0.2912 (0.7221)	0.6465 (0.7182)	1.5023 (1.3196)	0.0589 (0.8999)	0.3354 (0.6968)	0.6503 (0.7094)	0.4587 (0.6652)	0.6662 (0.6981)	0.5594 (0.6576)	0.7329 (0.7055)	0.5259 (0.6581)	0.5452 (0.7504)
Age	0.0018 (0.0038)	-0.0106*** (0.0035)	0.0010 (0.0055)	-0.0136*** (0.0041)	0.0008 (0.0038)	-0.0104*** (0.0034)	0.0003 (0.0039)	-0.0111*** (0.0034)	-0.0007 (0.0036)	-0.0117*** (0.0034)	0.0016 (0.0037)	-0.0111*** (0.0033)
Sgr	-0.0001 (0.0009)	0.0000 (0.0007)	-0.0001 (0.0011)	0.0003 (0.0008)	-0.0006 (0.0009)	-0.0004 (0.0007)	-0.0007 (0.0008)	-0.0003 (0.0007)	-0.0008 (0.0009)	-0.0004 (0.0007)	-0.0003 (0.0008)	0.0000 (0.0006)
Lown	-0.0639*** (0.0039)	-0.0192*** (0.0029)	-0.0703*** (0.0061)	-0.0244*** (0.0043)	-0.0653*** (0.0040)	-0.0207*** (0.0027)	-0.0606*** (0.0038)	-0.0188*** (0.0026)	-0.0559*** (0.0035)	-0.0174*** (0.0027)	-0.0616*** (0.0033)	-0.0183*** (0.0025)
Fown	-0.0170 (0.0128)	0.0036 (0.0046)	-0.0158 (0.0141)	0.0119** (0.0053)	-0.0148 (0.0121)	0.0041 (0.0046)	-0.0100 (0.0119)	0.0039 (0.0045)	-0.0084 (0.0113)	0.0038 (0.0046)	-0.0074 (0.0119)	0.0040 (0.0055)
Mtb	-0.0056 (0.0332)	-0.0305 (0.0228)	0.0572 (0.0419)	-0.0126 (0.0414)	0.0274 (0.0318)	-0.0070 (0.0234)	-0.0020 (0.0314)	-0.0269 (0.0229)	-0.0142 (0.0310)	-0.0354 (0.0224)	0.0078 (0.0328)	-0.0191 (0.0229)
Fcf	-0.1148 (0.1370)	0.0990 (0.1148)	-1.3173*** (0.4154)	-0.6034 (0.3834)	-0.2175 (0.3372)	-0.0720 (0.2734)	-0.1995 (0.2422)	0.0073 (0.2034)	-0.2580 (0.3262)	-0.0556 (0.2512)	-0.1434 (0.2480)	0.0871 (0.1817)

(Continued)

	(1)		(2)		(3)		(4)		(5)		(6)	
	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
Tang	-0.5218 (0.3941)	0.5595** (0.2392)	-0.9102 (0.6806)	-0.0673 (0.3628)	-0.6460 (0.4217)	0.5154** (0.2346)	-0.6828* (0.4010)	0.5260** (0.2242)	-0.5903 (0.4005)	0.5725** (0.2338)	-0.6770 (0.4212)	0.5936** (0.2405)
Cons	1.9465 (1.6030)	8.6160*** (1.0576)	1.9916 (2.0550)	8.8597*** (1.3690)	2.2875 (1.6753)	9.2693*** (1.0220)	2.0095 (1.3795)	8.7177*** (1.0588)	1.3777 (1.3485)	8.3383*** (1.0992)	2.4992 (1.4772)	8.6175*** (1.0883)
Industry FE	Yes		Yes		Yes		Yes		Yes		Yes	
Year FE	Yes		Yes		Yes		Yes		Yes		Yes	
Obj.	28,258		22,600		28,252		28,252		28,257		26,966	
Pseudo R ²	0.25		0.21		0.24		0.25		0.25		0.26	
	chi2=6.05 Prob chi2= 0.0139		chi2=0.29 Prob chi2=0.5906		chi2=5.18 Prob chi2=0.0229		chi2=32.10 Prob chi2=0.0000		chi2=50.87 Prob chi2=0.0000		chi2=12.13 Prob chi2=0.0005	

For the remaining variables, the size of the potential targets affects both types of takeovers, while the smaller firms are more likely to be acquired in an Old-type manner. Although the largest shareholder's ownership of a firm also affects both types, firms with lower ownership tend to be acquired in a New-type manner. Interestingly, the proportion of property, plants and equipment contributes mainly to the possibility of an Old-type takeover. That is, the higher the proportion of property, plants and equipment, the greater the negotiating power of incumbent shareholders.

4. Determinants of Being a Seller

In this section, we identify the factors that affect the probability that a subsidiary is sold and analyze through logit regression whether the seller's own financial distress significantly affects the probability of a takeover. Since the financial information about shareholders is only available when they disclose their financial statements, we limit the analysis to the cases where controlling shareholders are mandatory disclosure firms. Financial firms and firms with ownership below 10% are also excluded.

The dependent variable is a dummy variable with a value of one if the firm is a seller or zero otherwise. Explanatory variables include the controlling shareholder's financial distress, size, leverage, cash holdings, age, sales growth, free cash flow, and tangible asset ratio. In this analysis, we use Kscore2, which can be applied not only to listed companies but also to unlisted companies since some parent companies are unlisted. The remaining financial distress measures other than Kscore are the same as the previous analyses, but they indicate the financial distress of the incumbent controlling shareholder, not that of the target. We also include 2-digit industry fixed effects and year fixed effects, and use industry clustered standard errors in our models.

Table 8. Determinants of Sellers

This table gives coefficients of binary logit regressions in which the dependent variable is a dummy variable with a value of 1 if the firm is a seller, and 0 otherwise. Standard errors (reported in parentheses) are clustered at the 2-digit industry level. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
ROA	-2.1223*** (0.7910)					
Lnintcov		-0.4496 (0.2803)				
Kscore2			-0.0201 (0.0184)			
Deficit				0.8626*** (0.2426)		
Caper					1.1654*** (0.2731)	
Dintcov						0.5484** (0.2687)
Size	-0.5796*** (0.0993)	-0.6620*** (0.0939)	-0.5750*** (0.1095)	-0.5946*** (0.1032)	-0.5842*** (0.0976)	-0.6184*** (0.1008)
Lev	0.1718 (0.4926)	0.6818* (0.4116)	0.1858 (0.7661)	0.3521 (0.4646)	0.2059 (0.4680)	0.5490 (0.3950)
Cash	3.2622*** (1.2062)	3.5475** (1.4718)	3.2635** (1.3684)	3.5501*** (1.2650)	3.5521** (1.3930)	3.7465*** (1.3843)
Age	-0.0108 (0.0113)	-0.0101 (0.0147)	-0.0101 (0.0116)	-0.0093 (0.0117)	-0.0072 (0.0120)	-0.0100 (0.0135)
Sgr	0.0608 (0.0573)	0.0368 (0.0609)	0.0205 (0.0595)	0.0348 (0.0634)	0.0116 (0.0560)	0.0576 (0.0546)
Fcf	-4.2044*** (1.0103)	-4.2898*** (1.0631)	-4.6946*** (1.0124)	-4.4663*** (0.9571)	-4.5883*** (0.9543)	-3.9841*** (1.0137)
Tang	0.3560 (0.5854)	0.2395 (0.5762)	0.6201 (0.6147)	0.4142 (0.5947)	0.3519 (0.6066)	0.3764 (0.5884)
Cons	8.9516*** (2.0149)	12.4336*** (2.2921)	8.9954*** (2.1154)	9.0476*** (2.1519)	8.8052*** (2.0141)	9.2547*** (2.0802)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obj.	4,138	3,781	4,121	4,138	4,131	3,799
Pseudo R ²	0.28	0.28	0.28	0.28	0.29	0.28

Table 8 shows the results of the logit analysis. In general, the greater the financial distress of incumbent controlling shareholders, the more likely the takeover is to be made. Specifically, the coefficients of continuous variables among financial distress proxies are all negative, meaning that controlling shareholders' own financial distress leads to the sale of a subsidiary. However, the effect of *Lnintcov* and *Kscore2* on the probability of being a seller is not statistically significant, although the coefficient of *ROA* is significant. Meanwhile, the coefficients of dummy variables among financial distress proxies are all positive and statistically significant. In general, these results suggest that controlling shareholders fail to maintain control due to their own financial distress, resulting in the transfer of control.

IV. Estimates of Takeovers' Effect on Financial Distress

The preceding analysis has shown that financial distress can be a motive for takeover. However, in order for the takeover to take place, it is necessary to make a deal with the acquirer. Thus, we look at the intention of the acquirer to buy the distressed company. We hypothesize that the acquirer is taking over based on empire-building motives. Thus, it is expected that the performance of the acquirer after the acquisition will deteriorate. Also, the financial distress of the target will not be improved.

1. Financial Distress After the Takeover

We estimate multivariate models evaluating firms' financial distress and evaluate whether they change when the firm is acquired, controlling for other potentially relevant factors. To test this hypothesis, we estimate equations predicting financial distress in a similar way to Erel, Chang, and Weisbach (2015). Specifically, we estimate the following specification:

$$Distress = a + bAFTER + cControls + e,$$

where *AFTER* is a dummy variable that takes a value of one after the takeover. The dependent variables are financial distress proxies such as ROA, Lnintcov, and Kscores. Control variables are the same as in the ordered logit model in the previous section. We also include 2-digit industry fixed effects and year fixed effects, and use industry clustered standard errors in our models. We report the result from corresponding logit models for the discrete dependent variables such as Deficit, Caper, and Dintcov. We establish a data set of the five years surrounding the takeover and exclude the firm-year observations of the takeover year. Therefore, the sample includes the two years preceding and following the takeover for the acquirers and the targets, respectively.

The estimates in the financial distress proxies in Panel A of Table 9 are consistent with the hypothesis that the acquirer takes over based on empire-building motives. In particular, when the dependent variable is a continuous variable among financial distress proxies, the coefficients of *AFTER* are all significantly negative, and when the dependent variable is a dummy variable, the coefficients of *AFTER* are all significantly positive. This indicates that the financial distress of acquirer has increased after the takeover. Panel B, on the other hand, shows an increase in the financial distress of the targets after the takeover. In other words, when the dependent variable is a continuous variable among financial distress proxies, the coefficients of *AFTER* are all significantly negative, and when the dependent variable is a dummy variable, the coefficients of *AFTER* are all significantly positive, except Dintcov. These results are not consistent with the findings of Erel et al. (2015) that acquisitions relieve financial frictions of target firms in a way that improves the financial efficiency of the subsidiary.

Table 9. Effect of the Takeover on Financial Distress

This table shows the estimates of an equation predicting financial distress. AFTER is a binary variable that has a value of 1 for the years after the takeover, and 0 otherwise. Panel A presents the effect of the takeover on the financial distress of acquirers. Panel B presents the effect of the takeover on the financial distress of targets. Standard errors (reported in parentheses) are clustered at the 2-digit industry level. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A. Effect of Takeover on Financial Distress of Acquirers						
	OLS	OLS	OLS	LOGIT	LOGIT	LOGIT
	Dep=ROA	Dep=Lntcov	Dep=Kscore1	Dep=Deficit	Dep=Caper	Dep=Dintcov
	(1)	(2)	(3)	(4)	(5)	(6)
<i>AFTER</i>	-0.0478*** (0.0162)	-0.0960** (0.0382)	-3.1852*** (0.7515)	0.5009*** (0.1807)	0.6965*** (0.2115)	0.5583*** (0.1484)
Size	0.0391*** (0.0086)	0.1035*** (0.0301)	4.2325*** (0.6067)	-0.6363*** (0.1283)	-0.7443*** (0.1113)	-0.3356*** (0.1215)
Lev	-0.2378*** (0.0418)	-0.0528 (0.0822)	-20.8436*** (1.7170)	0.7000* (0.4206)	1.4953*** (0.5491)	1.0963* (0.6266)
Cash	0.1745*** (0.0549)	1.4616** (0.5553)	9.2378* (5.0663)	-1.1917 (0.8226)	0.5720 (1.1287)	1.0922 (0.7464)
Age	-0.0014*** (0.0005)	-0.0026 (0.0022)	-0.0445 (0.0341)	0.0231*** (0.0079)	0.0225** (0.0087)	0.0139* (0.0082)
Sgr	0.0173** (0.0074)	-0.0027 (0.0123)	0.6386** (0.2980)	-0.0330 (0.0594)	-0.0359 (0.0604)	-0.2847** (0.1377)
Fcf	0.0080 (0.0552)	0.0066 (0.0332)	2.1666 (1.4797)	-0.0458 (0.4045)	-5.2665*** (1.1453)	-8.4134*** (1.8783)
Tang	0.0029 (0.0751)	-0.1384 (0.0850)	-3.8367 (3.2689)	-0.0112 (0.7074)	-0.9826* (0.5792)	0.0103 (0.7147)
Cons.	-0.6359*** (0.1762)	3.2702*** (0.3825)	-71.9484*** (12.0262)	9.3237*** (2.3912)	11.8322*** (2.0994)	6.0623*** (2.1163)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obj.	1,387	1,295	1,372	1,341	1,349	1,272
R ² or Pseudo R ²	0.35	0.21	0.57	0.20	0.30	0.30

Panel B. Effect of Takeover on Financial Distress of Targets

	OLS Dep=ROA (1)	OLS Dep=Lnintcov (2)	OLS Dep=Kscore1 (3)	LOGIT Dep=Deficit (4)	LOGIT Dep=Caper (5)	LOGIT Dep=Dintcov (6)
<i>AFTER</i>	−0.0486*** (0.0155)	−0.2638*** (0.0871)	−3.4241*** (0.7086)	0.3360*** (0.0988)	0.7543*** (0.0888)	0.0186 (0.1153)
Size	0.2204*** (0.0294)	0.0442 (0.0517)	7.5302*** (1.2485)	−0.5260*** (0.0851)	−0.7932*** (0.0940)	−0.4669*** (0.0898)
Lev	−0.8120*** (0.0946)	−0.5983*** (0.1947)	−29.1385*** (1.9624)	1.1755** (0.5015)	3.7893*** (0.3216)	2.4779*** (0.2900)
Cash	0.3115 (0.2630)	4.0393*** (1.1387)	−1.5579 (6.7426)	−0.3885 (0.7920)	−0.0788 (0.7383)	0.3560 (0.5396)
Age	−0.0025 (0.0018)	−0.0123*** (0.0038)	−0.0838* (0.0464)	0.0194*** (0.0052)	0.0302*** (0.0074)	0.0046 (0.0059)
Sgr	0.0001 (0.0001)	0.0000 (0.0001)	0.0014 (0.0013)	0.0001 (0.0002)	0.0002 (0.0002)	−0.0001 (0.0004)
Lown	0.0039*** (0.0014)	0.0169*** (0.0027)	0.1025*** (0.0301)	−0.0261*** (0.0040)	−0.0416*** (0.0039)	−0.0192*** (0.0033)
Fown	−0.0051*** (0.0012)	0.0287*** (0.0059)	−0.1265*** (0.0422)	−0.0087 (0.0098)	0.0014 (0.0080)	−0.0118 (0.0100)
Mtb	0.0017 (0.0012)	−0.0014 (0.0012)	0.1107* (0.0627)	0.0035 (0.0073)	0.0269** (0.0136)	−0.0020 (0.0035)
Fcf	0.3998 (0.5111)	−0.2391 (0.1541)	45.3604*** (9.2320)	−2.1908 (1.8308)	−5.7262*** (0.4534)	−8.7889*** (0.8342)
Tang	0.0860 (0.1708)	−0.5530 (0.3648)	−15.5815*** (4.4901)	0.8417** (0.3436)	0.7886** (0.3173)	0.8850** (0.4387)
Cons.	−4.2054*** (0.4910)	0.6433 (1.0889)	−124.2286*** (22.8105)	3.1549 (2.0010)	0.9753 (2.1634)	−1.7938 (1.8524)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obj.	4,855	2,435	4,854	4,811	4,817	4,606
R ² or Pseudo R ²	0.55	0.28	0.77	0.22	0.38	0.31

2. Robustness Checks

The analysis of estimating the final distress after the takeover in the previous section is only intended for companies where a takeover occurred, so it is not known how the degree of distress would have changed if the takeover did not occur. Therefore, we use a placebo test to check if the takeover has a similar effect on financial distress even in companies that are not actually taken over.

More specifically, we use propensity score matching to construct a control group similar to that of the acquirer and target based on the year before the takeover. Matching is performed in two stages. First, we construct a logit model using variables that represent a firm's characteristics to calculate a propensity score. The probability of becoming an acquirer is calculated for all companies regardless of whether they are actual acquirers. The next step is to divide all firms into acquirers and non-acquirers (or targets and non-targets), and then find and match the acquirer and non-acquirer pairs with the closest propensity score. Matching is carried out by industry so that two firms in the matched pair are in the same industry. In addition, a caliper method that places an upper limit on the propensity score distance is used to improve the quality of matching. In this study, we use the following variables of the year before takeover to produce a propensity score: total assets (firm size), sales growth rate (growth opportunity), leverage (capital structure), and cash holdings (liquidity). We match firms using the propensity score in the same industry (KSIC 2-digit) with Caliper=0.05 without replacement. Further, if the acquirer is a publicly traded firm, it is matched with other publicly traded firms. Inversely, if the acquirer is a privately held firm, it is matched with other privately held firms. On the other hand, all targets in the sample are publicly traded, and their matched controls are also publicly traded. Table 10 shows the results of a balance test to verify that the matching of acquirers and non-acquirers (or targets and non-targets) was successful.

Table 10. Balance Tests

This table determines whether the observed characteristics are significantly different between the treated group and the control group. Propensity score matching is used to construct a control group similar to that of the acquirer and target based on the year before the takeover. We use the observed characteristics to calculate a propensity score such as total assets (firm size), sales growth rate (growth opportunity), leverage (capital structure), and cash holdings (liquidity), and match firms in the same industry (KSIC 2-digit) with Caliper=0.05 without replacement. If the acquirer is a publicly traded firm, it is matched with the publicly traded firms. Inversely, if the acquirer is a privately held firm, it is matched with the privately held firms. On the other hand, all targets in the sample are publicly traded, and their matched controls are also publicly traded. Panel A compares the characteristics of non-acquirers and acquirers after matching. Panel B compares the characteristics of non-targets and targets after matching.

Panel A. Acquirer and non-acquirer controls					
	Non-acquirer (N=342)	Acquirer (N=342)	Diff	t Value	Pr > t
Asset	594	649	-54.56	-0.28	0.7826
Sales growth	0.24	0.23	0.01	0.06	0.9496
Leverage	0.47	0.47	-0.01	-0.29	0.7690
Age	21.81	22.4	-0.59	-0.52	0.6010
Cash	36	34	1.68	0.14	0.8893
Panel B. Target and non-target controls					
	Non-target (N=1,117)	Target (N=1,117)	Diff	t Value	Pr > t
Asset	181	174	6.35	0.20	0.8428
Sales growth	13	12	1.04	0.38	0.7062
Leverage	0.56	0.54	0.02	1.48	0.1381
Age	21.61	21.97	-0.36	-0.65	0.5166
Cash	13	11	1.92	0.77	0.4401

Panel A of Table 10 shows that the non-acquirers are not significantly different from the acquirers in size, growth opportunities, capital structure, age, and liquidity. Similarly, in Panel B, non-targets consist of firms that do not differ from the targets in terms of size, growth opportunities, capital structures, age, and liquidity. Therefore, we use non-acquirer control and non-target control to analyze whether the financial distress estimates change before and after the matching point with the same model as in Table 9.

Table 11. Placebo Tests

This table estimates the same regression as Table 9 using matched controls to check if the financial distress changes in the control group. Standard errors (reported in parentheses) are clustered at the 2-digit industry level. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A. Effect of Takeover on Financial Distress of Non-acquirers						
	OLS Dep=ROA	OLS Dep=Lnintcov	OLS Dep=Kscore2	LOGIT Dep=Deficit	LOGIT Dep=Caper	LOGIT Dep=Dintcov
	(1)	(2)	(3)	(4)	(5)	(6)
<i>AFTER</i>	0.0046 (0.0070)	0.0590 (0.0456)	0.1216 (0.5983)	-0.0189 (0.2179)	-0.3677** (0.1762)	-0.1230 (0.2354)
Size	0.0154*** (0.0053)	0.0150 (0.0301)	2.5805*** (0.3677)	-0.0838 (0.1603)	-0.5381*** (0.1482)	-0.1146 (0.1101)
Lev	-0.1814*** (0.0395)	-0.6066*** (0.1295)	-25.8789*** (1.3877)	2.6008*** (0.6014)	4.3918*** (1.2398)	2.5486*** (0.5609)
Cash	0.0348 (0.0620)	1.1729** (0.5190)	4.5147 (4.8935)	1.1704 (1.1186)	-0.0876 (1.6351)	-0.1087 (0.9217)
Age	-0.0012*** (0.0004)	0.0034 (0.0053)	-0.0613* (0.0357)	0.0015 (0.0105)	0.0261 (0.0160)	0.0204** (0.0082)
Sgr	0.0227** (0.0099)	-0.0005 (0.0207)	0.5711 (0.3487)	-0.0791 (0.1498)	-0.0068 (0.0861)	-0.4236 (0.3428)
Fcf	0.1846 (0.1256)	0.9305* (0.4882)	9.5803** (3.9400)	-3.5849 (2.4267)	-1.9524 (1.8649)	-5.3744* (2.9040)
Tang	0.0028 (0.0307)	-0.0412 (0.1752)	-2.8199 (2.2909)	0.7805 (0.7682)	0.6856 (0.8712)	0.7967 (0.7280)
Cons	-0.4067*** (0.1203)	4.6141*** (0.6045)	-36.0971*** (7.2550)	-0.8707 (3.6094)	9.3004*** (2.4135)	0.2127 (2.3509)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obj.	1,136	966	1,129	1,012	1,006	953
R ² or Pseudo R ²	0.26	0.21	0.65	0.21	0.30	0.21

Panel B. Effect of Takeover on Financial Distress of Non-targets

	OLS Dep=ROA (1)	OLS Dep=Lntcov (2)	OLS Dep=Kscore1 (3)	LOGIT Dep=Deficit (4)	LOGIT Dep=Caper (5)	LOGIT Dep=Dintcov (6)
<i>AFTER</i>	-0.0009 (0.0111)	-0.0685 (0.0602)	-0.1176 (0.3844)	-0.1493 (0.0994)	0.1005 (0.1107)	0.0041 (0.0598)
Size	0.0753*** (0.0173)	-0.0006 (0.0356)	3.6824*** (0.6970)	-0.1307 (0.1536)	-0.4067*** (0.0873)	-0.2055*** (0.0721)
Lev	-0.8599*** (0.2037)	-2.1282*** (0.2521)	-31.1003*** (4.1893)	2.6916*** (0.6802)	5.6671*** (0.7457)	3.5896*** (0.3579)
Cash	-0.5204*** (0.0871)	3.2424*** (0.7407)	6.4612 (8.5582)	-1.1511 (1.1497)	-0.9522 (1.3986)	-1.0940 (0.9239)
Age	0.0009 (0.0009)	-0.0017 (0.0030)	-0.0528*** (0.0176)	0.0020 (0.0058)	0.0106* (0.0058)	-0.0039 (0.0067)
Sgr	0.0003*** (0.0001)	0.0016*** (0.0004)	0.0072* (0.0038)	-0.0040 (0.0030)	-0.0036 (0.0028)	-0.0046 (0.0044)
Lown	-0.0005 (0.0009)	0.0084*** (0.0025)	0.0291 (0.0352)	-0.0249*** (0.0044)	-0.0265*** (0.0076)	-0.0172*** (0.0041)
Fown	-0.0043*** (0.0014)	0.0127** (0.0052)	-0.0533 (0.0373)	-0.0233 (0.0194)	0.0086 (0.0077)	-0.0042 (0.0131)
Mtb	0.0077 (0.0051)	-0.0088 (0.0082)	0.9817*** (0.3318)	0.0480*** (0.0178)	0.0582* (0.0335)	-0.0197 (0.0134)
Fcf	1.0163*** (0.1930)	3.1123*** (0.4542)	32.1535*** (7.8135)	-5.5950*** (0.6447)	-4.0735*** (1.0672)	-8.1958*** (0.6821)
Tang	0.1020 (0.0872)	-1.5993*** (0.3185)	-1.1642 (3.8189)	0.9231*** (0.3373)	-1.2075*** (0.3944)	1.2094*** (0.3653)
Cons	-1.2823*** (0.3394)	4.2341*** (0.5752)	-38.9101** (14.8633)	-1.0165 (2.6943)	3.4982** (1.6753)	3.3858*** (1.2727)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obj.	3,057	2,420	3,056	3,013	2,980	2,867
R ² or Pseudo R ²	0.64	0.40	0.64	0.27	0.34	0.27

Table 11 shows that there is no effect of the takeover on financial distress in both control groups (non-acquirer control and non-target control). Panel A, which specifically analyzes non-acquirers, indicates that when the proxy of financial distress is a continuous variable, the regression coefficients of *AFTER* are all positive but statistically insignificant. In addition, when the proxy of financial distress is a dummy variable, the regression coefficients of *AFTER* are all negative. Panel B, on the other hand, analyzes non-targets and shows that all of the regression coefficients of *AFTER* are not statistically significant, so there is no increase in the final distress. These placebo tests provide more confidence that the increase in financial distress of acquirers and targets is the effect of the takeover.

V. Conclusions

Unlike US companies whose shares are dispersed, in many countries, the shares are concentrated on the controlling shareholders. However, there have been few studies on takeovers through the transfer of control between controlling shareholders. Korea is one of the countries that have controlling shareholders who own a substantial share. A control block is transferred between the controlling shareholders in M&As. Therefore, I examined the motives and characteristics of takeovers in Korea.

The evidence in this paper shows that, in Korea, firms in financial distress are likely to be targeted repeatedly for takeover. Takeovers rarely occur in normal circumstances due to the high private benefits enjoyed by the controlling shareholder, but if a firm falls into financial trouble, and its private benefits shrink, then it could be considered as a target. At the same time, the target firm needs outside capital to resolve its financial distress. That is the reason that the New-type takeover is widely used as a solution in companies with severe financial distress. In terms of sellers, they failed to maintain control because of their own financial difficulties. Empirical evidence indicates that the sellers are in financial difficulties just

before selling their subsidiary. Thus, the financial distress of a target or a seller can be a motive for a takeover. However, takeovers motivated by financial distress are not successful since bidders acquire the distressed target based on the intention of expanding the size rather than increasing the value of the company. Therefore, takeovers are not effective in solving the financial distress, and distressed firms are repeatedly targeted.

The contributions of this study can be summarized as follows: First, it suggests that the financial distress of a target or its controlling shareholders is a motive for corporate takeovers. Second, we introduce the New-type takeover which has the simultaneous effects of acquisition and financing, and compare it to the Old-type which has been mainly studied in previous literature. Lastly, this paper can also contribute to the literature on equity financing by providing an example of external equity financing is used as a last resort in M&A activities.

References

- Akhigbe, A., A. D. Martin, and A. M. Whyte (2007), "Partial Acquisitions, the Acquisition Probability Hypothesis, and the Abnormal Returns to Partial Targets," *Journal of Banking and Finance*, Vol. 31, pp. 3080-3101.
- Albuquerque, R., and E. Schroth (2010), "Quantifying Private Benefits of Control Firm a Structural Model of Block Trade," *Journal of Financial Economics*, Vol. 96(1), pp.33-55.
- Altman, E., Y. H. Eom, and D. W. Kim (1995), "Failure Prediction: Evidence from Korea," *Journal of International Financial Management and Accounting*, Vol. 6(3), pp.230-249.
- Andrade, G., and S. N. Kaplan (1998), "How Costly is Financial (not Economic) Distress? Evidence from Highly Leveraged Transactions that Became Distressed," *Journal of Finance*, Vol. 53(5), pp. 1443-493.
- Ang, J., and N. Mauck (2011), "Fire Sale Acquisitions: Myth vs. Reality," *Journal of Banking & Finance*, Vol. 35, pp. 532-543.
- Barclay, M. J., and C. G. Holderness (1989), "Private Benefit from Control of Public Corporations," *Journal of Financial Economics*, Vol. 25, pp. 371-395.
- Bernanke, B. S., and M. Gertler (1995), "Inside the Black Box: The Credit Channel of Monetary Policy Transmission," *The Journal of Economic Perspectives*, Vol. 9(4), pp. 27-48.
- Boone, A. L., and J. H. Mulherin (2007), "Do Termination Provisions Truncate the Takeover Bidding Process?," *The Review of Financial Studies*, Vol. 20(2), pp. 461-489.
- Bruyland, E., and W. Maeseneire (2016), "The Risk Effects of Acquiring Distressed Firms," *Journal of Business Finance & Accounting*, Vol. 43(9-10), pp. 1297-1324.

- Chakraborty, I., and N. Gantchev (2013), “Does Shareholder Coordination Matter: Evidence from Private Placements,” *Journal of Financial Economics*, Vol. 108(1), pp. 213-230.
- Chaplinsky, S., and D. Haushalter (2010), “Financing under Extreme Risk: Contract Terms and Returns to Private Investments in Public Equity,” *Review of Financial Studies*, Vol. 23(7), pp. 2789-2820.
- Claessens, S., S. Djankov, and L. H.P. Lang, (2000), “The Separation of Ownership and Control in East Asian Corporations,” *Journal of Financial Economics*, Vol. 58(1-2), pp. 81-112.
- Clyde, P. (1997), “Do Institutional Shareholders Police Management?,” *Managerial and Decision Economics*, Vol. 18, pp. 1-10.
- Cronqvist, H., and M. Nilsson (2005), “The Choice between Rights Offerings and Private Equity Placements,” *Journal of Financial Economics*, Vol. 78(2), pp. 375-407.
- Dyck, A., and L. Zingales (2004), “Private Benefits of Control: an International Comparison,” *Journal of Finance*, Vol. 59(2), pp. 537-600.
- Eckbo, B. E. (2009), “Bidding Strategies and Takeover Premiums: A Review,” *Journal of Corporate Finance*, Vol. 15, pp. 149-178.
- Erel, I., Y. Jang, and, M. S. Weisbach (2015), “Do Acquisitions Relieve Target Firms’ Financial Constraints,” *Journal of Finance*, Vol. 70(1), pp. 289-328.
- Faccio, M., and L. H.P. Lang (2002), “The Ultimate Ownership of Western European Corporations,” *Journal of Financial Economics*, Vol. 65, pp. 365-395.
- Faleye, O. (2004), “Cash and Corporate Control,” *Journal of Finance*, Vol. 59(5), pp. 2041-2060.

- Gilson, S. C. (1989), "Management Turnover and Financial Distress," *Journal of Financial Economics*, Vol. 25, pp.241-262.
- Gomes, A., and G. Phillips (2012), "Why do Public Firms Issue Private and Public Securities," *Journal of Financial Intermediation*, Vol. 21(4), pp.619-658.
- Harford, J., M. Humphery-Jenner, and R. Powell (2012), "The Sources of Value Destruction in Acquisitions by Entrenched Managers," *Journal of Financial Economics*, Vol. 106, pp.247-261.
- Hasbrouck J. (1985), "The Characteristics of Takeover Targets Q and Other Measures," *Journal of Banking and Finance*, Vol. 9, pp. 351-362.
- Hertzel, M., and R. L. Smith (1993), "Market Discounts and Shareholder Gains for Placing Equity Privately," *Journal of Finance*, Vol. 48(2), pp. 459-485.
- Högfeldt, P., and A. Oborenko (2005), "Does Market Timing or Enhanced Pecking Order Determine Capital Structure?," *European Corporate Governance Institute (ECGI) Research Paper*, Vol. 72, pp. 1-46.
- Jensen, M. C. (1986), "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers," *American Economic Review*, Vol. 76(2), pp.323-329.
- Kim, W. (2012), "Investor Protection and the Mode of Acquisition: Implications for Ownership Dilution and Formation of Pyramids," *Financial Management*, Vol. 41(1), pp. 55-93.
- Kim, W., Y. K. Ko, and S. Wang (2018), "Equity Issues and Debt Restructuring: Evidence from an Emerging Market," *Working paper*, Seoul National University
- Krishnamurthy, S., P. Spindt, V. Subramaniam, and T. Woidtke (2005), "Does Investor Identity Matter in Equity Issues: Evidence from Private Placements," *Journal of Financial Intermediation*, Vol. 14(2), pp. 210-238.

- La Porta, R., F. Lopez-de-Silanes, and A. Shleifer (1999), "Corporate Ownership around the World," *Journal of Finance*, Vol. 54(2), pp. 471-517.
- Lee, S., and K. Kang (2009), "M&A Method as the Firm Reorganization based on the Measure of the Stock Market," *Korean Journal of Accounting Research*, Vol. 14(2), pp. 117-148.
- Liao, R. C. (2014), "What Drives Corporate Minority Acquisitions around the World: The case for financial constraints," *Journal of Corporate Finance*, Vol. 26, p. 78-95.
- Mitchell, M. L., and K. Lehn (1990), "Do Bad Bidders Become Good Targets?" *Journal of Political Economy*, Vol. 98(2), pp. 372-398.
- Moreno-Bromberg, S., and Q. Vo (2017), "Resolution of Financial Distress under Agency Frictions," *Journal of Banking and Finance*, Vol. 82, pp. 40-58.
- Nenova, T. (2003), "The Value of Corporate Voting Rights and Control: A Cross-country Analysis," *Journal of Financial Economics*, Vol. 68(3), pp. 325-351.
- Officer, M. S. (2007), "The price of corporate liquidity: Acquisition discounts for unlisted targets," *Journal of Financial Economics*, Vol. 83, pp. 571-598.
- Opler T. C., and S. Titman (1994), "Financial Distress and Corporate Performance," *Journal of Finance*, Vol. 49(3), pp.1015-1040.
- Palepu, K. G. (1986), "Predicting Takeover Targets: A Methodological and Empirical Analysis," *Journal of Accounting and Economics*, Vol. 8, pp. 3-35.
- Park, K. S., C. Jung, and S. M. Kim (2017), "Policy Measures for M&A Laws and Regulations in Korea: Focused on Reinforcement of Minority

- Shareholder Rights,” *Korean Journal of Financial Studies*, Vol. 46(1), pp. 1-33.
- Purnanandam, A. (2008), “Financial Distress and Corporate Risk Management: Theory and Evidence,” *Journal of Financial Economics*, Vol. 87, pp. 706-739.
- Rossi, S., and P. F. Volpin (2004), “Cross Country Determinants of Merger and Acquisitions,” *Journal of Financial Economics*, Vol. 74, pp.277-304.
- Schwert, G. W. (2000), “Hostility in Takeovers: In the Eyes of the Beholder,” *Journal of Finance*, Vol. 55(6), pp. 2599-2640.
- Shleifer, A., and R. W. Vishny (1986), “Large Shareholders and Corporate Control,” *Journal of Political Economy*, Vol. 94(3), pp. 461-488.
- Shleifer, A., and R. W. Vishny (1988), “Value Maximization and the Acquisition Process,” *Journal of Economic Perspectives*, Vol. 2(1), pp. 7-20.
- Smith, R. L., and J. Kim (1994), “The Combined Effects of Free Cash Flow and Financial Slack on Bidder and Target Stock Returns,” *Journal of Business*, Vol. 67(2), pp.281-310
- Stulz, R. (1988), “Managerial Control of Voting Rights,” *Journal of Financial Economics*, Vol. 20, pp. 25-54.
- Ushijima, T., and U. Schaeede (2014), “The Market for Corporate Subsidiaries in Japan: An Empirical Study of Trades among Listed Firms,” *Journal of The Japanese and International Economies*, Vol. 31, pp. 36-52.
- Wruck, K. H. (1990),” Financial Distress, Reorganization, and Organizational Efficiency,” *Journal of Financial Economics*, Vol. 27, pp. 419-444.
- Wu, Y. (2004), “The Choice of Equity-selling Mechanisms,” *Journal of Financial Economics*, Vol. 74(1), pp. 93-119.

Appendix: Definitions of Variables

Name	Descriptions
<i>Dependent variables</i>	
Target	A dummy variable with a value of 1 if the firm is a target, and 0 otherwise
Type	A variable with a value of 1 if the firm is a target of a New-type takeover, 2 if it is that of an Old-type takeover, and 3 if it is not a target
<i>Distress variables</i>	
ROA	Net income scaled by the book value of total assets
Lnintcov	Log value of 2 plus operating income divided by interest expense
Kscore	Altman et al. (1995) introduced the following model to predict the probability of bankruptcy in the Korean companies: $Kscore1 = -17.862 + 1.472 \times (X1) + 3.041 \times (X2) + 14.839 \times (X3) + 1.516 \times (X4)$ $Kscore2 = -18.696 + 1.501 \times (X1) + 2.706 \times (X2) + 19.760 \times (X3) + 1.146 \times (X4')$ $X1: \log(\text{Total assets})$ $X2: \log(\text{Sales/Total assets})$ $X3: \text{Retained earnings/Total assets}$ $X4(\text{KS2}): \text{Market value of equity/Total liabilities}$ $X4'(\text{KS2}): \text{Book value of equity/ Total liabilities}$
Deficit	A dummy variable with a value of 1 if net income is negative for two consecutive years, or 0 otherwise
Caper	A dummy variable with a 1 if capital erosion occurs, or 0 otherwise. Capital erosion is considered to occur when the paid-in-capital (the total book equity-retained earnings) is greater than or equal to the total book equity.
Dintcov	A dummy variable with an value of 1 if operating income is less than interest expense or 0 otherwise
<i>Control variables</i>	
Size	Log of total assets
Lev	Total liabilities/Total assets
Cash	Cash and cash equivalents/Total assets
Age	Number of years from the established year
Sgr	Sales growth rate
Lown	The largest shareholder ownership
Fown	The foreign investor ownership
Mtb	Market value of equity/Book value of equity
Fcf	Operating cash flow/Total assets
Tang	Tangible assets/Total assets

<Abstract in Korean>

기업인수의 재무적 성과: 한국의 사례

조은아*

본 연구는 데이터 수집의 어려움 등으로 연구가 저조했던 국내 기업인수시장에 대해 기업인수의 발생원인과 재무적 성과를 비교하기 위하여 한국거래소 공시시스템(KIND)에 공시된 2004-2017년 중 “최대주주 변경” 자료를 이용하여 로짓 분석과 패널분석을 수행하였다. 분석결과 우리나라에서는 기업인수의 주요한 이유가 피인수기업과 그 모기업의 재무적 부실인 것으로 나타났으며, 재무적으로 부실한 일부 기업이 반복적으로 피인수되는 경향이 나타났다. 기업인수 이후의 재무성과는 피인수기업과 인수기업 모두 재무적 부실이 악화되는 것으로 나타나 우리나라에서 기업인수가 주로 재무적 부실과 관련하여 발생하고 있음에도 불구하고 이를 해소하는 역할을 하지 못하고 있음을 보여준다.

핵심 주제어: 기업인수, 재무적 부실, 유상증자, 재무적 성과, 인수방식

JEL Classification: G34, G32, G30, L25

* 한국은행 경제연구원 국제경제연구실 부연구위원(전화: 02-759-5483, E-mail: echo@bok.or.kr)

이 연구내용은 집필자의 개인의견이며 한국은행의 공식견해와는 무관합니다. 따라서 본 논문의 내용을 보도하거나 인용할 경우에는 집필자명을 반드시 명시하여주시기 바랍니다.

BOK 경제연구 발간목록

한국은행 경제연구원에서는 Working Paper인 『BOK 경제연구』를 수시로 발간하고 있습니다. 『BOK 경제연구』는 주요 경제 현상 및 정책 효과에 대한 직관적 설명 뿐 아니라 깊이 있는 이론 또는 실증 분석을 제공함으로써 엄밀한 논증에 초점을 두는 학술논문 형태의 연구이며 한국은행 직원 및 한국은행 연구용역사업의 연구 결과물이 수록되고 있습니다. 『BOK 경제연구』는 한국은행 경제연구원 홈페이지(<http://imer.bok.or.kr>)에서 다운로드하여 보실 수 있습니다.

제2016 -1	The Spillover Effects of U.S. Monetary Policy on Emerging Market Economies: Breaks, Asymmetries and Fundamentals	Geun-Young Kim · Hail Park · Peter Tillmann
2	Pass-Through of Imported Input Prices to Domestic Producer Prices: Evidence from Sector-Level Data	JaeBin Ahn · Chang-Gui Park · Chanho Park
3	Spillovers from U.S. Unconventional Monetary Policy and Its Normalization to Emerging Markets: A Capital Flow Perspective	Sangwon Suh · Byung-Soo Koo
4	Stock Returns and Mutual Fund Flows in the Korean Financial Market: A System Approach	Jaebeom Kim · Jung-Min Kim
5	정책금리 변동이 성별·세대별 고용률에 미치는 영향	정성엽
6	From Firm-level Imports to Aggregate Productivity: Evidence from Korean Manufacturing Firms Data	JaeBin Ahn · Moon Jung Choi
7	자유무역협정(FTA)이 한국 기업의 기업내 무역에 미친 효과	전봉걸 · 김은숙 · 이주용
8	The Relation Between Monetary and Macroprudential Policy	Jong Ku Kang
9	조세피난처 투자자가 투자 기업 및 주식 시장에 미치는 영향	정호성 · 김순호
10	주택실거래 자료를 이용한 주택부문 거시 건전성 정책 효과 분석	정호성 · 이지은
11	Does Intra-Regional Trade Matter in Regional Stock Markets?: New Evidence from Asia-Pacific Region	Sei-Wan Kim · Moon Jung Choi
12	Liability, Information, and Anti-fraud Investment in a Layered Retail Payment Structure	Kyoung-Soo Yoon · Jooyong Jun
13	Testing the Labor Market Dualism in Korea	Sungyup Chung · Sunyoung Jung
14	북한 이중경제 사회계정행렬 추정을 통한 비공식부문 분석	최지영

제2016 -15	Divergent EME Responses to Global and Domestic Monetary Policy Shocks	Woon Gyu Choi · Byongju Lee · Taesu Kang · Geun-Young Kim
16	Loan Rate Differences across Financial Sectors: A Mechanism Design Approach	Byoung-Ki Kim · Jun Gyu Min
17	근로자의 고용형태가 임금 및 소득 분포에 미치는 영향	최충 · 정성엽
18	Endogeneity of Inflation Target	Soyoung Kim · Geunhyung Yim
19	Who Are the First Users of a Newly-Emerging International Currency? A Demand-Side Study of Chinese Renminbi Internationalization	Hyoung-kyu Chey · Geun-Young Kim · Dong Hyun Lee
20	기업 취약성 지수 개발 및 기업 부실화에 대한 영향 분석	최영준
21	US Interest Rate Policy Spillover and International Capital Flow: Evidence from Korea	Jieun Lee · Jung-Min Kim · Jong Kook Shin
제2017 -1	가계부채가 소비와 경제성장에 미치는 영향 - 유량효과와 저장효과 분석 -	강종구
2	Which Monetary Shocks Matter in Small Open Economies? Evidence from SVARs	Jongrim Ha · Inhwan So
3	FTA의 물가 안정화 효과 분석	곽노선 · 임호성
4	The Effect of Labor Market Polarization on the College Students' Employment	Sungyup Chung
5	국내 자영업의 폐업을 결정요인 분석	남윤미
6	차주별 패널자료를 이용한 주택담보대출의 연체요인에 대한 연구	정호성
7	국면전환 확산과정모형을 이용한 콜금리 행태 분석	최승문 · 김병국

제2017-8	Behavioral Aspects of Household Portfolio Choice: Effects of Loss Aversion on Life Insurance Uptake and Savings	In Do Hwang
9	신용공급 충격이 재화별 소비에 미치는 영향	김광환 · 최석기
10	유가가 손익분기인플레이션에 미치는 영향	김진용 · 김준철 · 임형준
11	인구구조변화가 인플레이션의 장기 추세에 미치는 영향	강환구
12	종합적 상환여건을 반영한 과다부채 가계의 리스크 요인 분석	이동진 · 한진현
13	Crowding out in a Dual Currency Regime? Digital versus Fiat Currency	KiHoon Hong · Kyounghoon Park · Jongmin Yu
14	Improving Forecast Accuracy of Financial Vulnerability: Partial Least Squares Factor Model Approach	Hyeongwoo Kim · Kyunghwan Ko
15	Which Type of Trust Matters?: Interpersonal vs. Institutional vs. Political Trust	In Do Hwang
16	기업특성에 따른 연령별 고용행태 분석	이상욱 · 권철우 · 남윤미
17	Equity Market Globalization and Portfolio Rebalancing	Kyungkeun Kim · Dongwon Lee
18	The Effect of Market Volatility on Liquidity and Stock Returns in the Korean Stock Market	Jieun Lee · KeeH.Chung
19	Using Cheap Talk to Polarize or Unify a Group of Decision Makers	Daeyoung Jeong
20	패스트트랙 기업회생절차가 법정관리 기업의 이자보상비율에 미친 영향	최영준
21	인구고령화가 경제성장에 미치는 영향	안병권 · 김기호 · 육승환
22	고령화에 대응한 인구대책: OECD사례를 중심으로	김진일 · 박경훈

제2017 -23	인구구조변화와 경상수지	김경근 · 김소영
24	통일과 고령화	최지영
25	인구고령화가 주택시장에 미치는 영향	오강현 · 김솔 · 윤재준 · 안상기 · 권동휘
26	고령화가 대외투자에 미치는 영향	임진수 · 김영래
27	인구고령화가 가계의 자산 및 부채에 미치는 영향	조세형 · 이용민 · 김정훈
28	인구고령화에 따른 우리나라 산업구조 변화	강종구
29	인구구조 변화와 재정	송호신 · 허준영
30	인구고령화가 노동수급에 미치는 영향	이철희 · 이지은
31	인구 고령화가 금융산업에 미치는 영향	윤경수 · 차재훈 · 박소희 · 강선영
32	금리와 은행 수익성 간의 관계 분석	한재준 · 소인환
33	Bank Globalization and Monetary Policy Transmission in Small Open Economies	Inhwan So
34	기존 경영자 관리인(DIP) 제도의 회생기업 경영성과에 대한 영향	최영준
35	Transmission of Monetary Policy in Times of High Household Debt	Youngju Kim · Hyunjoon Lim
제2018 -1	4차 산업혁명과 한국의 혁신역량: 특허자료를 이용한 국가기술별 비교 분석, 1976-2015	이지홍 · 임현경 · 정대영
2	What Drives the Stock Market Comovements between Korea and China, Japan and the US?	Jinsoo Lee · Bok-Keun Yu
3	Who Improves or Worsens Liquidity in the Korean Treasury Bond Market?	Jieun Lee

제2018-4	Establishment Size and Wage Inequality: The Roles of Performance Pay and Rent Sharing	Sang-yoon Song
5	가계대출 부도요인 및 금융업권별 금융취약성: 자영업 차주를 중심으로	정호성
6	직업훈련이 청년취업률 제고에 미치는 영향	최충 · 김남주 · 최광성
7	재고투자와 경기변동에 대한 동학적 분석	서병선 · 장근호
8	Rare Disasters and Exchange Rates: An Empirical Investigation of Korean Exchange Rates under Tension between the Two Koreas	Cheolbeom Park · Suyeon Park
9	통화정책과 기업 설비투자 - 자산가격경로와 대차대조표경로 분석 -	박상준 · 육승환
10	Upgrading Product Quality: The Impact of Tariffs and Standards	Jihyun Eum
11	북한이탈주민의 신용행태에 관한 연구	정승호 · 민병기 · 김주원
12	Uncertainty Shocks and Asymmetric Dynamics in Korea: A Nonlinear Approach	Kevin Larcher · Jaebeom Kim · Youngju Kim
13	북한경제의 대외개방에 따른 경제적 후생 변화 분석	정혁 · 최창용 · 최지영
14	Central Bank Reputation and Inflation-Unemployment Performance: Empirical Evidence from an Executive Survey of 62 Countries	In Do Hwang
15	Reserve Accumulation and Bank Lending: Evidence from Korea	Youngjin Yun
16	The Banks' Swansong: Banking and the Financial Markets under Asymmetric Information	Jungu Yang

제2018-17	E-money: Legal Restrictions Theory and Monetary Policy	Ohik Kwon · Jaevin Park
18	글로벌 금융위기 전·후 외국인의 채권투자 결정요인 변화 분석: 한국의 사례	유복근
19	설비자본재 기술진보가 근로유형별 임금 및 고용에 미치는 영향	김남주
20	Fixed-Rate Loans and the Effectiveness of Monetary Policy	Sung Ho Park
21	Leverage, Hand-to-Mouth Households, and MPC Heterogeneity: Evidence from Korea	Sang-yoon Song
22	선진국 수입수요가 우리나라 수출에 미치는 영향	최문정 · 김경근
23	Cross-Border Bank Flows through Foreign Branches: Evidence from Korea	Youngjin Yun
24	Accounting for the Sources of the Recent Decline in Korea's Exports to China	Moon Jung Choi · Kei-Mu Yi
25	The Effects of Export Diversification on Macroeconomic Stabilization: Evidence from Korea	Jinsoo Lee · Bok-Keun Yu
26	Identifying Uncertainty Shocks due to Geopolitical Swings in Korea	Seohyun Lee · Inhwan So · Jongrim Ha
27	Monetary Policy and Income Inequality in Korea	Jongwook Park
28	How the Financial Market Can Dampen the Effects of Commodity Price Shocks	Myunghyun Kim
29	Which External Shock Matters in Small Open Economies? US Economic Policy Uncertainty vs. Global Risk Aversion	Youngju Kim · Hyunjoon Lim
30	Do Korean Exports Have Different Patterns over Different Regimes?: New Evidence from STAR-VECM	Sei-Wan Kim · Moon Jung Choi
31	기술진보와 청년고용	심명규 · 양희승 · 이서현

제2018-32	북한지역 장기주택수요 및 연관 주택건설투자 추정	이주영
33	기업규모간 임금격차 원인 분석	송상윤
34	우리나라 고용구조의 특징과 과제	장근호
35	창업의 장기 고용효과: 시군구 자료 분석	조성철 · 김기호
36	수출입과 기업의 노동수요	음지현 · 박진호 · 최문정
37	청년실업의 이력현상 분석	김남주
38	노동시장 이중구조와 노동생산성: OECD 국가를 중심으로	최충 · 최광성 · 이지은
39	한국과 일본의 청년실업 비교분석 및 시사점	박상준 · 김남주 · 장근호
40	노동시장의 이중구조와 정책대응: 해외사례 및 시사점	전병유 · 황인도 · 박광용
41	최저임금이 고용구조에 미치는 영향	송헌재 · 임현준 · 신우리
42	최저임금과 생산성: 우리나라 제조업의 사례	김규일 · 육승환
43	Transmission of U.S. Monetary Policy to Commodity Exporters and Importers	Myunghyun Kim
44	Determinants of Capital Flows in the Korean Bond Market	Soohyon Kim
45	Central Bank Credibility and Monetary Policy	Kwangyong Park
46	통화정책이 자본유출입에 미치는 영향: 행태방정식 분석	이명수 · 송승주

제2018 -47	Commodities and International Business Cycles	Myunghyun Kim
제2019 -1	Deciphering Monetary Policy Board Minutes through Text Mining Approach: The Case of Korea	Ki Young Park · Youngjoon Lee · Soohyon Kim
2	The Impacts of Macroeconomic News Announcements on Intraday Implied Volatility	Jieun Lee · Doojin Ryu
3	Taking a Bigger Slice of the Global Value Chain Pie: An Industry-level Analysis	Chong-Sup Kim · Seungho Lee · Jihyun Eum
4	Trend Growth Shocks and Asset Prices	Nam Gang Lee
5	Uncertainty, Attention Allocation and Monetary Policy Asymmetry	Kwangyong Park
6	Central Bank Digital Currency and Financial Stability	Ohik Kwon
7	은행의 수익 및 자산구조를 반영한 통화정책 위험선호경로	김익진 · 정호성
8	혁신기업에 대한 산업금융 지원: 이론모형 분석	강경훈 · 양준구
9	가계부채 제약하의 통화정책: 2주체 거시 모형(TANK)에서의 정량적 분석	정용승 · 송승주
10	Alchemy of Financial Innovation: Securitization, Liquidity and Optimal Monetary Policy	Jungu Yang
11	Measuring Monetary Policy Surprises Using Text Mining: The Case of Korea	Youngjoon Lee · Soohyon Kim · Ki Young Park
12	Tracking Uncertainty through the Relative Sentiment Shift Series	Seohyun Lee · Rickard Nyman
13	Intra-firm and Arm's Length Trade during the Global Financial Crisis: Evidence from Korean Manufacturing Firms	Moon Jung Choi · Ji Hyun Eum

제2019-14	특허자료를 이용한 우리나라 지식전파의 지역화 분석	이지홍 · 남윤미
15	Overhead Labour and Skill-Biased Technological Change: The Role of Product Diversification	Choong Hyun Nam
16	Does the Number of Countries in an International Business Cycle Model Matter?	Myunghyun Kim
17	High-Frequency Credit Spread Information and Macroeconomic Forecast Revision	Bruno Deschamps · Christos Ioannidis · Kook Ka
18	경제 분석을 위한 텍스트 마이닝	김수현
19	Takeover, Distress, and Equity Issuance: Evidence from Korea	Euna Cho