

非公開情報를 이용한 内部者去來와 株主의 富 〈국문요약〉

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미국의 證券去來法規에서는 기업의 内部者는 自己株式의 去來狀況을 차월 10일 이내에 證券去來委員會(SEC)에 보고하도록 규정하고, 특히 企業合併에 관한 内部情報가 공표되기 전에는 주식거래를 일체 금하고 있다. 최근 SEC가 일부 내부자 및 투자전문가들이 기업 합병에 관한 내부정보를 입수해서 이를 이용한 불법적인 거래를 행하여 막대한 수익을 취득했다고 발표함으로써 内部者去來에 대한 관심은 한층 더 고조되었다.

1970년대 발표된 内部者去來에 관한 연구는 그 초점을 株式市場 效率性에 두었다. 예를 들면, Jaffe는 SEC에서 매월 발간되고 있는 기업내부자들의 거래상황을 보고한 Official Summary of Security Transactions and Holdings 자료를 이용하여 이들의 投資成果를 분석한 결과 내부자들이 상당한 超過收益率(abnormal return)을 실현하고 있음을 발견함으로써 국내의 증시가 強型效率性에 못 미친다는 결론을 내렸다.

기존 문헌과는 달리 본 논문에서는 내부거래가 受動的인 株式投資者의 富에 미치는 영향을 분석하는 데 연구의 초점을 두고 있으며, 본 연구에 사용된 자료는 거래의 불법성을 SEC가 보도하기 전까지는 공개되지 않았으며 또 표본주식들은 모두 非合併會들이다.

분석결과에 의하면 관련주식의 非正常收益率은 불법거래당일의 평균이 1.4%이고, 거래주변일에는 非正常收益率이 나타나지 않고 있다. 이 연구결과는 내부정보 수입경쟁이 치열함을 간접적으로 나타내고 있으며, 내부정보 불법거래가 투자자에게 미치는 단기적인 영향은 부정적이 아님을 표시한다.

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Insider Trading on Nonpublic Information and Shareholders' Wealth

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Abstract

This paper examines the pecuniary effects stemming from insider trading in the equities of firms targeted for acquisition. Illegal exchanges by those having advantageous information are found to result in excessive returns to stockholders of the sought firms. However, unusual market activities are not typical immediately subsequent to the illegal trading date, suggesting that nonpublic information is synthesized by market mechanisms with sufficient speed so that others cannot profit by imitating the better informed traders. The obtained evidence does not support the contention that insider trading on nonpublic information harms the outsider stockholders of involved firms.

I. Introduction

Numerous studies document the abnormal returns realized by target company sha-

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reholders around the announcements of mergers or acquisitions. Further, it is well-known that (cumulatively) nearly half of the excessive returns arise prior to the public announcement date.¹⁾ Several theories account for the sources of such abnormal gains to target shareholders,²⁾ but relatively less attention has been given to addressing whether or not the appreciated target firm share values represent the unbiased future values of these equities. Poulsen and Jarrell(1987) attribute the observed preannouncement price rises to takeover speculations. Keown and Pinkerton(1981), on the other hand, conclude that the price runup reflects the market effects of insider trading and leakage of privy information. Their analysis uncovers no proof that corporate insiders extensively purchase their own firms' stock before the communal disclosure of merger-related information.

Previous explorations³⁾ of insider trading are based upon readily available data whose existence is due to the Securities Act of 1934. This landmark legislation requires insiders (corporate officers, directors, and stockholders owning more than 10 percent of common stock) to report their security transactions by the tenth day of the month following the transactions.⁴⁾ The resulting transaction data is contained in the Official Summary of Security Transactions and Holdings and published regularly. Unlike earlier works, the current paper makes use of illegal transactions that were not reported to the Securities and Exchange Commission (SEC) in accordance with the 1934 regulation, and is thus unavailable until the SEC brings charges to bear.

This paper examines several implications of illegal insider trading for the market and market participants. First, the direct effect on the market price of securities dealt illegally is explored. Second, a means difference test is carried out to contrast the behavior of share prices when no inside trading is apparent, with share prices when inside trading is known to have occurred. Third, the speed at which security prices come to reflect insider trading is investigated to determine if noninformed market participa-

1) For a comprehensive review of the empirical studies on the wealth effects of corporate ownership changes, see Manne(1965), Jensen and Rubak(1983) and Mikkelsen and Ruback(1985).

2) See Manne(1965), Lewellen(1971), Amihud and Lev(1981), and Asquith and Kim(1981).

3) The empirical studies which examined insider tradings include Lorie and Niederhoffer(1968), Jaffe(1974), Finnerty(1976), and Seyhun(1986), among others.

4) SEC Rule 14-3 specifies that not only insiders, but also any person who obtains nonpublic information about an impending tender offer, to disclose or abstain from trading on it.

nts are able to earn abnormal returns by mimicking the insiders' actions. Lastly, the implications for the wealth of shareholders of the acquiring firms are explored.

II. Sample and Methodology

Ninety-eight instances of illegal insider trading relating to corporate merger and tender offers were identified in the Wall Street Journal as warranting investigation. Of these, 82 firms have daily return information available during the observation period in the CRSP Data Base. For 57 of these firms, specific illegal insider trading dates were identified. For these stocks, price movements around two event dates are examined, the illegal

trading date and the first public announcement data. In addition, by using Mergers and Acquisitions as a data source, a group of 115 firms targeted for take-over during 1982-1984 are identified in order to facilitate a comparison.

For this larger group, the date of the first public announcement is obtained from the Wall Street Journal and daily return data is obtained from the CRSP Data Base. The data and methodology enable investigation and comparison of mergers when illegal dealings are known to have occurred and also when they are not.

In measuring the impact of illegal trading on the prices of involved stocks, a standard event study methodology is employed. The event date is either the date on which insiders illegally traded or the date on which merger-related information was publicly announced. Abnormal returns about the event date produce changes in the wealth of target firm shareholders. Abnormal returns are defined as :

$$e_{it} = R_{it} - (a_i + b_i R_{m,t}) \quad (1)$$

where

- e_{it} is the abnormal return on the security i at trading day t ,
- R_{it} is the actual return on security i at trading day t ,
- $R_{m,t}$ is the return on the market at trading date t , and
- a_i, b_i are estimates of the market model parameters for security i .

Market model parameters were estimated for each stock using the ordinary least squares regression technique. The estimates were based on 200 days of daily returns

immediately preceding the observation period. The observation period consisted of the period from 30 days before to 20 days after the event date. Abnormal returns, as defined in equation (1), were calculated each security in the sample for each day of the observation period. The mean abnormal return for day t is defined as :

$$AR_t = 1/n \left(\sum_{i=1}^n e_{it} \right), \quad t = -30, \dots, 0, \dots, +20 \quad (2)$$

where n is the number of companies in the sample. Average cumulative abnormal returns (CAR(K,L)) were also calculated by summing the daily abnormal returns over various intervals. For example, CAR(-30,1) represents the mean cumulative abnormal return for the period from 30 days prior to one day after the event date. Measuring cumulative average residuals from well before and after the event date enables us to assess not only immediate impact of the event but also the magnitude of any preannouncement price runup and post-event abnormal performances for target shares. The expected values of AR_t and CAR(t_1, t_2) are zero in the absence of abnormal performance.

III. The Impact of Illegal Trading on Share Prices

Table 1 presents the results for 57 cases in which insiders acted before merger-related information was released to the public. On the illegal trading date, the target shares on average gained statistically significant abnormal returns of 2.7 percent. The table shows that 42 out of 57 target shares (74.4 percent) experienced positive abnormal returns on the illegal trading date, suggesting that the abnormal returns are not caused by a few firms' abnormal price changes. It also reveals that the statistically significant abnormal returns continue for the next ten days, but this is likely attributable to target share price increase in anticipation of the imminent public announcement.

A sub-sample of the 27 firms for which illegal insider trading occurred at least six trading days before the public announcement date is also examined. Table 2 shows that these firms' stocks, on average, realized an abnormal return of 1.4 percent on the illegal trading date, and that 63 percent experienced positive abnormal returns. It is interesting to note that, for this smaller group, no abnormal returns for a few days

immediately following the illegal trading dates are apparent.⁵⁾ This suggests that non-public information is reflected in the security prices by the end of the trading dates.

TABLE 1
Impact of Illegal Insider Trading on Security Returns

Date	AR	CAR	t-Value	Firms with Positive Residuals	sample
-30	0.5%	0.5%	1.940	52.6	57
-25	0.6	1.7	2.136	47.4	57
-20	0.4	2.6	1.723	59.6	57
-15	0.6	4.5	2.211	54.4	57
-10	-0.2	4.8	-0.719	47.4	57
-6	0.0	5.5	-0.071	40.4	57
-5	0.0	5.5	-0.043	50.9	57
-4	0.1	5.6	0.234	42.1	57
-3	1.1	6.7	4.248*	61.4	57
-2	0.8	7.5	3.105*	61.4	57
-1	0.3	7.8	1.129	61.4	57
0	2.7	10.4	10.257*	73.7	57
1	2.7	13.2	10.557*	63.6	55
2	2.8	16.0	10.999*	71.7	53
3	2.9	18.9	11.134*	53.7	54
4	1.8	20.7	7.028*	51.8	56
5	1.7	22.4	6.600*	55.4	56
6	2.1	24.5	8.144*	56.4	55
7	1.2	25.7	4.589*	62.5	56
8	0.9	26.6	3.587*	46.3	54
9	0.6	27.2	2.227	43.6	55

5) Detailed daily data not reported herein show that a smaller sample of 14 firms with an interval of at least 7 trading days between the illegal trading date and the public announcement date show summary statistics consistent with the evidence reported in Table 2.

10	10.0	28.2	3.935*	61.4	57
15	0.1	28.5	0.342	43.6	55

Note : The event date (t%0) is the day on which market professionals purchased target firm shares before public announcement dates.

* significant at the 0.01 level

TABLE 2

Twenty-Seven Securities With More Than Six Trading Days Differentials Between Illegal Trading Days and Public Announcement Days

Date	AR	CAR	t-value	Firms with Positive Residuals	Sample
-30	0.2%	0.2%	0.593	44.4%	27
-25	1.2	2.4	3.217*	48.1	27
-20	0.6	3.8	1.654	63.0	27
-15	0.5	5.9	1.383	48.1	27
-10	0.2	5.4	0.437	48.1	27
-9	-0.2	5.2	0.516	44.4	27
-8	1.1	6.3	3.025*	66.7	27
-7	0.7	7.0	1.910	59.3	27
-6	0.4	7.4	1.025	48.1	27
-5	0.2	7.6	0.530	51.9	27
-4	0.1	7.8	0.307	44.4	27
-3	-0.3	7.5	-0.669	40.7	27
-2	0.7	8.2	1.882	63.0	27
-1	0.4	8.7	1.166	63.0	27
0	1.4	10.0	3.661*	63.0	27
1	0.0	10.0	0.020	48.1	27
2	0.4	10.5	1.107	66.7	27
3	0.9	11.4	2.366	40.7	27
4	1.3	12.6	3.344*	55.6	27

5	1.2	13.8	3.188*	53.8	26
6	3.7	17.5	9.758*	57.7	26
7	2.4	19.9	6.231*	61.5	26
8	2.2	22.1	5.881*	56.0	25
9	0.6	22.7	1.536	42.3	26
10	1.4	24.0	3.569	63.0	27
15	-0.5	24.7	-1.251	37.0	27
20	1.0	28.3	2.649	48.1	27

* significant at the 0.01 level

IV. Means Difference Tests

This section examines whether the abnormal returns realized by stockholders differ between target shares which were involved with illegal trading and those which were not. Earlier works documenting the excess returns associated with corporate combinations identify contributing factors as : (1) the form of acquisition, merger vs. tender offer (Jensen and Ruback(1983)) ; (2) payment method, cash vs. combination of cash and securities (Wansley, Lane and Yang(1983) and Huang and Walking(1987)) ; and (3) incumbent managers' resistance, contested vs. noncontested (Walking and Long (1985) and Huang and Walking(1987)). To determine whether the cumulative excess returns for inside traded firms are statistically different from that of other target firms, a multiple r

egression with binary independent variables was run for all sample firms. The for of the estimated equation is :

$$CER_i(K, L) = a_0 + a_1 TRADE_i + a_2 FORM_i + a_3 PAY_i + ERROR_i$$

where,

$$CER_i(K, L) = \sum_{t=K}^L e_{it}, \text{ cumulative excess return during day K through L for stock i,}$$

$TRADE_i = 1$ if the security belongs to inside traded firm, and 0, otherwise,

$FORM_i = 1$ if tender offers and 0, otherwise,

$PAY_i = 1$ if cash payment and 0, otherwise, and

$ERROR_i$ = regression error term.

Equation (3) is intended to capture the effect of insider trading, holding other factors constant, on the returns to target shareholders. The t-value of the coefficient a_1 measures the statistical significance of the relative excess returns realized by stockholders of firms involved in inside trading.

Table 3 reveals that the coefficient of the insider trading variable is positive and statistically significant in all models analyzed. This is an indication that the shareholders of insider traded stocks gained more than other target shareholders around the public announcement days. The obtained evidence does not support the contention that the trading on nonpublic information harms the outsiders.

TABLE 3

Cumulative Abnormal Return to Target Firm Shareholders and Means Difference Between Illegal Trading Stocks and Others

$$CER_i(t_1, t_2) = a_0 + a_1 TRADE_i + a_2 FORM_i + a_3 PAY_i + ERROR_i$$

Dependent Variable	Intercept	Trade	Form	pay	R ²	F-Value
CER(-30, 1)	.156 (3.70) ^a	.118 (3.29) ^a	.08 (-.38) ^a	.034 (.97)	.084	2.88 ^b
CER(-3, 1)	.099 (3.18) ^a	.109 (3.96) ^a	-.076 (1.02)	.05 (1.86) ^b	.117	4.47 ^a

Note : a, b significant at the .01, .05, and 0.1 level, respectively

V. Target Shareholders' Returns Around Public Announcement Dates

The data indicates that target firm shareholders gained abnormal returns on the illegal insider trading date. However, it remains to be seen whether or not the abnor-

mal returns realized prior to the public announcement were offset by relatively smaller gains on the public announcement date itself. To investigate this issue, the shareholders' abnormal returns around the public announcement dates are explored.

TABLE 4

Daily Average Abnormal Returns (AR) and Cumulative Abnormal Returns(CAR) for the Portfolio of 82 Illegally Traded Target Shares

Days from Event	AR	CAR	t-value	Firms with Positive Residuals	Sample
-30	0.1%	0.1%	0.237	41.5%	82
-25	0.2	0.3	0.856	47.6	82
-20	0.0	0.9	-0.002	42.7	82
-15	0.2	2.3	0.846	47.6	82
-10	0.4	4.0	1.603	54.9	82
-9	-0.2	3.8	-1.624	52.4	82
-8	0.2	4.0	0.721	50.0	82
-7	0.9	4.9	3.647*	54.9	82
-6	0.6	5.5	2.363	53.7	82
-5	0.6	6.1	2.221	56.1	82
-4	0.7	6.8	2.629*	54.3	81
-3	2.3	9.1	9.141*	68.8	80
-2	2.5	11.5	9.730*	69.4	72
-1	8.0	19.6	31.848*	75.0	68
0	9.6	29.2	37.925*	77.3	75
1	3.9	33.1	15.437*	50.6	81
2	-0.3	32.8	-1.145	45.1	82
3	0.7	33.5	2.888*	50.0	80
4	0.2	33.8	0.934	51.2	80
5	0.5	34.3	2.133	51.2	82
6	-0.4	33.9	-1.438	39.0	82

7	-0.1	33.9	-0.284	46.3	82
8	0.0	33.8	-0.078	42.5	80
9	0.7	34.5	2.577	48.1	81
10	0.2	34.7	0.659	38.3	81
15	0.0	36.2	-0.003	35.8	81
20	0.0	36.3	-0.034	45.6	79

Note : Day 0 is the date on which the merger-related information was first published in the Wall Street Journal

* significant at the 0.01 level

Table 4 shows the public announcement effect on target firm shareholders' returns for the equities illegally traded. The table shows that, on the announcement date, 77.3 percent of the target firms experienced a positive abnormal return. On these dates, the shareholders of the targeted companies gained, on average, 9.6 percent. The average cumulative abnormal return for the three days immediately surrounding the announcement date $CAR(-1,1)$ sum to 21.5 percent. The five-day average cumulative abnormal return $CAR(-3,1)$ was 23.8 percent. The 32-day average cumulative abnormal return $CAR(-30,1)$ amounted to 33.1 percent. The size of the abnormal returns realized by the insider traded target firms shareholders found here are more than comparable with that of merger target firms reported in previous studies (see Jensen and Ruback(1983)).

VI. Acquiring Firm Shareholders' Return Around the Announcement Date

It is observed that the extent of the abnormal returns realized by target shareholders is more significant for illegal trading firms than others. This section attempts to determine if the additional gains to target shareholders arise at the expense of the bidding firms' shareholders. It is plausible that acquiring firms may end up paying more for the acquisition because the target share value has appreciated significantly by the insider trading before the public announcement date. If such is the case, then it would

TABLE 5

Daily Average Abnormal Returns (AR) and Cumulative Abnormal Returns (CAR)
for Acquiring Firms

Days from DATE	AR	CAR	t-value	Firms with Positive Residuals	Sample
-30	-0.4	0.1	-1.367	42.3%	52
-25	0.4	1.2	1.340	50.0	52
-20	0.3	1.2	0.917	53.8	52
-15	-0.2	0.6	-0.658	50.0	52
-10	-0.2	1.4	-0.549	50.0	52
-9	-0.7	0.8	-2.121	32.7	52
-8	0.0	0.8	-0.013	50.0	52
-7	0.4	1.2	1.270	48.1	52
-6	-0.2	.9	-0.739	46.2	52
-5	0.8	1.8	2.709	71.2	52
-4	0.3	2.0	0.817	57.7	52
-3	0.2	2.3	0.689	48.1	52
-2	-0.5	1.7	-1.649	33.3	52
-1	-0.2	1.5	-0.714	48.0	51
0	0.1	1.6	0.326	41.2	50
1	-0.2	1.4	-0.664	53.8	51
2	0.4	1.8	1.241	59.6	52
3	-0.1	1.7	-0.384	44.2	52
4	-0.3	1.4	-0.872	32.7	52
5	-0.4	1.0	-1.157	57.7	52
10	0.1	1.1	0.477	53.8	52
15	0.5	1.9	1.591	65.4	52
20	0.4	1.8	1.342	61.5	52

Note : The event date is day on which the merger-related information was first published in the Wall Street Journal

be found that the bidding firms, on the average, experience negative abnormal returns around the announcement days. If the acquiring firms do not pay extra for these target firms involved with illegal insider trading, then we will find that the bidding firms show no abnormal negative returns around the announcement dates, because it has been shown that mergers and the acquisition market is competitive and that the shareholders of acquiring firms do not gain around the announcement date of mergers.⁶

Table 5 shows that there are no abnormal negative returns to the shareholders of acquiring firms around the date merger-related information was first announced to the public investors. Such a finding does not support the belief that inside trading on non-public information decreases the wealth of the bidding firms shareholders.

VII. Summary

The SEC recently accused market professionals of illegal trading on nonpublic information regarding mergers and other corporate combinations. This study investigated the impact of such illegal trading on the wealth of involved shareholders. It concludes that illegal insider trading by a few market professionals boosted security prices by 1.4 percent on average, and that nonpublic information is reflected in the security prices by the end of the illegal trading days. This observation indicates that the market professionals who were accused of illegally trading on nonpublic information purchased the shares in a single day rather than over a few days.

6) See Mandelker(1976), Dodd(1980), and Asquith and Kim(1982).

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