

New Evidence On The Effectiveness Of The Insider Trading Sanctions Act Of 1984

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Abstract

This study examines the effectiveness of the Insider Trading Sanctions Act (ITSA) of 1984 by employing a new approach. This approach examines the effect of ITSA in changing insider trading behavior around seasoned equity offering (SEO) announcements. Results of this study provide strong evidence of deferred net selling by insiders until after the SEO announcement date. Deferred net selling is evident for both the pre-ITSA and post-ITSA periods. We find limited evidence showing that the deferred net selling is significantly increased after passage of ITSA. Any effect of ITSA predominantly affects broad trading, rather than concentrated trading.

I. Introduction

Insiders have an information advantage relative to outside investors about the firm's future prospects. Regulation designed to restrain insiders from trading based on information advantage for their personal accounts has been present since passage of the Securities Exchange Act of 1934. This legislation was designed to maintain confidence in the fairness of securities markets by preventing insiders from exploiting their information advantage. Fifty years after passage of this Act, sanctions against illegal insider trading were increased substantially with the enactment of the Insider Trading Sanctions Act (ITSA) of 1984. This Act was designed to deter illegal insider trading both by increasing penalties imposed for conviction of illegal insider trading and by easing the standards necessary to obtain conviction for illegal trading activity.

Readers with comments or questions are encouraged to contact the authors via email.

Empirical research studying the profitability of insider trading activity shows evidence that insiders exploit their information advantage. Jaffe (1974) and Finnerty (1976) show that mimicking the purchases and sales of insiders can earn positive risk-adjusted returns. Studies of insider trading within the context of an information event show evidence of greater net selling activity by insiders prior to unfavorable corporate announcements. For example, Karpoff and Lee (1991) document greater insider selling activity prior to seasoned equity offering (SEO) announcements.

Results of testing the effectiveness of ITSA in changing insider trading behavior are not conclusive. Eyssell and Reburn (1993) report evidence in support of ITSA's effectiveness. They show that following passage of ITSA, there is a significant decline in net selling by insiders prior to SEO announcements. Seyhun (1992), however, does not find a significant effect of ITSA in changing the

aggregate level of insider trading. Despite the increased statutory sanctions of the 1980s, Seyhun reports that insiders remained able to increase their abnormal profits and increasingly sell stock before bad news.

This study re-examines the effectiveness of ITSA in changing insider trading behavior surrounding SEO announcements. Instead of focusing on insider trading prior to SEO announcements, as do Eysell and Reburn (1993), this study employs a new approach by examining whether ITSA could cause insiders to postpone net selling prior to an SEO announcement until after the announcement is made public. Garfinkel (1997) argues that, conditioned on the liquidity needs of insiders to trade shares, more stringent regulation should cause insiders to postpone trading from prior to an unfavorable announcement (i.e. an unexpected earnings decline) to following the announcement. Garfinkel (1997) examines changes in the timing of insider trading around earnings announcements and compares insider trading behavior before and after passage of the Insider Trading and Securities Fraud Enforcement Act (ITSFEA) of 1988. Garfinkel concludes that ITSFEA is effective in changing insider trading behavior.

Similar to Garfinkel's assertions regarding liquidity trading by insiders, Gombola, Lee, and Liu (1997) further assert that insiders should also have an incentive to postpone information-based trading prior to an SEO announcement until after the announcement is made public. They argue that insiders have an incentive to postpone selling prior to an SEO announcement if the expected costs of delaying are less than the expected benefits from avoiding prosecution for insider trading. Any higher sanctions imposed by ITSA should increase the expected benefits of delayed selling until after the announcement is made public.

SEO announcements provide a unique opportunity for studying the effect of insider trading regulations because these announcements are likely accompanied by both informed pre-announcement trading and informed post-announcement trading.

The informed pre-announcement trading could result from avoiding 3% price decline at an SEO announcement. The informed post-announcement trading could be motivated by substantial overvaluation remaining after the announcement. Loughran and Ritter (1995) estimated the post-announcement overvaluation to be as much as 44%. Insiders, aware of the overpricing after an SEO announcement, might choose to postpone their pre-announcement selling until after the announcement in order to avoid detection of illegal insider trading. Therefore, if ITSA is effective in affecting insider trading behavior, we should expect greater postponed selling by insiders around SEO announcements after passage of ITSA.

This study employs three measures of insider trading that reflect different aspects of insider trading in testing the effectiveness of ITSA. One of the three measures is also employed in previous research by Eysell and Reburn (1993) and by Seyhun (1992). Therefore, this study can also further provide a comparison with the results of these studies.

Results of this study provide strong evidence of deferred net selling by insiders until after an SEO announcement is made public both prior to and after the passage of ITSA. It documents a significant increase in abnormal net selling by insiders following an SEO announcement, as compared to preceding the announcement. Furthermore, the evidence is robust to three measures of insider trading and two methods for estimating abnormal insider trading. This result indicates that sanctions in effect prior to ITSA were effective in controlling insider trading behavior.

Greater deferral of net selling by insiders after passage of ITSA is evident only for one measure of insider trading, which is based on the number of transactions. The measure by number of transactions reflects broad trading by a large number of insiders, which are more likely liquidity-based, rather than information-based. Similar evidence is not found for trading measured by number of shares traded or dollar value of trades. These two

measures reflect concentrated trading of large transactions. Concentrated trading is more likely to reflect information-based trading, rather than liquidity-based trading. Therefore, these results suggest that, if ITSA does change insider trading behavior around SEO announcements, it might be more effective in affecting broad/liquidity trading, rather than concentrated/informed trading. Sanctions in effect prior to ITSA might have been sufficient to reduce concentrated, information-based trading. ITSA could spread this behavior to broad, liquidity-based trading as well.

II. Insider Trading Regulations and Insider Selling Around SEO Announcements

Changes in insider trading behavior around material corporate announcements could result from securities law designed to constrain insiders from profiting by trading stock of their companies based on nonpublic information prior to the announcements. Broad prohibitions against fraudulent trading by insiders were incorporated in SEC rules that were promulgated not long after passage of the Securities Exchange Act of 1934. These prohibitions developed into the SEC's "disclose or abstain" rule whereby individuals privy to nonpublic information must either disclose the information or refrain from trading.

In the early 1980s, the SEC announced heightened enforcement of insider trading regulations and lobbied Congress for increased penalties. Heightened enforcement activities are noted by Seyhun (1992), who reports a dramatic increase in prosecutions against illegal insider trading after 1980. Lobbying activities helped the passage of Insider Trading Sanctions Act (ITSA) of 1984. This Act increases civil penalties to triple the amount of any profits generated from trading on insider information. Additional regulations in the Insider Trading and Securities Fraud Enforcement Act (ITSFEA) of 1988 gave the SEC authority to impose even greater criminal penalties on illegal insider trading and required internal corporate policies against insider trading.

Karpoff and Lee (1991) show that insiders engage in abnormal selling prior to SEO announcements despite the presence of regulations designed to deter insider trading based on private information. Re-examining Karpoff and Lee's findings over pre-ITSA and post-ITSA periods, Byssell and Reburn (1993) show a significant reduction in abnormal insider selling prior to SEO announcements for the post-ITSA era, as compared to the pre-ITSA era. Eyssell and Reburn (1993) conclude that ITSA is effective in deterring insider trading.

Support for the effectiveness of ITSA is not shared by results of Seyhun's (1992) study. Seyhun shows that increased regulatory activity during the early 1980s and the passage of ITSA in 1984 are accompanied by an increase, rather than a decrease, in aggregate insider trading. Seyhun further analyzes insider trading activity prior to earnings announcements and takeover announcements, when insiders might best exploit their private information. He finds evidence supporting the proposition that increased sanctions provided by ITSA lead to reduced pre-announcement insider trading, but the evidence is not robust to different measures of insider trading. For the measure based on number of shares traded, results are perverse to the proposition that increased sanctions reduced insider trading. Seyhun finds that insider trading increases prior to these announcements, and even increases significantly prior to earnings announcements.

Insider trading behavior around an SEO announcement could be affected by legal and regulatory sanctions designed to constrain insiders from selling based on nonpublic information. As Garfinkel (1997) and Gombola, Lee, and Liu (1997) explain, increased sanctions against insider trading could cause insiders to reduce trading prior to an information event or could cause insiders to postpone trading until the information becomes public. This deferral will occur if the reduction in the expected costs of detection by deferring trading exceeds the reduction in the expected benefits from deferring trading until after the announcement. In the case of SEO announcements, deferral of trad-

ing until after the announcement retains much of the benefits of selling overpriced stock and causes only a small opportunity loss of the observed 3 percent of stock value associated with the SEO announcement. Loughran and Ritter (1995) document that SEO stocks remain substantially overpriced for as long as five years after an SEO announcement. After the SEO announcement is made public, the probability of detection of illegal trading activity is substantially reduced, allowing insiders to capitalize on any remaining overpricing.

This study tests the hypothesis of deferral of net selling by insiders from prior to an SEO announcement to after the announcement. The hypothesis predicts greater post-announcement net selling than pre-announcement net selling. Furthermore, this study tests the effectiveness of ITSA based on changes in deferred trading from the pre-ITSA period to the post-ITSA period. If ITSA is effective in deterring insider trading behavior, then we should expect an increase in deferral of net selling by insiders after passage of ITSA.

III. Data and Methodology

The sample used for this study contains 246 primary seasoned common equity offering announcements made by industrial firms listed on the New York and American Stock Exchanges, and the over-the-counter market during the period from 1981 through 1988. SEOs are initially identified using *Investment Dealers' Digest*. We exclude secondary offerings, which may not result from managerial decisions, as well as combination offerings of debt and equity because they may differ from primary offerings in both motive and decision-making process. We also exclude shelf registrations due to their difference from primary offerings. Additionally, SEO announcements whose announcement date cannot be confirmed with the *Wall Street Journal* are excluded. Subsequent SEO announcements by the same company are excluded. A final requirement for inclusion in the sample is the availability of a matching non-offering firm in the same industry, as indicated by three-digit SIC code, with market value closest to that of the offering firm.

The distribution of the SEO announcements for the pre-ITSA period and the post-ITSA period is presented in Table 1. The pre-ITSA period begins with January 1981 and extends through the month prior to passage of ITSA in August 1984. The post-ITSA period begins in September 1986, two years after passage of ITSA, because trading data from as long as two years prior to an SEO announcement is used to generate benchmark trading levels and to study pre-announcement trading. Exclusion of all announcements for the first two years after passage of ITSA assures that all pre-announcement trading and all benchmark trading are from the same regulatory regime. The post-ITSA period ends December 1988 with passage of ITSFEA. Including SEO announcements beyond 1988 can potentially result in biased results for this study since ITSFEA was enacted in 1988. Table 1 shows a larger sample of SEO announcements during the pre-ITSA period. The smaller sample for the post-ITSA period is mainly caused by the exclusion of any SEO announcements beyond 1988.

Table 1
Distribution of Seasoned Equity Offering
Announcements: Pre-ITSA vs. Post-ITSA

<u>Year</u>	<u>Sample</u>
Pre-ITSA Sample Period (Jan 1981/Jul 1984):	
1981	38
1982	36
1983	114
1984	12
Total	200
Post-ITSA Sample Period (Sep 1986/Dec 1988):	
1986	3
1987	23
1988	20
Total	46

Data for insider trading are obtained from a computer-readable tape compiled from the *Official Summary of Securities Transactions and Holdings* by the Securities and Exchange Commission. We measure insider trading based on open market purchases and sales, excluding private purchases and

private sales. The SEC defines "insiders" to include officers, directors, and principal shareholders holding more than 10 percent of ownership of the firm. Our study focuses on managerial insiders, who are officers and directors, and excludes non-managerial insiders, who are primarily large stockholders. Managerial insiders are expected to have more access to private information than non-managerial insiders.

Our study employs three measures of insider trading activity: the number of trades, the number of shares traded, and the dollar value of transactions. Each measure reflects a different aspect of insider trading and each has been employed in prior research. The number of trades, used by Seyhun (1992) and Eysell and Reburn (1993), among others, measures the breadth of trading across different insiders. This measure could indicate generalized trading by different insiders, since the number of managerial insiders in each company is limited to the number of its officers and directors. In contrast to such generalized trading, concentrated selling or buying by a very limited number of insiders could be captured in the share volume of trading which could serve as an indicator of the depth of trading. The number of shares traded has been used by Seyhun (1992) as well as by Gombola, Lee, and Liu (1997). The dollar value of transactions, which has been used by Gombola, Lee, and Liu (1997), captures the information in the share price as well as the number of shares traded.

Abnormal trading is measured by comparing to two benchmarks of insider trading: a prior period comparison and a control sample comparison. The prior period comparison compares the insider trading during each of the two twelve-month examination periods (the 12-month pre-announcement and 12-month post-announcement periods) surrounding the SEO announcement with the insider trading for the SEO firms over the twelve-month base period from month -24 to month -13 prior to the announcement. The 12-month pre-announcement period extends from month -12 to month -1, and the twelve-month post-

announcement period extends from month +1 to month +12.

The control sample comparison for measuring abnormal trading is implemented by comparing the insider trading over the examination period with the insider trading over the same period for a control firm matched to the SEO firm by industry and size.

The advantage of the prior period comparison is that differences in firm characteristics cannot influence differences in trading activity between firms. For example, larger firms might tend to have more trading activity than smaller firms, which would require controlling for such differences in analyzing trading. Because the same firm is used in the comparison, such differences cannot influence trading differences. The disadvantage of the prior period comparison is that it cannot control for intertemporal changes in factors.

The advantage of the control sample comparison is its ability to control for intertemporal changes in regulatory policy or economic circumstances over the sample period. The disadvantage is that only two firm-specific characteristics, industry and firm size, can be controlled, and the control firm cannot be an exact match for the SEO firm even on those two characteristics.

We test for significance of abnormal trading using a procedure that is similar to the event study methodology for testing abnormal returns. This procedure, which examines abnormal insider trading during an examination period, is similar to the procedures employed by Arshadi and Eysell (1991) and by Gombola, Lee, and Liu (1997).

Insider trading is measured by insider net purchases for firm i in month t relative to the announcement date. It is defined as:

$$NP_{it} = P_{it} - S_{it} \quad (1)$$

where P_{it} represents the measure of purchases by managers, and S_{it} represents the measure of sales

by managers, for firm i in month t , respectively. Summing each of the three variables across firms in month t gives us the managerial purchases (P_t), sales (S_t) and net purchases (NP_t), respectively, in month t .

Abnormal trading for net purchases is measured according to the difference between average net purchases (ANP_t) by managers of the sample of offering firms during an examination period and a benchmark measure of "expected" average net purchases, $E(ANP)$. As described earlier, we use both a prior period comparison in which expected trading is defined as trading by managers of the sample of offering firms for the 12-month period from months -24 to -13, and a control sample comparison in which expected trading is defined as trading by managers of a matched sample of firms during the same 24-month period.

Abnormal average net purchases in month t , $AANP_t$, are defined as,

$$AANP_t = ANP_t - E(ANP) \tag{2}$$

where ANP_t is the average net purchases per firm in month t , defined as NP_t/n where n is the number of firms in the sample and $E(ANP)$ is the expected monthly average net purchases.

Under the null hypothesis of no abnormal managerial trading surrounding the offering announcements, the Z statistic for each event month t , as defined below, is normally distributed.

$$Z_t = AANP_t / S(ANP) \tag{3}$$

where $S(ANP)$ is the standard error of the mean, defined as,

$$S(ANP) = ((12n)^{-1} \sum_{i=1}^n \sum_{t=-24}^{-13} (NP_{it} - E(ANP))^2)^{.5} / n \tag{4}$$

Deferred abnormal net purchases is measured by the difference between post-announcement cumulative abnormal average net purchases and pre-

announcement cumulative abnormal net purchases as follows:

$$DANP_t = CAANP_{+1,+t} - CAANP_{-t,-1} \tag{5}$$

where $DANP_t$ is the measure of trading deferral for a t -month interval, $CAANP_{+1,+t}$ is the cumulative abnormal average net purchases from month $+1$ to month $+t$ and $CAANP_{-t,-1}$ is the cumulative abnormal average net purchases from month $-t$ to month -1 .

We test for the significance of deferral activity by a t -test based on the pooled estimate of the pre-announcement and post-announcement standard deviation. To discern whether ITSA affects deferral of trading by insiders, we test for the difference of $DANP_t$ for the post-ITSA period and $DANP_t$ for the pre-ITSA period of the sample.

IV. Results

Results of testing for changes in insider trading behavior between the pre-ITSA and post-ITSA periods are presented in Tables 2, 3, and 4. Table 2 presents the comparison based on trading measured by number of transactions. Table 3 presents the comparison based on trading measured by number of shares traded. Table 4 presents the comparison based on trading measured by the dollar value of transactions. Panel A of each table contains results according to a prior period benchmark and Panel B of each table contains results according to a control sample benchmark.

Each of these panels contains a test for the hypothesis of deferral of insider net selling from prior to the announcement to after the announcement. A negative sign for the test of deferral is consistent with the presence of deferral of net selling. Each panel also contains a test for the effectiveness of ITSA based on changes in deferred trading from the pre-ITSA period to the post-ITSA period. A negative sign for the test of ITSA effectiveness is consistent with increased deferral of net selling.

Panel A of Table 2 shows strong evidence of abnormal net selling by insiders both before and after SEO announcements for both pre-ITSA and post-ITSA periods. Pre-announcement abnormal net selling is statistically significant at the 0.01 level for both the 1-month and 6-month intervals, as is the post-announcement net selling. Results show no evidence of substantial deferral of selling either prior to passage of ITSA or following passage. To the contrary, prior to passage of ITSA there is evidence of greater pre-announcement selling than post-announcement selling, which is the opposite of deferral. After passage of ITSA, the reduction in selling for the six-month pre-announcement period leads to a significant increase in deferral. Consequently, the evidence supporting effectiveness of ITSA and increased deferral results primarily from reduced insider selling during the six-month pre-announcement period.

The results shown in Panel A of Table 2 are consistent with the prior findings of Eyssell and Reburn (1993), who also find significantly less pre-announcement insider selling following passage of ITSA than prior to its passage. Consistently, when trading is measured by number of transactions, Seyhun (1992) also shows evidence that passage of ITSA is associated with reduction in pre-announcement insider trading prior to earnings and merger announcements. Consistently, we show that the average number of pre-announcement abnormal net selling transactions for the six-month interval observed prior to passage of ITSA is reduced by 65% following passage of ITSA.

Unlike Panel A of Table 2, Panel B of Table 2 shows the test for increased deferral of selling following passage of ITSA is not significant at the conventional level. Significant deferral either prior to passage of ITSA or following its passage are not evident. There is some weak evidence of less pre-announcement selling and less post-announcement selling after passage of ITSA, but the neither the

reduction in selling or increase in deferral is statistically significant.

The results shown in Panel B of Table 2 are not consistent with the contention that ITSA caused a significant change in deferral of insider net selling, or any other change in behavior.

The results shown in Panel B and Panel A of Table 2 differ, even though both utilize the same measure of insider trading activity, which is the number of transactions. The only difference in the two panels is the benchmark of "normal" trading against which abnormal trading is measured. In Panel A, abnormal trading is measured relative to prior-period trading for the SEO sample, whereas in Panel B abnormal trading is measured relative to concurrent trading for a control sample.

Some of the differences in results between these two panels could be explained if the prior period trading benchmark differs substantially from the control sample benchmark trading. If insider selling is unusually low during the prior period used as a benchmark, then insider selling immediately prior to the announcement might appear to be abnormally large relative to unusually low prior period selling. In the case of SEO companies, evidence shown by Loughran and Ritter (1995) indicates that these companies experience significant stock price runup for the year prior to the announcement. The year prior to this run-up, which is used as the benchmark for measuring abnormal trading, may be characterized by a lesser-than-normal level of insider selling if insiders can correctly anticipate the price run-up.

Panel A of Table 3, which uses a prior period comparison for measuring abnormal trading and measures trading by the number of shares traded, shows strong evidence of deferred net selling by insiders both before and after the passage of ITSA. Prior to passage of ITSA, abnormal net selling by insiders for the month immediately following an SEO announcement was 15 times as large as that

Table 2
 Managerial Trading Surrounding SEO Announcements
 Trading Measured by Number of Transactions: Pre-ITSA vs. Post-ITSA

Month(s)	Pre-ITSA		Post-ITSA	
	Average Abnormal Net Purchases	z-stat	Average Abnormal Net Purchases	z-stat.
Panel A: Prior Period Comparison				
-12	-0.030	-0.18	0.038	0.27
-11	-0.006	-0.04	-0.201	-1.42
-10	-0.152	-0.92	0.147	1.04
-9	-0.372	-2.24	0.342	2.42
-8	-0.555	-3.34	-0.484	-3.42
-7	-0.500	-3.01	-0.440	-3.11
-6	-0.341	-2.06	0.016	0.12
-5	-0.829	-4.99	0.103	0.73
-4	-0.939	-5.65	-0.418	-2.96
-3	-0.640	-3.85	0.082	0.58
-2	-1.030	-6.20	-0.462	-3.26
-1	-0.646	-3.89	-0.853	-6.03
1	-0.522	-3.12	-0.675	-5.16
2	-0.365	-2.18	-0.145	-1.10
3	-0.281	-1.68	-0.471	-3.60
4	-0.420	-2.51	-0.042	-0.32
5	-0.637	-3.81	0.202	1.55
6	-0.450	-2.69	-0.165	-1.26
7	-0.823	-4.92	-0.328	-2.51
8	-0.365	-2.18	-0.226	-1.73
9	-0.143	-0.85	0.202	1.55
10	-0.046	-0.28	0.121	0.92
11	-0.088	-0.53	-0.022	-0.17
12	0.050	0.30	-0.145	-1.10
(-1, -6)	-4.425	-10.87	-1.532	-4.42
(1, 6)	-2.675	-6.53	-1.296	-4.04
Test for Deferral: Post-Announcement minus Pre-Announcement Abnormal Trading				
1-Month	0.124	(t = 0.53)	0.178	(t = 0.86)
6-Month	1.750**	(t = 3.03)	0.237	(t = 0.50)
Test for ITSA Effectiveness: Post-ITSA minus Pre-ITSA Deferred Trading				
1-Month		0.054		(t = 0.17)
6-Month		-1.513*		(t = -2.03)

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Table 2 (continued)

Month(s)	Pre-ITSA		Post-ITSA	
	Purchases	z-stat	Purchases	z-stat.
Panel B: Control Sample Comparison				
-12	0.370	1.91	0.324	0.88
-11	0.395	2.03	0.085	0.24
-10	0.248	1.28	0.433	1.17
-9	0.029	0.15	0.629	1.70
-8	-0.154	-0.79	-0.197	-0.54
-7	-0.099	-0.51	-0.154	-0.42
-6	0.059	0.31	0.303	0.82
-5	-0.428	-2.20	0.389	1.06
-4	-0.538	-2.77	-0.132	-0.36
-3	-0.239	-1.23	0.368	1.00
-2	-0.630	-3.24	-0.176	-0.48
-1	-0.245	-1.26	-0.567	-1.54
1	-0.375	-1.85	-0.585	-2.09
2	-0.235	-1.16	-0.042	-0.15
3	-0.180	-0.89	-0.433	-1.55
4	-0.332	-1.64	0.111	0.40
5	-0.527	-2.60	0.284	1.02
6	-0.351	-1.73	-0.194	-0.69
7	-0.723	-3.56	-0.346	-1.24
8	-0.271	-1.34	-0.216	-0.77
9	-0.034	-0.17	0.263	0.94
10	0.052	0.26	0.197	0.71
11	0.015	0.08	0.067	0.24
12	0.137	0.68	-0.129	-0.46
(-1, -6)	-2.021	-4.24	0.185	0.20
(1, 6)	-2.000	-4.02	-0.859	-1.25

Test for Deferral: Post-Announcement minus Pre-Announcement Abnormal Trading

1-Month	-0.130	(t= -0.46)	-0.018	(t= -0.04)
6-Month	0.021	(t=0.03)	-1.044	(t= -0.92)

Test for ITSA Effectiveness: Post-ITSA minus Pre-ITSA Deferred Trading

1-Month	-0.112	(t= -0.21)
6-Month	-1.065	(t= -0.80)

** Significant at the 0.01 level.

* Significant at the 0.05 level.

Table 3
Managerial Trading Surrounding SEO Announcements
Trading Measured by Number of Shares Traded: Pre-ITSA vs. Post-ITSA

Month(s)	Pre-ITSA		Post-ITSA	
	Average Abnormal Net Purchases	z-stat	Average Abnormal Net Purchases	z-stat.
Panel A: Prior Period Comparison				
-12	0.519	0.40	0.517	0.58
-11	0.914	0.70	-12.428	-13.93
-10	-0.897	-0.68	0.064	0.07
-9	0.758	0.58	0.795	0.89
-8	-0.579	-0.44	-2.488	-2.79
-7	-2.501	-1.91	-7.068	-7.92
-6	-0.511	-0.39	0.602	0.67
-5	-2.859	-2.18	0.733	0.82
-4	-3.701	-2.82	-5.374	-6.02
-3	-5.757	-4.39	-2.851	-3.19
-2	-9.612	-7.33	-2.920	-3.27
-1	-2.938	-2.24	-8.256	-9.25
1	-42.753	-32.56	-26.436	-31.82
2	-8.179	-6.23	-7.870	-9.47
3	-7.116	-5.42	-3.297	-3.97
4	-5.823	-4.43	-0.237	-0.29
5	-6.341	-4.83	-1.020	1.23
6	-7.082	-5.39	-0.657	-0.79
7	-11.590	-8.83	-7.880	-9.48
8	-1.196	-0.91	-3.098	-3.73
9	-2.213	-1.84	-1.687	-2.03
10	-1.194	-0.91	-1.875	-2.26
11	-2.605	-1.98	-1.353	-1.63
12	-0.027	-0.21	-4.700	-5.66
(-1, -6)	-25.378	-7.90	-18.066	-8.26
(1, 6)	-77.294	-24.03	-39.514	-19.42
Test for Deferral: Post-Announcement minus Pre-Announcement Abnormal Trading				
1-Month	-39.815**	(t= -21.45)	-18.180**	(t= -14.90)
6-Month	-51.916**	(t= -11.42)	-21.448**	(t= -7.18)
Test for ITSA Effectiveness: Post-ITSA minus Pre-ITSA Deferred Trading				
1-Month		21.635**		(t=9.74)
6-Month		30.468**		(t=5.60)

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Table 3 (continued)

Month(s)	Pre-ITSA		Post-ITSA	
	Purchases	z-stat	Purchases	z-stat.
Panel B: Control Sample Comparison				
-12	2.048	0.85	3.135	1.64
-11	2.444	1.01	-9.810	-5.14
-10	0.632	0.26	2.682	1.41
-9	2.287	0.95	3.413	1.79
-8	0.951	0.39	0.130	0.07
-7	-0.971	-0.40	-4.450	-2.33
-6	1.019	0.42	3.220	1.69
-5	-1.329	-0.55	3.351	1.76
-4	-2.171	-0.90	-2.756	-1.44
-3	-4.228	-1.75	-0.233	-0.12
-2	-8.082	-3.34	-0.302	-0.16
-1	-1.409	-0.58	-5.638	-2.96
1	-37.851	-12.21	-12.299	-4.65
2	-6.094	-1.97	-7.723	-2.92
3	-5.054	-1.63	-2.846	-1.08
4	-3.754	-1.21	0.545	0.21
5	-4.256	-1.37	1.731	0.65
6	-5.027	-1.62	-0.072	-0.03
7	-9.560	-3.08	-7.732	-2.93
8	0.919	0.30	-2.528	-0.96
9	-0.296	-0.10	-1.215	-0.46
10	0.933	0.30	-1.575	-0.60
11	-0.459	-0.15	-0.179	-0.07
12	1.868	0.60	-4.442	-1.68
(-1, -6)	-16.200	-2.73	-2.358	-0.50
(1, 6)	-62.036	-8.17	-20.664	-3.19
Test for Deferral: Post-Announcement minus Pre-Announcement Abnormal Trading				
1-Month	-36.442**	(t= -9.26)	-6.661*	(t= -2.04)
6-Month	-45.836**	(t= -4.76)	-18.306*	(t= -2.29)
Test for ITSA Effectiveness: Post-ITSA minus Pre-ITSA Deferred Trading				
1-Month		29.781**	(t=5.83)	
6-Month		27.530*	(t=2.20)	

^a Number of shares traded is measured in thousands of shares.

** Significant at the 0.01 level.

* Significant at the 0.05 level.

Table 4
 Managerial Trading Surrounding SEO Announcements:
 Trading Measured by Dollar Value of Trades^a: Pre-ITSA vs. Post-ITSA

Month(s)	Pre-ITSA		Post-ITSA	
	Average Abnormal Net Purchases	z-stat	Average Abnormal Net Purchases	z-stat.
Panel A: Prior Period Comparison				
-12	0.039	0.83	0.010	0.51
-11	0.044	0.92	-0.191	-9.57
-10	0.016	0.34	-0.006	-0.33
-9	0.470	9.89	-0.012	-0.62
-8	0.007	0.14	-0.112	-5.60
-7	-0.043	-0.90	-0.084	-4.23
-6	0.014	0.03	0.014	0.71
-5	-0.016	-0.33	0.024	1.18
-4	-0.106	-2.24	-0.097	-4.87
-3	-0.161	-3.38	-0.028	-1.43
-2	-0.285	-6.00	-0.079	-3.96
-1	-0.091	-1.92	-0.213	-10.68
1	-0.991	-21.01	-0.593	-31.95
2	-0.201	-4.26	-0.110	-5.91
3	-0.214	-4.53	-0.088	-4.75
4	-0.128	-2.71	-0.028	-1.52
5	-0.279	-5.92	0.080	4.34
6	-0.197	-4.18	-0.021	-1.11
7	-0.311	-6.60	-0.178	-9.62
8	-0.042	-0.88	-0.060	-3.24
9	-0.051	-1.08	-0.012	-0.66
10	-0.032	-0.67	-0.014	-0.76
11	-0.069	-1.47	-0.020	-1.06
12	0.005	-0.10	-0.074	-4.00
(-1, -6)	-0.645	-5.54	-0.379	-7.76
(1, 6)	-2.010	-17.40	-0.760	-16.73
Test for Deferral: Post-Announcement minus Pre-Announcement Abnormal Trading				
1-Month	-0.900**	(t= -13.43)	-0.380**	(t= -13.95)
6-Month	-1.365**	(t= -8.32)	-0.381**	(t= -5.71)
Test for ITSA Effectiveness: Post-ITSA minus Pre-ITSA Deferred Trading				
1-Month			0.520**	(t=7.19)
6-Month			0.984**	(t=5.56)

(continued on next page)

Table 4 (continued)

Month(s)	Pre-ITSA		Post-ITSA	
	Purchases	z-stat	Purchases	z-stat.
Panel B: Control Sample Comparison				
-12	0.091	1.06	0.102	2.01
-11	0.095	1.11	-0.098	-1.92
-10	0.068	0.79	0.086	1.69
-9	0.522	6.07	0.080	1.57
-8	0.058	0.68	-0.019	-0.37
-7	0.008	0.10	-0.008	0.16
-6	0.053	0.61	0.107	2.09
-5	0.036	0.42	0.116	2.27
-4	-0.055	-0.64	-0.005	-0.09
-3	-0.109	-1.27	0.064	1.26
-2	-0.234	-2.72	0.014	0.27
-1	-0.040	-0.47	-0.120	-2.36
1	-0.846	-7.17	-0.314	-4.46
2	-0.124	-1.05	-0.062	-0.87
3	-0.138	-1.17	-0.039	-0.55
4	-0.051	-0.43	0.031	0.45
5	-0.204	-1.73	0.140	1.99
6	-0.121	-1.03	0.033	0.47
7	-0.236	-2.00	-0.134	-1.90
8	0.036	0.31	-0.008	-0.11
9	0.027	0.23	0.039	0.55
10	0.046	0.39	0.038	0.54
11	0.009	0.08	0.046	0.65
12	0.073	0.62	-0.026	-0.37
(-1, -6)	-0.349	-1.66	-0.176	-1.41
(1, 6)	-1.484	-5.14	-0.211	-1.22
Test for Deferral: Post-Announcement minus Pre-Announcement Abnormal Trading				
1-Month	-0.806**	(t= -5.52)	-0.194*	(t= -2.23)
6-Month	-1.135**	(t= -3.17)	-0.387	(t= -1.81)
Test for ITSA Effectiveness: Post-ITSA minus Pre-ITSA Deferred Trading				
1-Month		0.612**		(t=3.60)
6-Month		0.748		(t=1.79)

^a Dollar value of trades is measured in millions of dollars.

** Significant at the 0.01 level.

* Significant at the 0.05 level.

of the preceding month. Comparing the six months immediately preceding the announcement to the six months immediately following the announcement, abnormal net sold shares triple for the post-announcement period. Consequently, the test for deferral shows an extremely high level of significance for the pre-ITSA period ($t=-21.45$ and -11.42 for the 1-month and 6-month intervals, respectively).

After passage of ITSA, evidence of deferral remains significant ($t=-14.90$ and -7.18 for the 1-month and 6-month intervals, respectively). The magnitude of deferred trading for the post-ITSA period, however, is only 50% of deferred trading for the pre-ITSA period. This decrease in deferral is significant at the 0.01 level for the test of deferred selling for both the 1-month and 6-month intervals. Decreased deferral of net selling after passage of ITSA is contrary to the prediction of the ITSA effectiveness hypothesis.

An increase in deferral is not evident in the results shown in Table 3, primarily because pre-ITSA trading already shows evidence of significant deferral of selling until after SEO announcements. Large transactions by insiders, which are more likely to be information-based, might have been deterred even without the additional sanctions imposed by ITSA due to the visibility of such transactions to regulators. With passage of ITSA, similar deferral of trading previously evident for larger transactions apparently spread to smaller transactions as well. Consequently, the effect of ITSA rests primarily on the extension of the effectiveness of pre-ITSA regulation to liquidity-based selling.

Using a control sample comparison as the benchmark for measuring abnormal trading, results shown in Panel B of Table 3 are similar to those in Panel A. Both panels of Table 3 provide evidence of deferred net selling before and after the passage of ITSA. Both panels, however, show no evidence of an increase in deferred net selling after passage of ITSA.

The test for the effectiveness of ITSA shows that the reduction in deferral of net selling is significant at the 0.01 level ($t=5.83$) for the 1-month interval, and at the 0.05 level ($t=2.20$) for the 6-month interval. These results of less deferral of net selling is contrary to the prediction of the hypothesis that ITSA can change insider trading behavior to postpone net selling prior to an unfavorable announcement until after the announcement is made public.

Panel A of Table 4, which uses a prior period comparison for estimating abnormal trading measured by dollar value of trades, also shows strong evidence of deferred net selling by insiders both before and after the passage of ITSA. Similar to results shown in Table 3, deferred net selling by insiders is evident for both pre-ITSA and post-ITSA periods regardless of which time interval (one- or 6-month) is employed. In both periods, there is a rapid increase in abnormal net selling immediately following the announcement. The deferral appears to be greater for the period prior to ITSA than for the period following ITSA. Consequently, there is no evidence showing increased deferral of net selling following ITSA.

Using a control sample comparison as the benchmark for measuring abnormal trading, results shown in Panel B of Table 4 are similar to those in Panel A. Both panels of Table 4 provide evidence of deferred net selling both before and after the passage of ITSA. However, there is no evidence of increased deferral of net selling after the passage of ITSA shown in either Panel. The test for increased deferral following ITSA again shows no support for the hypothesis that ITSA increased the deferral of insider net selling. To the contrary, the deferral decreased after passage of ITSA, with the decrease significant at the 0.01 level ($t=3.60$) for deferral from the month immediately prior to the month immediately following the announcement. Abnormal net selling by insiders during the 6 months preceding the announcement decreases after passage of ITSA, but the decrease is not statistically significant at the conventional level ($t=1.79$).

Results of this study provide empirical implications on the argument of trading and price manipulation by informed traders around SEO announcements. Gerard and Nanda (1993) postulate that informed traders might sell shares prior to SEO announcements in order to depress the offer price temporarily. They argue that by manipulating the price downward, informed traders afford themselves the opportunity to buy at reduced prices following the SEO announcement. Therefore, this argument would imply pre-issue selling by informed insiders and a reversal of the pre-issue selling after the announcement. Regulatory sanctions are designed to deter such trading patterns. Our finding of greater post-issue selling than pre-issue selling is not consistent with the proposition of trading and price manipulation around SEO announcements, at least by managerial insiders, whose trading is constrained by regulatory policy.

V. Conclusions

The Insider Trading Sanctions Act of 1984 was designed to limit the ability of insiders in exploiting their private information. Previous studies examining the effectiveness of ITSA in deterring insider trading is not conclusive in showing that ITSA is effective in deterring insider trading. This research takes a different approach to testing whether the passage of ITSA is associated with an increase in deferral of net selling by insiders from prior to an SEO announcement until after the announcement is made public.

Results of this study provide strong evidence consistent with the proposition of deferral of net selling by insiders until after the announcement of an SEO both before and after passage of ITSA. It documents significant deferred net selling by insiders until after the announcement is made public. This evidence is robust to three measures of insider trading and two benchmarks for estimating abnormal trading.

This study provides some evidence on increased deferral of net selling by insiders after passage of ITSA. However, it is evident only for in-

sider trading measured by number of transactions. The evidence is not extended to insider trading measured by either the number of shares traded or dollar value of trades. The findings suggest that, if ITSA does change insider trading behavior, it might be more effective in affecting broad/liquidity trading, rather than concentrated/informed trading.

VI. Suggestions for Future Research

The results of this study open the question whether other tests of regulatory effectiveness also depend on the measure of insider trading. In particular, results of testing the effectiveness of ITSA-FEA, which became law in 1988, might also depend upon the measure of insider trading employed. In addition, any study that examines insider trading behavior in the proximity of an information event, should include whether regulatory changes might affect trading behavior, and not just trading behavior as measured by one measure of insider trading. Furthermore, studies of insider trading behavior should examine trading both before and after an information release since regulatory policy might cause informed insiders to defer trading until after a material information release.

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Notes