

BOOK REVIEW ARTICLE

Investment Intelligence from Insider Trading

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A recent book analyzing a large database about "insider trading" as reported to the Securities and Exchange Commission gives valuable insights into what can be learned, by investors and market analysts, from the buying and selling done by insiders. In this article, the book's results are reported, and commentary is added about the implications.

Key Words: Insider trading, market indicators for investors, H. Neyjats Seyhun, insiders' market behavior, statistical studies to predict securities market.

H. Neyjats Seyhun's *Investment Intelligence from Insider Trading* (MIT Press, 1998) reports on a massive study of the ability of statistics on insider trading from 1973 to 1994 to predict U.S. stock returns. It should be of interest to both stock market investors and financial economists.

The federal Securities Exchange Act of 1934 defines "insider" in two ways, one of which says insiders are high-level corporate executives, board members, or stockholders with over 10% ownership in the company. Insiders of this kind are forbidden from benefiting from any positions held for less than six months, and anyone in possession of material, non-public information (the other definition of "insider") is forbidden from trading in the firm's securities while having such information. To enforce these regulations, insiders of the first type are required to report their trading of the stocks for which they are insiders within 10 days of the month's close to the Securities and Exchange Commission, which then makes it public. Seyhun combines this data with other stock market data to also report on the

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profitability of investment rules involving such measures as price-earnings ratios, book-to-market ratios, take-overs, and trends in prices.

In Seyhun's study, insider trading in a particular company is first aggregated by months, with a month where the insiders bought more shares than they sold defined as a buying month, and one in which they sold more than they bought being defined as a selling month. This resulted in 144,884 buy months and 164,309 sell months, making this a large database. The surplus of selling is probably because the category of insider includes many who started firms (or got in early), and who afterwards tend to be net sellers. Since most insiders have the bulk of their wealth in their company, standard financial advice would be to diversify (which of course is legal). It should be noted that much insider trading is for such legitimate purposes as diversification and personal liquidity. It is also legal for insiders to make trades based on public information (if, at the time, they have no inside material information). Of course, given their concentrated position and incentive to keep up-to-date on their companies, insiders may be better able to evaluate and use the public information.

While it is illegal for insiders to trade on material, non-public information, it is legal to refrain from trading on the basis of material, non-public information, a point Seyhun does not make. To illustrate, consider an individual who has a substantial position in a company (perhaps from being a founder, or from having exercised many options). Having little invested outside of this company, he decides to diversify his investments by selling a portion every quarter, carefully timed so that he is not selling when he has material, non-public information (such as an unusually bad forthcoming earning announcement). This is a very sensible, rational policy most financial planners would approve of. Now suppose this insider receives non-public information that the company's earnings will be unusually good this quarter (or even that the company is negotiating to be taken over at a big premium). The insider is legally free to cancel his planned (but probably unrevealed) sales, making them later when the price is likely to be higher. Since he has used his insider information not to trade at a profit, but to avoid trading when he had material information, he has not engaged in illegal insider trading, although he has still benefited from his inside information.

Likewise, one who has a long-term stock accumulation plan is

free to stop purchasing when aware of pending adverse news. An insider may also benefit from his willingness to believe public material information. An example I have used in class is a cookie manufacturer who has a way to bake fresh cookies with that home-baked flavor, and plans to build a business on providing good quality, and affordable cookies accompanied by good service. He is free to make all of this information public, and then act on it. Of course, given the number of firms that make claims like, "We provide high quality products at reasonable prices, and have a dedicated, hardworking labor force," it would not be surprising if many investors did not believe such claims. It would be legal for an insider to act on such publicly disclosed information. The insider's advantage may merely be that he knows when to believe the company's public relations or advertising claims.

Thus, it is plausible that insider trades would be more profitable than non-insider trades. The evidence on this point shows that insiders do, in fact, make unusually profitable decisions.

After months in which insiders were net buyers, the subsequent twelve-month return to the stock was 24.0%. After months when they were net sellers it was only 15.1%. Expressed relative to an equally weighted average of the New York Stock Exchange, the American Stock Exchange, and NASDAQ, insider purchases beat the market by 4.5% and sales trailed the market by 2.7%. Because of the upward market trend, stocks sold by insiders still went up appreciably, so a strategy of shorting the stocks that insiders were selling would be unprofitable. This occurs because non-institutional short sellers do not receive use of the proceeds of their stock sales, which remain as an interest-free deposit. However, if one owned stock that was the subject of insider selling, it does appear it would be profitable to sell it and invest elsewhere.

Since earlier studies have shown that following insiders is profitable, standard financial theory would suggest that investors would have learned to exploit this information. However, contrary to theory, there is no evidence that the profitability of following insiders has declined.

The price changes that follow insider transactions occur slowly, suggesting that the insiders are not exploiting upcoming corporate announcements (such as of quarterly earnings), but are investing on the basis of longer-term prospects for their companies. Abnormal

price performance occurs for a full year following the insider trades.

The power of insider trading signals can be increased in various ways. Firms exhibiting insider purchases that were not preceded by sales over the past twelve months appreciated 30.5% during the subsequent 12 months. Similarly, firms exhibiting insider sales that were not preceded by any purchases appreciated by only 9.5%.

There are other ways to improve the predictive power of insider trading. Top executives would be expected to be the best informed, and their trades do turn out to be the most profitable. Large shareholders (non-management) are the insiders with the worst performance.

Insiders acting on valuable information would be expected to make larger trades. Indeed, trades exceeding 10,000 shares provide better signals than smaller trades.

Insider purchases are more profitable than sales. This is probably because much selling is done for reasons of diversification, or liquidity, while to add to an already large position is often a sign of confidence.

Following the insiders in small firms proves more profitable than following insiders in large firms. A large purchase by a top executive in a small firm outperforms the market index by 14.7%, while a large sale is associated with a 7.85% underperformance.

Part of the success of insider signals arises from a tendency for insiders to be buying more strongly before rises in the market than before market declines. In my opinion, this may be partially because insiders tend to be sellers after their stocks have risen (possibly because the need for diversification increases, and possibly because being richer, they desire a nicer lifestyle, and sell to finance that lifestyle). Thus, aggregate insider trading can be used as an aid to predicting overall market performance.

A case study shows that after the crash of 1987, insiders were heavy buyers (with 90% being buyers). In fact, October 20, 1987 had more insider buying than any other day during the study period. Given the insiders' knowledge of their companies, this buying suggests that the collapse was an irrational reaction to the stock price declines over the previous two weeks. If the decline had been due to difficult times being ahead for the economy, insiders with their good knowledge of their firms would not have been buying. As in other periods, the stocks bought by insiders during the two week postcrash period

outperformed the market, and those sold by insiders underperformed the markets.

Statistical studies by various experts have found a number of rules that would have outperformed the market. This book tests many of these, generally confirming them. For instance, dividend yields are shown to be a predictor of future returns for the market as a whole, with periods of high yields being followed by high market returns. However, insider trading provides a better predictor of the aggregate market. Yet, firm-specific dividend yields were not found to be useful in picking individual stocks.

Dividend initiations are good news for investors, with stock prices increasing by 2.1% during the dividend initiation declaration month. Furthermore, stocks initiating dividends outperform the market index by 7.5% during the next twelve months. Some theoreticians have speculated that initiating dividends may indicate that a firm lacks profitable investment opportunities, (and is therefore returning the earnings to the stockholders, as theory indicates they should). However, if this were the case, insiders (knowing this to be true) would be net sellers of stock in companies initiating dividends. This was not found to be the case.

Previous studies have shown that companies reporting unexpectedly good earnings outperformed the market, even beyond the announcement period. Seyhun confirms this result. Firms in the top quintile for earnings surprise (approximated here by earnings increases) outperformed the market by 6.8% in the next year, while firms with the most disappointing earnings underperformed by 5.9%. If the three days immediately around the announcements were excluded, the net returns were plus 4.05% and minus 4.1%, large enough to be exploitable.

Even though there is a sharp price change around the time of unexpectedly good or poor earnings announcements, and insiders (who often know what the earnings will be) could benefit from trading against this knowledge, insiders do not appear to buy before good announcements, and sell before poor ones. This is shown by the absence of a correlation between insider trading in the three months prior to an announcement and the announcement itself. This applies even for large transactions by top executives. Insider success appears to come from exploiting their general knowledge of their companies (legal), rather than from taking advantage of knowledge of non-public

information such as the next earnings announcement (illegal). Of course, there may be unreported insider trades that are exploiting knowledge of such factors as the next earnings announcement.

When insider trading and earnings surprises are combined, both seem to have an independent power to predict returns, although large trades by top executives appear to be better predictors.

Another predictor of stock returns is price-earnings ratios. This study, as earlier ones, finds they work. The highest price-earning ratio stocks had raw returns of 11.5%, while the lowest price-earnings ratio stocks had raw returns of 23.2%. When expressed relative to the average returns, the highest P/E stocks underperformed by 2.2% over the next year, while the lowest P/E stocks outperformed by 2.3%. Insiders are found to be net buyers of relatively low P/E stocks, and net sellers of relatively high P/E stocks. Relative P/E loses most of its predictive power once insider trading is controlled for.

Book-to-market ratios have previously been shown to help predict stock returns. This study found that the stocks with the highest relative book-to-market ratio outperformed the index by .8%, while those in the other three groups underperformed. The underperformance was 1.7% for those companies in the lowest book-to-market group. Insider trading and book-to-market ratios appear to exert independent effects on stock prices.

One circumstance where insiders might be expected to have a big advantage is during takeovers. Stock prices of takeover targets increase between 20% and 30% after the bid. Insiders often know of intended takeovers, or of the vulnerabilities of their firms to takeover attempts. They must be tempted to take advantage of this knowledge. About a fifth of the abnormal performances in takeovers occurs before the formal announcement, and some have suspected insider trading. However, this study finds that the pre-announcement drift appears to be independent of whether insiders were net buyers or sellers before the announcement. Likewise, insiders do not appear to buy more stock in firms subject to takeover attempts than in firms not subject to such attempts.

Insider trading proved unable to predict which firms would be successful bidders for other firms, but it was able to predict the returns from owning the bidding firms. Firms purchased by insiders outperform the market index by about 6%. Bidder firms whose top executives buy 10,000 shares or more outperform the index by about

13%. The best performing bidder firms are those with large insider buying by top executives, a large pre-announcement run-up in stock price, and those that pay cash for their targets.

Does past performance predict future performance? This study suggests it does. For horizons up to one year, stock prices exhibit positive momentum. Past winners continue to outperform the market index, while past losers continue to underperform the market index. However, stock prices exhibit mean reversion over long horizons (up to five years). Past winners tend to underperform the market index, while the past losers outperform the market index. Both price history and insider trading appear to maintain their predictive powers when the other variable is controlled for.

Of course, for investors the key question is whether to follow insiders. Seyhun's last chapter discusses this question. One problem in following insiders is that we do not know when they act, but only when their actions are reported, which is usually a bit later. In particular, the median time between an insider trade and the reporting of the trade is 26 days (insiders are allowed till the tenth of the next calendar month to report). Three-quarters of trades are reported within 36 days. Unfortunately, no information is given on the delay from reporting and publication. However, since filings are now made electronically, the delay to publication should not be very long.

The good news is that since insider-trading decisions do not appear to be based on near term events, there is still potential to benefit by trading when the information becomes public. The stock price adjustment from the time of the trade until the time of the report is about .5%. When combined with a transaction cost estimated at 1%, it appears that it takes about three months to break even from following insiders (no allowance is made for taxes). The final chapter reports some of the gains from acting on insider trading on the date when it is reported (rather than on the actual trade date). Insider buys outperform the market by 2.0% and sells underperform by 3.3%. The profitability can be improved by such techniques as copying only the largest trades (over 10,000 shares traded), copying trades in smaller firms (best results are from companies with less than \$25 million in capitalization), and following the trades of the top executives. For instance, the following of such executives' trades in the smallest companies has an average excess return of 7.4%, which

appears worthwhile. While it would appear from other evidence in the book that profitability could be further improved by excluding trades that are very old when reported, and by following only the largest trades, the book does not report the results of combining these various techniques.

The book also considers risk by asking what the probability is of a loss (calculated relative to the average of all stocks) from mimicking insiders. This is surprisingly high. Even though the strategy of mimicking insiders in small firms appears highly profitable, it appears that 51.6% of trades will have a loss. There is an apparent paradox in a strategy that has an expected profit, also has an above-50% probability of loss. The explanation is that the returns in the stock market are skewed, with winners being more profitable than losers. Thus, those mimicking insiders would earn more from their successful transactions than they lose from their unsuccessful ones. This effect appears especially important for the smallest firms.

Calculations are offered of the probability of losses after various numbers of transactions. After 10 transactions in the smallest firms, the probability of loss is still about a third (33.5%), although it drops to less than one in a thousand for a thousand transactions.

Overall, this is an interesting book that should be useful to practicing investors, including those who are managing institutional money.