

## **The Linkage between Insider Trading Activities, Market Efficiency, and Stock Information Content**

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### ***I. Introduction***

There are two main categories of insider trading: illegal insider trading and legal insider trading. Not all insider trading activities are illegal. However, insider trading commonly refers to illegal transactions involving material, non-public corporate information. It is outlawed by the U.S. Securities and Exchange Commission, a government commission created by Congress to regulate the securities markets and protect investors. According to the definition published by the SEC, illegal insider trading refers to “buying or selling a security, in breach of a fiduciary duty or other relationship of trust and confidence, while in possession of material, non-public information about the security”(“Fast Answers”, 2015). Since the conduct of illegal insider trading could defect investor confidence in the fairness and integrity of the security markets, the SEC takes the detection and prosecution of insider trading violations as one of its enforcement priorities.

On the other hand, legal insider trading, which refers to when corporate insiders officers, directors, and employees buy and sell stock in their own companies, takes place in the market under the restriction of the U.S. government. It is perfectly legal for insiders to buy and sell stock in their company if they meet the SEC’s requirements. In other words, as long as the insiders are trading on information that is generally available to the public, no law is broken.

This research intends to participate in and extend the debate over whether insider transactions result in more informative security prices, fostering market efficiency, and whether insiders could outperform the market. In addition, the research attempts to examine the extent to which public investors could achieve the excess returns by following the trend set by insiders. Evidence supporting the arguments raised in the research will be obtained from empirical results based on tested experiments and existing finance literature reviews related to insider trading. In particular, this research’s goal is to test the validation of the hypothesis: insiders are able to outperform the average market either in selling transactions or buying transaction, or both transactions.

### ***II. Review of Literature***

Most debated aspects of insider trading included whether insider trading is rational and whether it should be regulated. The pros and cons of insider trading is also a topic that has been actively discussed in literature on law, economics and finance (Chauhan, Chaturvedula, and Iyer, 7). The existence of insider trading laws and their enforcement is a highlight of the financial market history in the 1990s (Bhattacharya and Daouk, 77).

In particular, the study indicated that without insider trading, the market would operate with a lower level of efficiency, which reduces the informativeness of the market, causing shareholders to demand an even higher return to compensate for the fact that they perceive less information as riskier investment. This viewpoint is still receiving supports and agreements as it still appears in recent publications. Some of the recent authors who promote this idea are Laura Beny and Charles Gasparino.

In his recently published book "Circle of Friends", Gasparino even claimed that insider trading should not be illegal at all and that it is not anywhere near as a crime as some other trading practices in the financial market (Gasparino, 7). Laura Beny, an assistant professor in the Law School at University of Michigan, published her research in 2006, in which she expressed her promotion regarding insider trading. Ben discovered governments seeking to develop their stock markets might want to consider implementing tough insider trading laws and enforcement. She used quotes from Henry Manne's book, *Insider Trading and the Stock Market*, to argue that contrary to the prevailing legal and moral opinion of the time, insider trading is desirable because it is economically efficient (Beny, 242). As an attempt to elaborate this statement, Beny argued that capital and product markets failed to properly incentivize managers because these markets work imperfectly, which prevents companies to remove poorly performing managers. She pointed out that insider trading corrected this issue by enabling managers to continually update their compensation in light of new information without incurring renegotiation costs. Briefly summarized, advocates of insider trading viewed it as an efficiency compensation mechanism, which increases managers' incentives by linking their "fortunes more closely to those of the firm." (Beny, 243).

On the contrary, opponents of insider trading argued that insider trading crowds out information collection by outside investors by limiting the gains available to outside investors. A study of insider trading laws and stock price informativeness indicated that market professionals devote fewer resources to information collecting if they see the opportunity of trading with insiders who have superior knowledge. By increasing information asymmetries, insider trading reduces investment, and thus, depresses stock market participation and liquidity, and triggers additional adverse selection problems and inefficient corporate behavior (Fernandes and Ferreira, 1846).

Insider trading and stock price accuracy, another popular debated topic, is the focus of this paper. Stock price accuracy refers to whether stock price reflects firms' actual values. The attention is significantly paid to stock price accuracy due to the fact that it directly relates to investment decisions, and moreover, the fluctuation of security market. From the perspective of public investors, it is necessary to incorporate all available information regarding the firms in which they intend or have ownership and use the information as reference until the last moment of their investing decision. In an attempt to gather additional information to better predict the stock performance, public investors often refer to insiders as one source of information since insiders are often perceived as the most informed members in the stock markets (Chauhan, Chaturvedula and Iyer, 7). Proponents of insider trading argued that through trading, insiders convey the unpublished material information to the stock market and therefore the stock market is more informative, which promotes the optimal allocation of resources (Chauhan, Chaturvedula and Iyer, 7).

Beny firmly addressed the relationship between insider trading and stock price accuracy in her publication. According to her, share price accuracy is reflected through two components: one is the amount of information concerning a firm's future distributions and the other is the extent to which stock price reflects this information (Beny, 247). Insiders, who take ownership of the information mentioned above, could potentially impact both components of share price accuracy.

Many other scholars have used empirical studies to confirm the validity of this argument. A research published in 1968 concluded that proper and prompt analysis of data on insider trading could be profitable (Lorie and Niederhoffer, 52). In order to reach this conclusion, the authors randomly chose 30 companies and study its stock data from 1961-1964 and during 1957-1960 to compare the profitability of trading by insiders in the same companies in both periods. Their findings indicated that there was no tendency for insiders of individual companies to trade with superior success but they did not reject their initial hypothesis that insider trading can be profitable with proper and prompt analysis of data. Another testing method discovered that insiders are able to predict their own stock's future. The sample size of the research covered 200 large firms in the period 1962-1968. The author examined the profitability of insider trades through testing the performance of a security subsequent to specific types of insider trades in that security.

Based on all the samples in the study, the author concluded that insiders do possess special information. However, only the intensive trading samples with 8-month holding periods had large returns after transaction cost being taken into account. The data also suggested that insider's short-term predictions are more accurate than long-term predictions (Jaffe, 428).

Another study that delivered a new perspective of insider trading written by Seyhun, was published in 1986. The author attempted to explain insider trading by observing the bid-ask spread. In particular, the market-model, a statistical model based on the joint normality of the distribution of security returns, was used to measure the expected returns to securities. The result showed agreement with previous studies that there was a hypothesized positive relation between the bid-ask spread and expected loss to insiders, which leads to his conclusion that there is negative relationship between the firm size and the predictability of insiders. In addition, the highlight of his research was that insiders' buys are followed by positive abnormal returns and are preceded by negative abnormal returns while insiders' sells are followed by negative abnormal return and preceded by abnormal positive return (Seyhun, 192). The research agreed with most existing studies that if an insider is an active trader, he would buy stock in response of incoming good news and vice versa. However, the study denied the possibility of outsiders earning abnormal profits (net exceeding trading costs) by following the publication of insider trading information.

Furthermore, one generally assumes that the trend of stock market could be associated with insider's trading behaviors. In particular, insiders' buys are believed to provide good signals of the firm's performance while insiders' sells are assumed to provide bad signals about the firm's performance. Knowing this trend, insiders might be able to manipulate the market to acquire abnormal profit even though they do not possess any non-public news. In order to verify this claim, Givoly and Palmon conducted a research in which they sampled 68 companies listed on the American Stock Exchange (AMEX) throughout the 3-year-period from 1973 to 1975. Another component of the sample was news reports collected from the Wall Street Journal Index, which were classified as "good", "bad" and "neutral" depending on the market response to their disclosure. The study focused on observing the association between insider transactions and subsequent news disclosure to estimate and detect transactions that yield abnormal returns but did not find any consistent result to show that insiders exploit information about forthcoming news disclosure would realize abnormal gain. However, the result indicated that a significant abnormal return is produced as a result of the trades themselves, promoting the conjecture that public investors accept the superior knowledge and imitate the insiders' trading behaviors (Givoly and Palmon, 86). In other words, the authors suggested that insiders' gain might take place after public investors conduct transactions triggered by insiders.

Following this school of thought, another study of insider trading published in 1998 attempted to provide alternative explanation for insiders' excess returns and the behavior of public investors. Fried, the author of the study, found that insiders do time their trades to precede significant announcements about their firms and there is no doubt that some of the insiders' excess returns are due to insider trading, which he referred to as the Superior Investors Theory. According to this theory, insiders are able to outperform the market due to their superior investment abilities, which means they may well have more investment skills than the average stock market investor. This theory does not hold because successful investment decisions are not purely based on investment skills; if all the information is made available to the public, it is likely that all investor would react the same way, which leverage the profitability of the transaction and make it impossible for any individual to outperform the market. Fried's finding revealed that insiders of small firms consistently outperform insiders of large firms in their trading, which implied the denial of the Superior Investors Theory. Fried explained that small size of the firms make it more feasible for insiders to have better understanding of their firm's affair, which allows them to better forecast the prospect of the firm and make investment decision while this case is not often seen in big firms. Therefore, it can be concluded that insiders' abnormal profit are attributable to their access to inside information rather than their investment skills (Fried, 327). Another theory mentioned in his research is the Copy Cat Effect Theory. The theory suggested that the abnormal price changes that occur after insiders' trade are often not due to the release of specific news about their firms. Instead, it is the stock prices move in reaction to news of the trading itself: insiders' excess returns occur not because of their access to non-public information, but because "market participants think insiders have inside information" and they copy-cat behaviors, which leads to the movement of the stock price in the direction favorable to the insider (Fried, 3328).

### **III. Testable Hypotheses**

Due to the mixed results from existing studies regarding the relationship between insider trading and stock price accuracy, there is no final conclusion whether insider trading contributed to the enhancement of market efficiency and whether insiders are able to outperform the market. Hence, this research paper attempts to re-examine the performance of insiders using existing studies combining with additional testing and analysis.

According to Siegel's description in his book "Stocks for the long run", the market does not necessarily respond to news, or what is announced; rather, it responds to the difference between what the traders expect to happen and what actually happens (Siegel, 258). He elaborated his statement further arguing that the reason behind the market reaction is because the prices of securities already incorporate all the information that is expected. As a result, if a firm is expected to report bad news, the market has already priced this information into the stock price. However, if the earning report is not as bad as anticipated, the announcement will raise the price of the stock. Two forms of market efficiency have been continuously tested to describe the stock market. Semi-strong form efficiency refers to when security prices reflect all publicly available information while strong form efficiency argues that any information, publicly available or privately held can be used to generate abnormal return. Apparently, if the market can be described using strong form efficiency, there would be no chance for investors to beat the average gain of the entire market, regardless of how much information he or she gathers since all market participants also have access to the relevant information. Therefore, the market is often described as semi-strong efficient and insiders who possess information outside the scope of public announcements, are believed to have an advantage over other investors and thus, they have the ability to beat the average market (*Semi-strong, 17*).

In general, the stock market is often described using Random Walk Theory, which refers to a walk in which future steps or directions cannot be predicted on the basis of past history (Malkiel, 26). When applied the theory in the stock market, it means that the direction and fluctuation of stock prices are unpredictable. As the stock prices are unpredictable, systematically beating the market would be impossible for any individual investor. The randomness of the market thus allows some individuals to be successful and causes some others to lose money. However, investors tend to believe that their success was based on their investment skills rather than luck (Stiglitz, 269).

The exception of the Random Walk Theory, company insiders, is likely to have the opportunity to systematically beat the market. Corporate insiders include officers, directors and employees of the company. Due to their roles and work tasks in the corporations, these individuals possess information that is unavailable to the public. In other words, they have access to news regarding what the company is doing as well as where the company is headed to in the future. Should the company be facing any issue that might adversely affect its performance in the future, such as poor earnings, slow growth, or lawsuits, insiders can sell their stocks as they perceive the stock no longer attractive and refuse to continue their investment. Once the news goes public, the stock price decreases as a response of public investor to the announcement. However, insiders are able to avoid the loss as they sell their stocks prior to the decrease in stock price. Similarly, the access to non-public information allows insiders to react when good news happens. If the company has the potential to achieve a new success in the future, such as high earning, new projects, insiders can buy shares before the public is made aware of these facts. Once the announcement is made, the stock price will incorporate the good news. As a result, the stock price will rise up, but only after the insiders have already completed the purchase. In both cases, the insiders beat the average market by using their private information. The main focus of this paper is to examine the validation of this statement using empirical testing techniques. In short, this study attempts to test the hypothesis that insiders are able to perform better than the average market.

### **IV. Methodology and Data**

This study used stock prices and the SEC Ownership Reporting System data file to extract corporate insider purchases and sales as a testing approach. The SEC requires that all corporate insiders and any owner of 10% or more of a company's stocks to be registered and file Forms 3, 4 and 5. In particular, Form 3 refers to initial filing. According to the SEC, "an insider of an issuer that is registering equity securities for the first time under Section 12 of the Exchange Act must file this Form no later than the effective date of the registration statement" ("Fast Answer, 2015). Changes in ownership are reported using Form 4, which must be reported to the SEC within two business days before the actual trading day.

Finally, Form 5 is often used to report transactions that “should have been reported earlier on a Form 4 or were eligible for deferred reporting.” This study was initiated and inspired by Josef Lakonishok’s article “Are Insider Trades Informative?” in which the author examine insider trading activities of all companies traded on the NYSE, AMEX, and NASDAQ during the 1975-1995 period. The study examined the magnitude of insider trading activity and how this activity has changed over time. The author then examined how the market reacts around insider trading and reporting dates as well as the response depends on company characteristics.

Lakonishok’s study is probably the most comprehensive examination of the information content of insiders’ trades and the market’s response to those trades. However, due to the limitation of time and access to information, the current study only followed a partial part of this research in order to apply this test into recent market and observe the results to determine if the conclusion drawn in 2001 is still valid in the recent stock market. For the purpose of this research, which focuses on the transfer of stock ownership, only Form 4 will be used to obtain sample data. After filtering the SEC database to only Form 4, the study proceeded to filter the type of security: only transactions related to the transfer ownership of common stock were kept. Afterward, an examination of the date of the transaction, codes for the type of transaction (buy or sell) and price paid for the security will be conducted. The sample size includes thirty instances of insider buying, thirty instances of insider selling, and sixty Standard and Poor’s 500 (S&P 500) index corresponding with the transaction date of insider selling and buying transactions. The sixty instances of insider buying and selling transactions were chosen randomly and they occurred at different time periods during 2013. For each transaction, the price at which the insider either sold or bought the stock was recorded, along with the stock’s price after one month, six months, and one year. The test proceeded to calculate percent change in stock returns for each period. This step was intended to record the fluctuations of stock prices after insiders’ transaction.

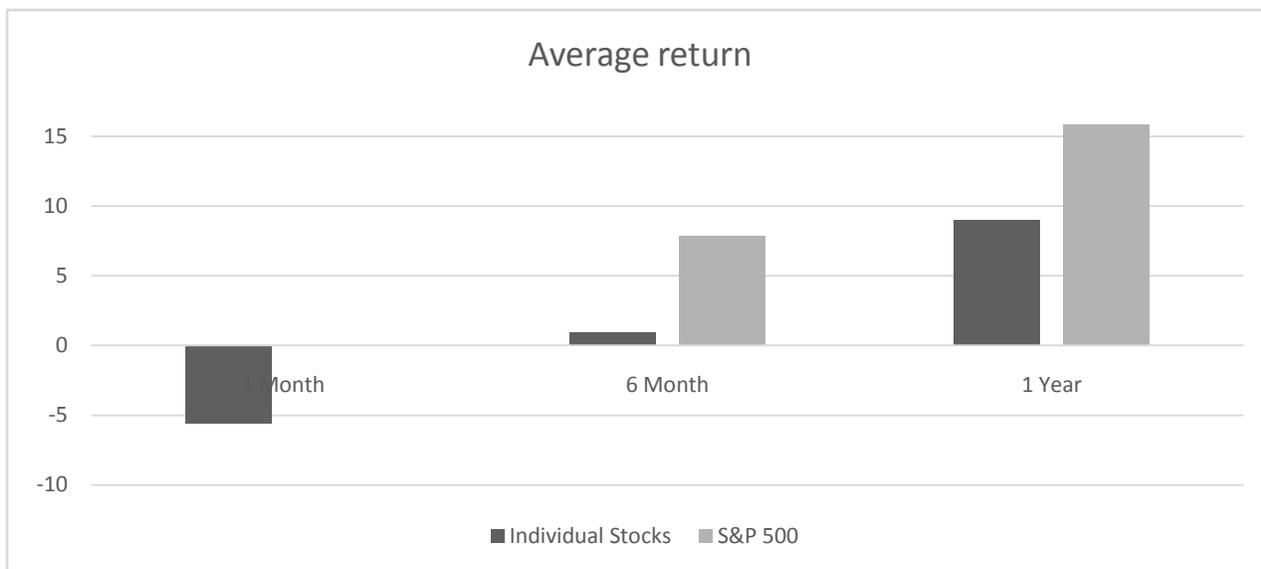
In order to determine whether the performance of insiders’ investment decisions outperforms the average market, the S&P 500 was used to represent the broad market return. The S&P 500’s percent change was calculated for each of the sixty insider trades at the corresponding time periods. Both stock prices and S&P index data were obtained through Yahoo Finance website (Yahoo! Finance). The percent change of mean returns for both individual stocks and S&P index was calculated using this formula:

$$\frac{Value\ 2 - Value\ 1}{Value\ 1} * 100$$

The results were then summarized and analyzed to verify the validation of this study’s hypotheses.

## ***V. Summary Statistics***

Table 1 reports summary statistics of thirty insider-buying activities occurred between January 2013 and December 2013. Table 2 reports summary statistics of insider-selling activities occurred between January 2013 and December 2013. For both group of insider trading activities, the mean change and standard deviation of the individual stocks and S&P 500 were calculated during the period of 1 month, 6 months, and 1 year. The details of stock name, transaction price in different periods and calculations could be found in the Appendices attached.

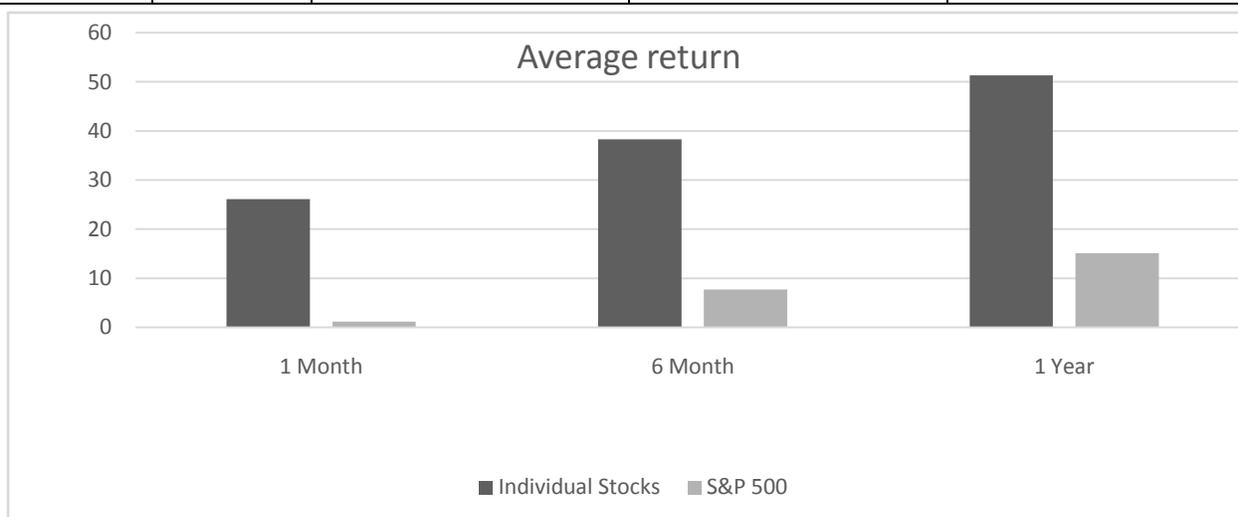


**Table 1. Insider Buying**

		1 Month	6 Months	1 Year
Individual Stocks	Mean Return	26.13%	38.32%	51.34%
	Standard Deviation	24.37%	28.57%	34.71%
S&P 500	Mean Return	1.19%	7.73%	15.10%
	Standard Deviation	2.06%	2.24%	3.05%

**Table 2. Insider Selling**

		1 Month	6 Months	1 Year
Individual Stocks	Mean Return	-5.55%	0.91%	8.97%
	Standard Deviation	9.76%	17.29%	25.11%
S&P 500	Mean Return	0.01%	7.85%	15.85%
	Standard Deviation	2.33%	2.52%	2.94%

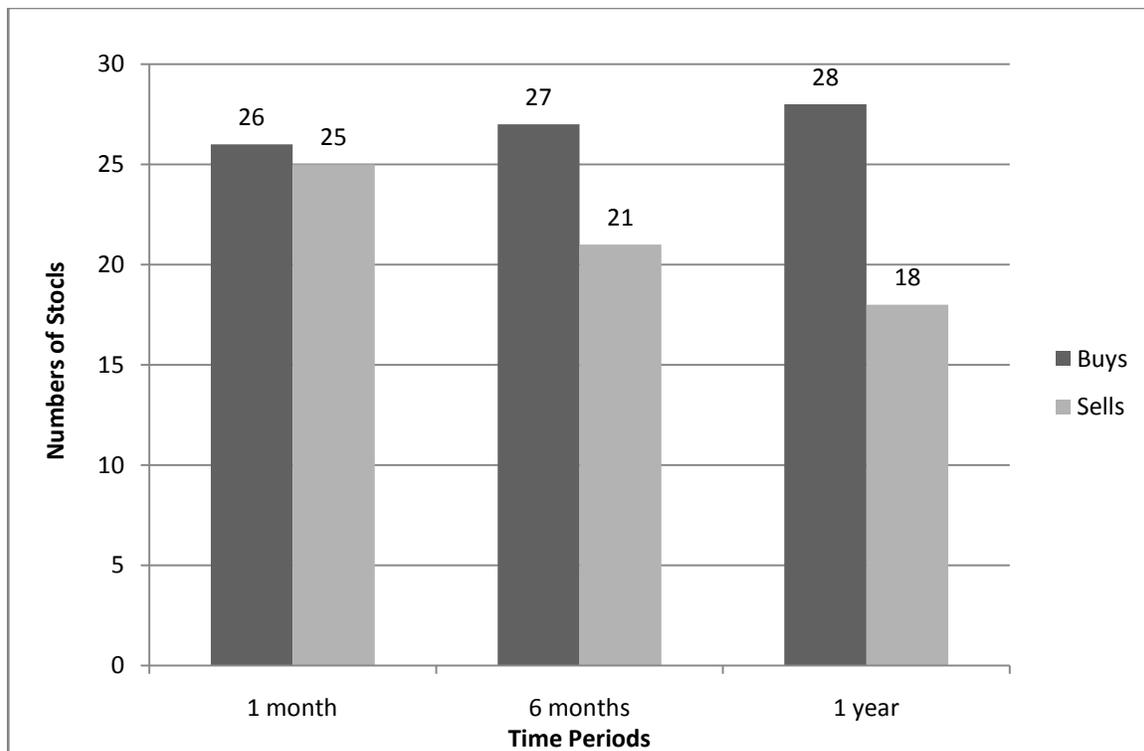


The initial results appear to support the hypothesis that insiders were able to beat the average market. Table 1 showed that insiders did outperform the market over each period by a significant amount, which increases over the period of time. The data showed that after their purchase of stock, insiders were able to gain more return than the average market. In particular, insiders beat the market by 24.94 percent over one-month period, 30.59 percent over six-month period, and finally 36.33 percent over one year period. The data presented in Table 2 also indicated that insiders continued to outperform the market through selling transactions. After the selling transaction of insiders, the individual stocks show tendency of performing worse than the average market over all three periods. The insiders beat the market, as they were able to sell the stock before the depreciation of their stock occurred and therefore, avoid the potential loss. In the one month period, stocks experiencing insider selling actually produced negative average net return of -5.55%. Over three periods examined, the individual stocks performed worse than the average. In particular, individual stocks return 5.56% less than the average market during the period of one month, 6.94 % during the period of 6 months, and 6.88% during the period of one year.

In addition, in his book “The Inner Game of Investing”, Derrick Niederman argued that the best way to satisfy all parties is to suggest that the upward bias of the stock market relates to the steady rise in corporate earnings, and that the near-term behavior of the market is indeed a type of random walk around this ever-increasing earnings trend line (Niederman, 140). This statement probably provided the best explanation for the stock market trend in which the market rises as a whole. On average, it is observed that all the stocks experience a gain in price regardless of the nature of the insider activity. The stocks with insider buying showed positive change return and the increases were larger than the average market, which was expected before the conduct of the experiment.

However, in contrast with the predictions, the stocks experiencing insider selling actually presented net gains except for one-month period. The only alignment with the prediction was that insider-selling stocks underperformed the market.

**Figure 1: Amount of Stocks that outperform the market**



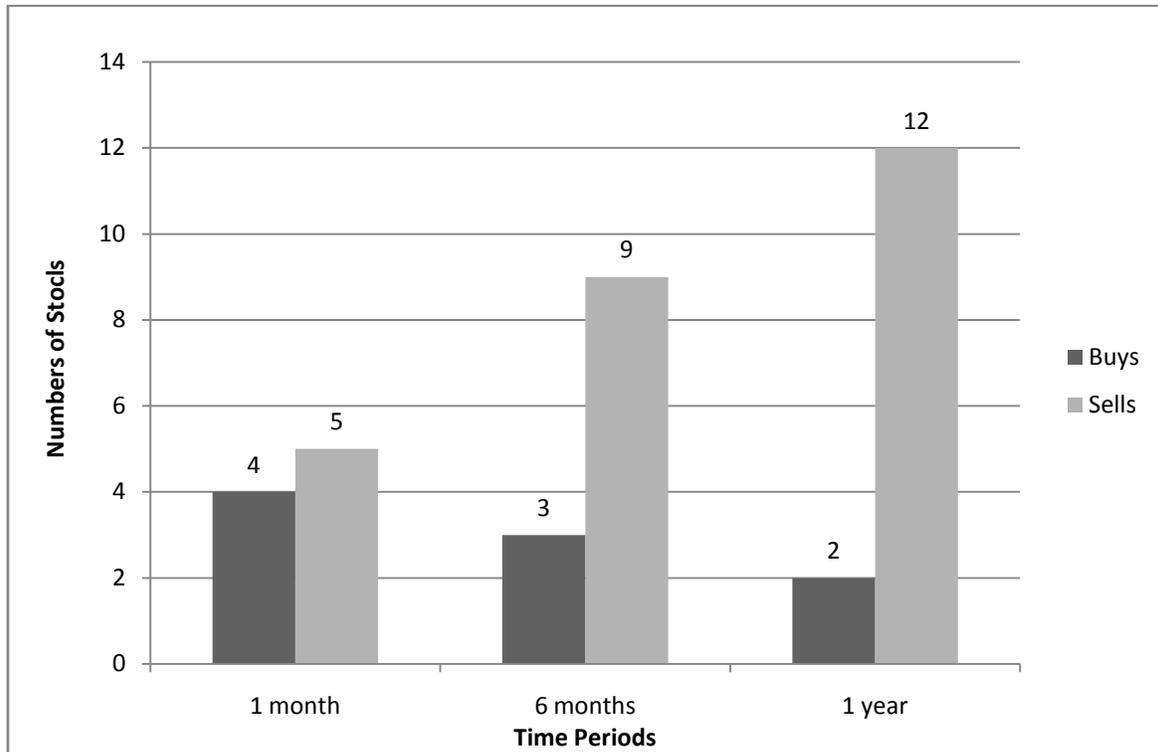
**Figure 2: Amount of Stocks that underperform the market**

Figure 1 and Figure 2 present how many stocks in the sample outperform and underperform the market at which period. Based on the graphs, there is a consistent trend in both insider-selling stocks and insider-buying stocks observed. In particular, the amount of insider-buying stocks that outperformed the market increased consistently over the time while the amount of insider-selling stocks that outperformed the market decreased consistently over the time. After the obtaining of initial result, statistical test was run to examine the significance of the data before the final conclusion was drawn. The study used the two-sample t-test to determine whether two independent populations (Individual stock returns and S&P Index) have different mean values. This test helps clarify the different of returns between individual stocks and S&P Indexes, which answers the question whether the difference in the initial result represents a real difference between the two populations, or just a difference in my particular sample, which might not be representative of the true population.

**Table 3. Insider-Buying t-test:**

	One month period		Six-month period		One-year period	
	Individual Stocks	S&P	Individual Stocks	S&P	Individual Stocks	S&P
Mean	26.13	1.19	38.32	7.73	51.34	15.10
Variance	5.94	0.04	8.16	0.05	12.04	0.09
Observation	30	30	30	30	30	30
Hypothesized Mean	0		0		0	
df	29		29		29	
t-Stat	5.585528		5.8459382		5.6972911	
P(T<=t) one-tail	2.4962E-06		1.2163E-06		1.8327E-06	
t Critical one-tail	1.69912702		1.69912702		1.69912702	
P(T<=t) two-tail	4.9925E-06		2.4326E-06		3.6654E-06	
t Critical two-tail	2.0452296		2.04522964		2.04522964	

Table 3 presented statistical results conducted for insider-buying transaction and the S&P indexes over 1-month, 6-month, and 1-year period. Comparing between individual stocks' returns and the S&P index, there was a statistically significant difference between the two populations ( $p < 0.05$ ). Therefore, the null hypothesis is rejected: there is a difference in the percent change between individual stocks and S&P, which indicates that insider buyers did outperform the average market.

**Table 4. Insider-Selling t-test**

	One month period		Six-month period		One-year period	
	Individual Stocks	S&P	Individual Stocks	S&P	Individual Stocks	S&P
Mean	-5.55	0.01	0.91	7.85	8.97	15.85
Variance	0.95	0.05	2.99	0.06	6.30	0.09
Observation	30	30	30	30	30	30
Hypothesized Mean	0		0		0	
df	32		30		30	
t-Stat	-3.0313067		-2.1757318		-1.49062778	
P(T<=t) one-tail	0.00239805		0.0187921		0.07324981	
t Critical one-tail	1.69388875		1.69726089		1.697260887	
P(T<=t) two-tail	0.0047961		0.03758422		0.14649962	
t Critical two-tail	2.0369333		2.04227246		2.042272456	

Unlike the case of insider buying test, the t-test for insider selling, which is presented in Table 4, did not produce consistent results. According to this statistical analysis, the return differences are only statistically significant during one-month and six-month period. The result for one-year period of insider selling (both one-tail and two-tail tests) showed that there was no statistically significant difference between individual stock return and S&P index percent change. Therefore, it is impossible to reject the null hypothesis that there is no difference in the stock returns and the market returns during one-year period. The t-test results appeared to be supportive of the proposed hypothesis that insider buyers were able to beat the average market, which would be further explained shortly. Malkiel spent a chapter of his book talking about behavioral finance, which suggested some interesting facts and statements that could be used as explanations for the results of the t-tests.

He quoted Meir Statman's statement, which claimed that behavioral finance is not a branch of standard finance, but its replacement with a better model of humanity (Malkiel, 235). This school of thought was mentioned in different literature studies mentioned in the beginning of this paper, in which it claimed that the stock market would not be adequately described if using merely stock market theories and techniques. Malkiel elaborated on this point by stating that efficient-market theory, modern portfolio theory, and various asset-pricing relationships between risk and return all are built on the premise that stock-market investors are rational and they make reasonable estimates of the present value of stocks, and their buying and selling ensures that the prices of stocks fairly represent their future prospects. However, the stock market actually includes both rational investors and irrational investors, who behave outside the scope of investment technology. Insiders who are aware of this tendency might be able to manipulate the crowd and drive the stock price toward his favor without possessing any insider information.

The t-tests revealed that at the one-month, six-month, and one-year periods, stocks bought by insiders did produce returns above the market. This phenomenon might not purely because the insiders possess better investment skills, but it might be explained using herding concept. This concept promoted the idea that groups tend to make better decisions than individuals (Malkiel, 245). Malkiel claimed that in the free-market price system where demand and supply mainly determine price levels, a variety of individual decisions by consumers and producers leads the economy to produce the goods and services that people want to buy (Malkiel, 245). He referred this concept to "the wisdom of crowd behavior". Applying this concept to the stock market, millions of individual and institutional investors by their collective buying and selling decisions produce a tableau of stock-market prices that appear to make one stock just as good a buy as another. As a result, a transaction made by insider buying might trigger the crowd to perceive the transaction as a potential investment opportunity and cause investors to imitate the action.

As more people invest into the stocks, the price will rise up since the law of demand and supply is applied. At this point, insiders who initiated the trend have already realized profit, which allowing him/her to outperform the market without much involvement of non-public information regarding the firm. On the other hand, there are several possible justifications for the t-test result of insider sellers, which claimed that longer-run (one year) returns of insider selling transactions are not statically significant. Due to the fact that there are numerous reasons other than inside information for insiders to sell shares of their company, it is not surprising to discover that insider selling data would not be statistically significant in one year.

In brief, Malkiel's theory was helpful in explaining why insiders might sell their shares not considering private information as an input for the decision making process. Following the study of Malkiel regarding behavioral finance, people are seen far more distressed at taking losses than they are overjoyed at realizing gains (Malkiel, 263). As a result, investors tend to take greater risks to avoid losses than they would to achieve equivalent gains; they tend to be more willing to discard their winners than selling their losers. Therefore, when insiders are observed to sell their stock, it might be mainly due to the fact that the stock has achieved their expected return and selling it will enable them to enjoy the success of being correct and not because they have seen any unfavorable trends.

In addition, insiders may be prompted to sell their shares for various reasons. Many companies use their own shares as a form of compensation to their executives. The common assumption is that as the profit of executives is tied to the performance of the company, which is reflected through common stock prices, executives will be motivated to act and make decisions that maximize shareholder's benefit, including the executives themselves. Executives who are compensated with company shares might proceed to sell the stock to cash out the shares if he/she prefers an immediate reward. Moreover, portfolio diversification might be a reason that explains why insiders sell their shares. A common investment knowledge that many investors abide and practice is "Never put all your eggs in one basket." Hence, it might be for diversification reasons that insiders decide to sell their shares to invest in other assets. Other studies that focused on insider trading provide a diverse argument over whether insiders are able to outperform the market using their prediction of future stock movements. They argued that the sources of insiders' predictability are ambiguous and in facts, there was no empirical test that absolutely protected the hypothesis. Givoly and Palmon, years after a series of statistical testing, had concluded that profits from insider trading are not associated with disclosure of specific news about the company as they observed that the abnormal return to insider transactions endures well beyond the typical period of market reaction to the disclosure of a specific news event (Givoly and Palmon, 86).

In a study of market efficiency, the authors replicated previous researches to examine the profitability of insider trading over the period of 1973 to 1982, using a method to measure abnormal returns that takes into account the known tendency of stock returns to depend on market value of equity and E/P ratio. The result of the first-round test showed similarity to earlier studies and seemed to agree that profits can be earned when outsiders act on the publicly available information concerning insider transactions that are published in the SEC's Official Summary (which is often referred to as Form 4). The authors took a further step when they adjusted abnormal return measures, where they found that outsider profits disappear if they included 2 % transaction costs. In conclusion of the research, they thus rejected the role of monopolistic access to information in contribution of abnormal returns gained by insiders and called it a "deus ex machina" (Zaman and Rozeff, 43). In fact, they suggested that abnormal returns might be generated by mismeasurement of abnormal returns that arise due to the presence of size and earning to price ratio effects.

Another addition to the series of researches that questions the predictability of insiders is an article written by Piotroski and Roulstone in 2005, in which the authors argued that insiders are both contrarians and possessors of superior information. Their findings indicated that insiders' profits are partially related with information advantage and partially with the mispricing of the stock (Piotroski and Roulstone, 80). However, their statement could potentially be argued as in an efficient market, any mispricing that might arise from irrational investors would be immediately corrected by rational traders, often referred to arbitragers. Lastly, it is only possible for public investors to using insider trading as stock price indicators when a trader decides to buy or sell a security. However, the decision to not trade a security is sometimes equally important (Gasparino, 18). Gasparino elaborated on this point by describing a situation when no trading activity was made to alert the market.

He stated that when an investor's inside source at a company whose stock he/she does not own leaks the financial information but it appears to be disappointing and therefore the investor decides not to buy that security, it is also considered an illegal decision. However, there is no proof to accuse the investor as well as the message of not buying the stock would never get to the public investors. This argument is relatively interesting as it indicates how public investors fail to receive stock price's signals communicated through insider trading.

## ***VI. Summary And Conclusion***

The issue of insider trading is widely documented and has always been a controversial topic as the public yearns for a final conclusion. The perception that insiders are better informed about the affairs of the company and that insiders trades are positively associated with the firm's future earnings innovation motivate many public investors to imitate insiders with the purpose of achieving abnormal profit. In this paper the information content of insiders' trades and the market's response to those trades were examined. With a sample size of 30 instances of insider buying and 30 instances of insider selling transactions, the initial results indicated that in most cases, insiders are able to outperform the market. However, there is no absolute evidence that I could find supporting the argument that insiders' abnormal profits are due to their access to company's private information. In addition, the sample size is limited to only 30 instances of insider buying and 30 instances of insider selling, which only represents a small population of the stock market. Therefore, a comprehensive examination with a more extensive database is suggested before any conclusion over this subject matter is drawn.

In conclusion, looking at the aggregate picture of the stock market, the possibility of developing of an investment strategy using insider trading information is not straightforward and therefore, is not advised even though the initial empirical results have suggested so. As far as an attempt of advising public investors, it is important to keep in mind that most of the market capitalization is in large stocks, where insider activities have limited value. One might consider trading in small stocks, but the transaction cost would offset a large portion of the profit realized. Even though beating the market average is the desire of the majority of public investor, it is often not the case. As Malkiel stated in his book instructing the art of investing, it is really an art requiring a certain talent and the presence of a mysterious force call luck. "Indeed, luck may be 99 percent responsible for the success of the very few people who have beaten the average." (Malkiel, 416).

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